An Exploration of the Relationship Between a Registered Dietitian Nutritionist's Level of Self-efficacy to Serve as a Preceptor and Prior Preceptor Training.

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Abstract

YOUNG, BETH A., Doctor of Education in Educational Leadership, December 2022.

An Exploration of the Relationship Between a Registered Dietitian Nutritionist's Level of Self-efficacy to Serve as a Preceptor and Prior Preceptor Training.

Chair of Dissertation Committee: Dr. Tori L. Colson

A substantial amount of research has identified the barriers and limitations to serving as a dietetic preceptor and the specific training and educational needs. However, there is limited research on how effective these preceptor training programs are in improving the self-efficacy of RD/RDN's skills and knowledge for serving as a preceptor. The purpose of this study was to explore the relationship between a registered dietitian's (RD/RDN's) level of self-efficacy to competently serve as a preceptor and the amount and type of preceptor training.

The sample population (*N* = 145) consisted of RD/RDN's who currently serve or have ever served as a preceptor. Participants were recruited through the Nutrition and Dietetic Educators and Preceptors, Indiana Academy of Nutrition and Dietetics membership, and through social media groups on Facebook and Twitter, whose memberships consisted of dietitians that may have served as dietetic preceptors. A web-based survey consisting of demographic questions and a 13-item *Preceptor Self-Efficacy Questionnaire* was distributed using Qualtrics.

Findings indicated a statistical difference in self-efficacy scores between preceptors that had completed the ACEND preceptor training versus those that did not. Most participants felt that the ACEND training was *moderately effective* at preparing them for the preceptor role. Participants reported that the most beneficial topics in the ACEND training included preceptor roles and responsibilities, evaluation of students, managing student objectives/expectations, teaching strategies, and learning styles. Participants reported the highest levels of self-efficacy in the construct of communication skills,

the next highest was management skills, and the lowest levels of self-efficacy were reported for teaching/mentoring skills.

The specific skills with lower levels of self-efficacy that were identified in each construct should be incorporated into future preceptor training programs to aid in improving a preceptor's level of self-efficacy. These skills include the ability to provide verbal feedback, assist interns with problem-solving and critical-thinking skills, conflict management, the ability to assess an intern's learning needs, and, lastly, the ability to adapt their teaching to meet an intern's learning style. Based on the literature review and the findings from this study, it would be beneficial for the dietetics profession to have a standardized curriculum for preceptor training that provides a minimum or baseline level of skills and knowledge taught to preceptors.

DEDICATION

This dissertation is dedicated to my husband, Tim, who has been a constant source of strength, support, and unwavering belief in my abilities. Thank you for the sacrifices you made to help me achieve my dream. I am truly blessed to have you by my side. To my daughters Alexandria and Paige, you were my inspiration and drive behind all the late nights and long weekends of research and writing. I wanted you both to see that you can achieve any dream you have- never give up!

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Chapter 1: Introduction

Background

Preceptors are practitioners that supplement the academic training students receive in a didactic setting. While preceptors' roles will vary based on the concentration area in which they work, their role remains consistent as a teacher, supervisor, and role model for future dietitians (Bengtsson & Carlson, 2015; Taylor et al., 2010; Walker & Grosjean, 2010). Most health professions, such as nursing, occupational therapy, physical therapy, and pharmacy, utilize preceptors to supplement the instruction of students in the clinical setting. Although the majority of existing literature that centers on the concept of "precepting" comes from the field of nursing, literature that does exist supports the need for increased training for nursing and dietetics preceptors (Datta, 2017; Hutchins et al., 2021; Yonge et al., 2008). The most commonly reported preceptor training needs include a lack of knowledge and self-confidence in their ability to complete evaluations, provide feedback and time management (Bengtsson & Carlson, 2015; Nasser et al., 2014; Sarcona et al., 2015; Taylor et al., 2010; Winham et al., 2014).

Problem of Practice Statement

A substantial amount of research has identified both the barriers and limitations associated with serving as a preceptor as well as identifying specific training and educational needs of preceptors. Although the Accreditation Council for Education in Nutrition and Dietetics (ACEND) provides a self-guided, online preceptor training course, no research to date has been identified that examines the effectiveness of that course at improving the self-efficacy of RD/RDN's about the specific skills and knowledge necessary for serving as an effective preceptor. The purpose of this study was to explore the relationship between a registered dietitian's (RD/RDN's) level of self-efficacy to competently serve as a preceptor based on the amount (i.e., none or some) and type (i.e., ACEND or other) of preceptor training they received.

Theoretical Framework

Albert Bandura's social cognitive theory explains three constructs that describe psychological capacity in people: environmental, behavioral, and cognitive (Lightsey, 1999). The cognitive construct incorporates both efficacy and outcome expectations. According to Bandura (1977), self-efficacy is centered around the beliefs an individual has about the skills they possess, as opposed to the skills themselves. Self-efficacy is skill or task-specific; it is not general in nature. An individual could have high self-efficacy related to one skill and low self-efficacy regarding a different skill (Bandura, 1977). Self-efficacy is a characteristic that is susceptible to influence and manipulation (Bandura, 1977; van der Bijl & Shortridge-Baggett, 2001). Bandura (1977) identified that modeling, observations, and instruction can influence self-efficacy and that self-efficacy can be manipulated by expectations of desired behaviors or outcomes. Bandura (1977, 1986) stated that self-efficacy and outcome expectations govern an individual's willingness to engage in a task or activity. Outcome expectations, or the success of completing a task well, hinges on self-efficacy, indicating that self-efficacy is a better predictor of behavior than outcome expectations. An individual is more likely to perform a task they believe will produce a successful or desired outcome (Bandura, 1977, 1986).

Self-efficacy beliefs are built from four principal concepts: enactive mastery experiences, vicarious experiences, verbal persuasion, and affective states (Bandura, 1986). Enactive mastery experiences include practicing a skill or an earlier experience with using a skill, vicarious experiences involve watching others perform a skill, verbal persuasion is receiving positive feedback from others, and affective states are the physical and emotional responses of the body (Larsen & Zahner, 2011; Lightsey, 1999). Enactive mastery experiences in preceptor training could consist of role modeling

exercises to teach specific skills. Preceptor training that includes time shadowing other preceptors would be a technique to utilize vicarious experiences. Verbal persuasion and affective states could be incorporated throughout preceptor training in the feedback provided by instructors and peers. High self-efficacy has been associated with higher tendencies that individuals would complete tasks, take on additional responsibilities, and continue advancing their education (Caprara et al., 2006; Jex et al., 2001; Lightsey, 1999; Rambod et al., 2018). Rambod et al. (2018) reported that nursing preceptors who participated in an eight-hour preceptorship training program showed a significant relationship between high levels of self-efficacy and increased learning outcomes, including higher levels of independence, motivation, and responsibility. Given these principal concepts, self-efficacy theory can be used to influence preceptor behaviors (Rambod et al., 2018).

Research Questions

Research Question 1-

What is the mean overall self-efficacy score of RD/RDNs about serving as a preceptor for dietetic interns?

Research Question 2-

Is there a difference in an RD/RDN's level of self-efficacy to perform the required skills and tasks of a dietetic preceptor between RD/RDNs who have or have not completed the Accreditation Council for Education in Nutrition and Dietetics (ACEND) preceptor training course?

Research Question 3-

Is there a difference in an RD/RDN's level of self-efficacy to perform the required skills and tasks of a dietetic preceptor between RD/RDNs who have completed 1) ACEND training or 2) other preceptor training?

Research Question 4-

Is there a difference in an RD/RDNs level of self-efficacy to perform the communication skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training, 2) no training?

Research Question 5-

Is there a difference in an RD/RDN's level of self-efficacy to perform the management skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training, 2) no training?

Research Question 6-

Is there a difference in an RD/RDN's level of self-efficacy to perform the teaching/mentoring skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training, 2) no training?

Research Question 7-

Do years of experience as a preceptor, previous type of preceptor training, age, level of formal education, and place or type of employment predict an RD/RDN's level of overall self-efficacy as a preceptor?

Research Methods

Causal comparative research design is nonexperimental and studies the relationship between variables after an action or event has already occurred (Causal-Comparative Design, 2010). This research determined if the independent variable "type and amount of preceptor training" affected the dependent variable "self-efficacy" among a purposive sample of RD/RDNs who have experience serving as a preceptor. Additionally, a causal-comparative research design was used to explore the relationship between an RD/RDN's level of self-efficacy to proficiently serve as a preceptor and their level of prior preceptor training. Participants completed a two-part questionnaire consisting of a nine-question

demographic section and a self-efficacy section where preceptors ranked their confidence levels in their ability to perform 13 tasks or skills related to precepting.

The sample population consisted of RD/RDNs who live in the United States and currently serve or have ever served as a preceptor for a dietetic intern. All participants were over the age of eighteen, consisted primarily of females, and came from a variety of ethnic backgrounds. This population was considered a purposive sample because they were recruited through the national Nutrition and Dietetic Educators and Preceptors (NDEP) listserv, Indiana Academy of Nutrition and Dietetics (IAND) membership, and through dietetics-related social media groups. NDEP and IAND members were recruited through an email describing the research project, along with instructions on how to access and complete the survey in Qualtrics, a web-based survey tool. Study participants were asked to assist with a snowball sampling. Snowball sampling is a procedure where the initially selected subjects are asked to suggest the names of other appropriate subjects to help increase the sample size or to increase the sample size of hard-to-reach populations (Ary et al., 2019). In addition, internship directors and coordinators who are members of NDEP or IAND were asked to forward the email with the questionnaire link to their internship programs preceptors, who may or may not be members of the NDEP practice group or IAND, to complete the questionnaire. The survey remained open for five weeks, with reminder emails sent through the NDEP listserv and email. Statistical analysis of the *Preceptor Demographic Questionnaire* and the *Preceptor Self-Efficacy Questionnaire* was completed using SPSS v.28.

Definition of Terms

Self-efficacy - is an individual's belief in their ability to execute the behaviors necessary to produce specific performance outcomes. Self-efficacy reflects the confidence one has in their behavior and motivation within a social context or environment (Bandura, 1977, 1986).

Registered Dietitian (RD) or Registered Dietitian Nutritionist (RDN) - food and nutrition experts who have earned a bachelor's degree from an Accreditation Council for Education in Nutrition and Dietetics (ACEND) approved university or college, completed an ACEND-accredited supervised practice program, passed the national examination administered by the Commission on Dietetic Registration (CDR), and has maintained continuing professional education requirements (ACEND, 2021a).

Preceptor - a coach, mentor, teacher, or colleague that fosters the transition and growth of a student into professional practice (Bengtsson & Carlson, 2015; Taylor et al., 2010; Walker & Grosjean, 2010).

Dietetic Internship (DI) or supervised practice - a postbaccalaureate program that provides required competencies and supervised practice. Dietetic students are required to have completed an ACEND-accredited didactic program in dietetics (DPD). A Coordinated Program includes both the required undergraduate coursework and the supervised practice in one degree-granting program (ACEND, 2021a).

Chapter 2- Review of Literature

History of Dietetic Internship and Preceptor Role

While the primary focus of this study is on dietetic preceptors, this literature review encompasses research about preceptors from nursing and other allied health professions (e.g., occupational therapists, pharmacists, and physical therapists). A preceptor can be described as a coach, mentor, teacher, or colleague that fosters the transition and growth of a student into professional practice (Bengtsson & Carlson, 2015; Taylor et al., 2010; Walker & Grosjean, 2010). The field of dietetics has a long-standing history of having a "hands-on" approach to education and training, with clinical training being an integral component and utilizing preceptors to teach students. In 1903, the earliest documented training in dietetics was a 3-month program housed in hospitals. It wasn't until 1925 that a Bachelor of Science degree, with at least six months of hospital training, was required for an entry-level position as a dietitian. (Cassell, 1990; Gilbride & Conklin, 1996). A committee was formed between the American Dietetic Association and the American Home Economics Association in 1935 to evaluate the educational requirements for dietetics (Cassell, 1990). In 1936, 53 hospital-based dietetics courses were evaluated and approved. In 1947, the American Dietetic Association voted on and approved the term dietetic intern to improve professional recognition for dietitians (Cassell, 1990). This change in formal education requirements promoted and encouraged more dietitians to serve and volunteer as preceptors (Cassell, 1990).

An accredited dietetic internship is a postbaccalaureate program designed to train students through supervised practice in three areas, including clinical dietetics, food service management, and community nutrition (ACEND, 2021a). Historically, internships could be sponsored by a hospital, college, or business. In the 1970s, the interest in the profession of nutrition and dietetics grew, and enrollment in undergraduate programs increased, while internship program capacity remained the same (Gilbride &

Conklin, 1996). Hospitals were unable to increase the capacity of their internship programs because of the change in the economic climate seen around this time in healthcare. In the early 1980s, the Centers for Medicare and Medicaid Services established Prospective Payment Systems and other cost-containment measures in healthcare (Guterman et al., 1988). Graduates of dietetic baccalaureate degrees faced challenges getting accepted into accredited dietetic internships due to the limited availability of internships.

In response, the profession instituted various models of advanced degrees with qualifying experience and coordinated programs that combine undergraduate didactic coursework and the supervised practice hours of the dietetic internship into one program without going through the traditional internship application process (ACEND, 2021a). The current steps to becoming an RD/RDN include 1) completing a bachelor's degree and receiving a verification statement from an ACEND-accredited program, 2) completing the ACEND-accredited supervised practice hours, 3) passing the Commission on Dietetic Registration's (CDR) dietetics registration exam, 4) gain licensure in your state of practice, and 5) maintain continuing education hours (Academy of Nutrition and Dietetics, 2018).

Beginning in 2024, a minimum of a master's degree will be required to take the CDR dietetic registration exam (ACEND, 2021a). Appertaining to the new mandate, the ACEND Board developed and released the standards for the optional *Future Education Model* (FEM), which is competency-based and incorporates experiential learning experiences throughout the program to support the didactic coursework. The FEM eliminates the need for the traditional dietetic internship; however, preceptors will still be utilized throughout the FEM's experiential learning experiences (ACEND, 2021a).

Internship Process

The present-day process for undergraduate dietetic students applying for and completing a dietetic internship (DI) is highly complex and time-consuming. A study conducted in 2015 on dietetic students in Ontario, Canada, showed that 89% of successful, first-time applicants spent between 21 and 60 hours preparing their application (Siswanto et al., 2015). Senior dietetic students apply for accredited DI programs using a two-step computer matching process. First, the student's application goes through a web-based system called Dietetic Internship Centralized Application Services (DICAS), where the student can apply to multiple DI programs using a single application. Second, a clearinghouse service called D&D Digital provides a platform for students to rank order programs and for DI programs to rank order students. On two specified "match days" per year, one day in the fall and one day in the spring, students are notified if they are "matched" to a DI program (ACEND, 2021a). DI programs typically begin at the start of the academic year following undergraduate graduation. Dietetic students are eligible to sit for the national registration exam after completing both the accredited undergraduate degree and internship (ACEND, 2021a).

Acceptance Rates and Demand for Internships

The 2011 Dietetics Workforce Demand Study projected that by 2020, only 75% of the demand for RD/RDNs would be met (AbuSabha et al., 2018). The shortage of internship sites is one of the primary reasons that currently affects the supply of dietetics practitioners. In 2016, only 3,004 eligible dietetic students out of 5,944 were matched to dietetic internship programs, leaving half of the students without an internship which kept them ineligible to take the national registration exam for dietitians (AbuSabha et al., 2018). The number of accredited internship sites has remained stagnant for decades, with statistics released from AND showing that the percent of dietetic students placed in internship

programs in 1993 was 52%, almost identical to the match rate in 2016 (ACEND, 2018). In 2018, the placement rate of students was 62%, which was the highest placement rating since 2003 (ACEND, 2018). While the 2020 match rate of 70% may appear as an improvement for student placement in DI programs, the data shows that fewer students applied to DI programs in 2020 than in previous years, causing the percentage to be higher (ACEND, 2021b). Table 1 highlights the trends for match rates to DI programs.

Table 1

Percent change in numbers of openings, applicants, and match rates to DI programs from select years

	1993	2000	2003	2007	2010	2016	2018	2020
Number of Openings	1005	2163	2542	2520	2483	3389	4043	4155
Number of Applicants	1811	2859	2607	3795	4864	5944	5292	4239
Applicants Matched	947	1882	1916	2235	2436	2823	3248	2960
% Matched	52%	66%	73%	59%	50%	47%	61%	70%

Internship/Preceptor Shortage Issue

ACEND reports annually the number of graduates from a Didactic Program in Dietetics (DPD), the number of applicants to accredited dietetic internship programs, the number of open spots at internships, and the number of students that match to an internship program. According to ACEND's annual reports, since 1998, there have consistently been more graduates than available positions in internship programs. In 1998, there were 4,177 DPD graduates in the United States and only 2,036 internship openings, resulting in a maximum possibility of 48% of graduates matching to an internship program (ACEND, 2021b). In 2004, the profession saw the gap close the most in supply and demand for dietetic internships since the mid-1990s. In 2004 there were 3,122 DPD graduates and 2,509 internship openings, allowing for a maximum possibility of 80% of graduates to match for an internship. Over the

next decade, there was dramatic inflation in DPD programs, and by 2015 DPD graduates reached 6,889 nationwide (White & Beto, 2013). While DPD graduate numbers continued to rise, internship openings did not see the same rate of growth. In 2020, the number of openings in internships peaked at 4,155, which still falls short of the 2020 DPD graduate numbers of 5,112 (ACEND, 2021b).

While the potential for maximum DPD graduates to match to an internship program has been as high as 80% over the past decades, the average acceptance rate into an accredited internship program has ranged between 49%-73% since the early 1990s (ACEND, 2021b). The internship application and acceptance process are complicated and highly competitive. Due to the disproportionate graduation numbers, internship programs have large pools of applicants and can select the most qualified candidates. A finding from a study conducted to determine the perceptions of RD/RDNs regarding the benefits and barriers to serving as a preceptor revealed that only 1% of clinical dietitians indicated they were aware of the internship shortage (AbuSabha et al., 2018).

Preceptor Role and Responsibilities

A preceptor has been defined as an individual who is experienced in their field and whose responsibilities include teaching, supervising, and facilitating learning in the clinical setting. Preceptors also assume the role of a motivator, role model, counselor, and mentor to teach skills such as communication and professionalism (Barker & Pittman, 2010; Nasser et al., 2014; Ortman et al., 2010; Shinners & Franqueiro, 2015; Taylor et al., 2010; Yonge et al., 2008). Preceptors need to create an environment that fosters students to apply academic knowledge to practical applications and encourages critical thinking skills. Preceptors perform assessments and evaluations on students' performance and critique their work, which requires a professional relationship to be maintained and not one based on friendship (Barker & Pittman, 2010; Nasser et al., 2014; Ortman et al., 2010).

Ortman et al. (2010) examined the perceived roles and skills of 15 dietetic internship preceptors through an online discussion board. Participants stated that providing a safe learning environment with practical hands-on experiences and having a supportive relationship with the intern where the intern feels safe to ask questions and provide possible solutions were roles that a preceptor should fulfill. Nasser et al. (2014) surveyed 750 dietitians' perceptions of precepting. Results indicated the character traits that dietitians personally identified within themselves as important as a preceptor included innovation, knowledge, adaptability, and open-mindedness. More than 95% of the study participants agreed that preceptors should have knowledge of assessment and evaluation, and 90% reported the need for preceptors to have skills in planning, facilitation, and coaching (Nasser et al., 2014).

Student Perspectives of Preceptors

The preceptor-student relationship should be one of mutual respect to best support and foster a climate of active participation and an open learning environment. A student's perspective of a preceptor can provide insight into the characteristics or skills needed to be either an ideal or an ineffective preceptor. The most effective and desired attributes of dietetic preceptors can be categorized into four main themes; knowledge and experience, personal characteristics, teaching skills and attitude, and interpersonal relationships (Sarcona et al., 2015; Walker & Grosjean, 2010; Wolf & Dunlevy, 1996).

A preceptor's depth of current clinical knowledge, expertise in their field, level of experience, and ability to explain and demonstrate techniques are valued among interns. The ability of a preceptor to serve as a positive role model, provide constructive criticism, treat the intern with respect, and act professionally, allows the student to emulate similar behaviors (Sarcona et al., 2015; Walker & Grosjean, 2010). Walker & Grosjean (2010) conducted a review of the literature to assess dietitians' perspectives of preceptors' necessary attributes, with a total of 26 articles included in the review. Findings related to

preceptor knowledge and experience show students rank clinical knowledge and experience as high; however, research challenges the assumption that clinical knowledge enables a competent clinician to be a competent preceptor without specific preceptor training (Walker & Grosjean, 2010). Marincic & Francfort (2002) surveyed 116 dietetic preceptors to examine the relationship between preceptors' perceptions of benefits, rewards, and support from the educational institution. Of the respondents, 25% of preceptors had fewer than two years of work experience before becoming a preceptor (Marincic & Francfort, 2002). These findings indicate the professional norm of clinicians expecting to assume the role of a preceptor without proper training should be challenged.

Additional personal characteristics and skills that define an effective dietetic internship preceptor include being a strong advocate for the profession, an effective communicator, flexibility, ability to problem solve, leadership, time management, and overall experience (Ortman et al., 2010). Walker & Grosjean's (2010) review of the literature revealed students place a higher value on learning from preceptors who exhibit honest and ethical behavior. Findings also suggest that preceptors who have a sense of humor and demonstrate warmth and kindness aid in decreasing student anxiety during the internship (Walker & Grosjean, 2010). Students closely connected personal characteristics with interpersonal relationships. Walker & Grosjean's (2010) findings showed that students rated preceptors higher when a rapport was developed, students felt valued, contributed to the team, and felt accepted.

A preceptor's teaching and evaluation skills can foster either rewarding or frustrating experiences for interns. A preceptor may not have received training during their undergraduate program on adult education or evaluation, which are both tasks of a preceptor. According to a survey of 750 dietitians' perceptions of precepting, 84% of participants reported needing training on the assessment and evaluation of interns, and 79% wanted additional preceptor training (Nasser et al., 2014). Sarcona et al. (2015) surveyed 351 interns, evaluating the characteristics of preceptors. Interns reported that it

would be beneficial for preceptors to have additional teacher training in the following areas; having realistic expectations, raising questions that stimulate the student to think and learn independently, using time wisely, organization, using teaching activities that match the learning objective, and accessibility to the intern (Sarcona et al., 2015). Marincic & Francfort's (2002) findings show that 58% of the 116 dietetic preceptors surveyed received no formal preceptor training. The ability to perform evaluations and provide feedback is an essential skill for preceptors (Walker & Grosjean, 2010). These findings support the need for preceptor training.

Benefits of Serving as a Preceptor

Successful preceptorship is often measured in terms of intern success and outcomes, and this is a singular benefit that preceptors can experience. The research on preceptor benefits has been well documented to include both tangible and intangible benefits. The intangible benefits include pride in helping the profession or giving back, feeling a professional responsibility to precept, and that precepting provides personal and professional growth. The tangible benefits reported by preceptors include the purchase of books and reference materials, paying for professional membership dues, tuition reimbursement, and continuing education credits. Other forms of professional recognition for serving as a preceptor include collaboration or assistance with professional activities such as letters of recommendation, nominations for awards, or collaboration on research projects (Ortman et al., 2010; Taylor et al., 2010; Usher et al., 1999; Winham et al., 2014; Wiseman, 2013).

The Commission on Dietetic Registration (CDR) has approved for RD/RDN's to receive a maximum of three continuing education units (CEUs) per year for serving as a preceptor for an accredited dietetics internship program (Commission on Dietetic Registration, 2021). According to the NDEP 2017 Preceptor Survey, only 53% of current preceptors know that ACEND offers free CEUs to serve

as a preceptor. A preceptor's employer can obtain benefits from dietetic interns as well. Interns bring fresh new ideas, and the implementation of research projects and staff-relief activities are beneficial to the workplace. If an intern is offered employment after their internship, there is a saving in training time for the employer as well (AbuSabha et al., 2018; Winham et al., 2014).

Challenges and Barriers Faced by Current Preceptors

Research findings show that practicing RD/RDNs who serve as preceptors report a lack of time, decreased productivity, compensation, support, and resources as major barriers to serving as a preceptor (Morgan et al., 2018; Winham et al., 2014). Other barriers indicated include increased workload and lack of knowledge and proper training on how to become a preceptor (AbuSabha et al., 2018; Hutchins et al., 2021; Kruzich et al., 2003; Morgan et al., 2018; Winham et al., 2014; Wooden, 2012). In a survey of Canadian dietitians, it was reported by 90% of respondents that preceptors should be trained in planning, teaching, coaching, facilitation, and evaluation (Nasser et al., 2014). While research has been conducted to identify the perceived barriers and benefits of preceptorship, very limited research has been conducted to evaluate effective training programs for practicing RD/RDNs to become preceptors.

Barriers to Recruit Preceptors

Time and Support

The time spent working and teaching interns is in addition to preceptors existing workload and has been reported as the primary deterrent for preceptors across allied health professions. Preceptors also report challenges coordinating time with internship program faculty, other preceptors, and staff within other facilities, which can increase stress (AbuSabha et al., 2018; Kruzich et al., 2003). In a study

conducted by AbuSabha et al. (2018) to determine RD/RDN's perceptions of the benefits and barriers to precepting interns, 71% of the challenges mentioned by preceptors were related to time constraints. The time needed to train interns exceeds that required to perform regular job duties. Less than half reported their workload while precepting interns was appropriate. Nonpreceptors reported time constraints, heavy workloads, and being understaffed as reasons for refusing to take interns. Preceptors that discontinued supervising interns reported a lack of guidance and support from the internship program as one of the top reasons for refusing to continue taking interns (AbuSabha et al., 2018). Preceptors report that supervisors and peers support them conceptually. However, they are not supported through additional time or resources while supervising interns (Hutchins et al., 2021; Usher et al., 1999; Winham et al., 2014; Wiseman, 2013). In a study by Winham et al. (2014), preceptors' perceptions of support were identified by feeling a lack of preparation and clarity in their role, coupled with a lack of support from internship supervisors. The perception of institutional support was highest among current preceptors and lowest for nonpreceptors. This suggests that the perception of institutional support or nonsupport may be crucial in an RD/RDN's decision to become a preceptor.

Competencies

Self-Efficacy

The abundant literature supports the need for preceptor education and training; however, researchers have been slow to explore the perceptions of self-efficacy about their capabilities as a preceptor. It is commonly accepted that individuals with low self-efficacy avoid engaging in tasks they perceive will fail (Bandura, 1986; Laforêt-Fliesser et al., 1999; Lightsey, 1999). Preceptors with a higher level of self-efficacy may have a more significant impact on an intern's level of learning. Therefore, making it essential for preceptor education to enhance the self-efficacy and development of skills needed in preceptorship.

A preceptor's level of self-efficacy can determine how successful they are at teaching an intern the core competencies required during an internship. A successful entry-level dietitian will have a mastery of these core competencies. An effective preceptor training program should focus on strengthening a preceptor's teaching abilities in these core areas. An individual requires a high level of confidence in their ability to precept, teach and evaluate interns, to effectively serve as a preceptor (Brooks & Niederhauser, 2010; Lee & Song, 2013; Morgan et al., 2018).

Heale et al. (2009) surveyed clinical mentors to determine the barriers and levels of self-efficacy among preceptors in a clinical practice environment. Results found that preceptors had the lowest level of self-confidence for understanding the expectations of the internship program, their ability to identify the learning needs of a student, facilitating their use of research in practice, and evaluating the student's performance (Health et al., 2009). These barriers and low levels of self-efficacy were seen across disciplines, indicating a universal deficit in preceptor training. Not only are these findings indicative of preceptor training needs, but also the opportunity for interdisciplinary training opportunities (Heale et al., 2009). Larsen & Zahner (2011) evaluated an online preceptor training program for 31 public health nursing preceptors in Wisconsin. Results showed a significant impact on preceptor role knowledge and self-efficacy scores both immediately following the training, F (1,30) = 21.629, p = .000, and three months post, F (1,30) = 20.377, p = .000. The authors concluded that preceptors who completed the training reported greater knowledge in the preceptor role and increased confidence in their skills and abilities (Larsen & Zahner, 2011).

Preceptor training workshops and continuing education have resulted in preceptors feeling better prepared for their roles and having higher job satisfaction. Regular interaction with the faculty has also been reported to considerably increase their confidence and sense of ability in their role as preceptors (Yonge et al., 2008). Continuing education has been reported as an incentive for precepting;

thus, providing precepting workshops and continuing education is both preparatory and rewarding for preceptors (Marincic & Francfort, 2002; Morgan et al., 2018; Yonge et al., 2008).

Lack of Knowledge and Training

A commonly reported reason for RD/RDNs that have never precepted is due to the lack of training on internship expectations and preceptor duties (Datta, 2017; Hutchins et al., 2021). Likely because of a lack of guidance and instruction from the program's faculty, individuals report not feeling prepared for the preceptor role, resulting in preceptors integrating their values with the internship's curriculum (Yonge et al., 2008). Preceptors report an overall lack of preceptor training, a lack of well-defined responsibilities, accessibility to training resources, and inadequate preparation for the preceptor role, suggesting a need for enhanced training and guidelines for preceptors. A course or supplemental reading material and guidelines provided by the internship program were generally expressed as the training provided for their role as a preceptor (Nasser et al., 2014; Winham et al., 2014; Yonge et al., 2008).

Ineffective preceptors often lack skills in providing effective assessments, evaluations, and feedback (Nasser et al., 2014). If a preceptor is not adequately trained in proper evaluation skills and techniques, a student can feel judged or incompetent (Nasser et al., 2014; Sarcona et al., 2015; Winham et al., 2014). Preceptors report that they tend to teach students how they were taught and know little about the principles of adult education. Specific skills that preceptors need additional training on include providing appropriate feedback, setting expectations, how to deal with challenging students, time management, how to teach professionalism, and learning/personality styles (Bengtsson & Carlson, 2015; Nasser et al., 2014; Sarcona et al., 2015; Taylor et al., 2010; Winham et al., 2014).

Oler et al. (2015) conducted an online survey to identify the training needs of dietetic preceptors. A combined total of 614 internship directors and dietetic preceptors completed the survey.

It was reported that overall, only 45% of preceptors completed any preceptor training, with only 19% having received training on providing feedback, 22% on using effective communication skills, and 15% on how to foster critical thinking and problem-solving skills (Oler et al., 2015). A qualitative study of 15 Canadian dietetic preceptors indicated the need to develop more varied and accessible preceptor training, including recommendations for online training modules with examples and case studies on how to support various learning styles and evaluate interns (Ortman et al., 2010). Preceptors have also requested training materials to be in the format of both reference manuals for easy access and short workshops lasting one to two hours to earn continuing education credits for attending (Bengtsson & Carlson, 2015; Taylor et al., 2010). Similar struggles are seen in other health professions with preceptor development. The American Association of Colleges of Pharmacy Preceptor Development Task Force reported that 90% of pharmacy schools offer preceptor training, however, only 20% of pharmacy schools required preceptor training. A lack of resources and time were the main reasons for not implementing the training (Hartzler et al., 2015).

Preceptor Training and Evaluation

According to the 2017 NDEP Preceptor Survey, 61.4% of current preceptors either have not completed any preceptor training or were unaware of available preceptor training programs (Datta, 2017). ACEND has an online, self-guided preceptor training for eight hours of CEUs that RD/RDNs can complete for free. The training materials are housed on a learning management platform and consist of downloadable PDFs, activities, self-assessment tools, case-based scenarios, and resources. The seven training modules cover the following topics, preparing for the role of a preceptor, planning for student learning, facilitating student learning, assessing student learning, communicating effectively, managing time, and keeping current (EatRightPro, 2021). ACEND's preceptor training has online quizzes

incorporated throughout the seven modules that must be passed with a minimum score of 85% to receive the training CEU certificate. Participants download and print CEU certificates at the successful competition of the training (EatRightPro, 2021).

In addition to the ACEND preceptor training, NDEP provides additional preceptor training materials and resources through the NDEP website, member portal, and listserv (NDEP, 2022). NDEP preceptor training materials include a preceptor orientation checklist, which aids the preceptor in orienting the intern to the preceptor's worksite, including policies, tours, and rotation requirements (NDEP, 2022). A two-part pre-recorded webinar titled *Guide to Being an Effective Preceptor* is available to view. Preceptors can also earn an additional two hours of CEUs after completing the webinar series (NDEP, 2022). NDEP members can access additional resources and training materials on the member portal and listserv shared by other DI programs. These materials consist of training videos, PowerPoint slides, and preceptor handbooks (NDEP, 2022). Upon an exhaustive review of all shared resources and materials in the NDEP member portal and listserv, there was a lack of consistency in training requirements, topics, and methods. Consistent with findings in the literature, often, the DI programs referred preceptors to complete the ACEND preceptor training, and the resources and training provided by the DI programs consisted of orientation to the program itself and required competencies (Nasser et al., 2014; Winham et al., 2014; Yonge et al., 2008).

Individual dietetic internship programs can utilize the ACEND preceptor training program for their programs preceptors or develop their training program if desired. Requirements for preceptor training are program-specific and are not mandated by AND. Accreditation Standards for Nutrition and Dietetic Internship Programs (2022) only require preceptors to be appropriately licensed, credentialed, and qualified to ensure the program's curriculum and goals are implemented. AND does not have a minimum required number of years' experience as an RD/RDN to serve as a preceptor (ACEND, 2021a).

Preceptors must be oriented to the internship program's mission, goals, and objectives, ACEND Standards, and the required knowledge and competencies. The only specific skills that preceptors are required to be trained on include strategies related to biases in self and others and reducing instances of microaggressions and discrimination (ACEND, 2021a).

The 2022 Accreditation Standards for Dietetic Internships require program faculty and preceptors to complete periodic reviews on program evaluation and input from interns regarding the effectiveness in their respective roles (ACEND, 2021a). Accreditation Standards require that preceptors receive training as needed, based on evaluations. AND does not have a minimum requirement for the frequency of preceptor evaluations or training (ACEND, 2021a).

COVID-19

In late 2019, the World Health Organization (WHO) received several cases of pneumonia of an unknown etiology detected in Wuhan, Hubei Province in China (CDC, 2022). In January 2020, the Centers for Disease Control and Prevention (CDC) identified and isolated a novel coronavirus as the causative agent for the outbreak named SARS-CoV-2, known as COVID-19 (CDC, 2021). The virus was highly contagious and quickly spread worldwide, resulting in the WHO declaring a global pandemic on March 11, 2020 (CDC, 2022). In late March 2020, states in the United States began issuing "Stay-at-Home" or "Lockdown" orders (AJMC, 2021). Also, in March of 2020, the Center for Medicare and Medicaid Services (CMS) expanded its guidelines to allow telehealth to be used during the COVID-19 pandemic as a means to protect older, more vulnerable patients from potential exposure (AJMC, 2021).

The COVID-19 pandemic resulted in numerous challenges for students and interns in various healthcare fields, as hospitals and clinical sites were not allowing interns on-site for internship rotations, and direct patient contact was dramatically reduced across all disciplines of healthcare education

(Cummings et al., 2020; Ostrov, 2020). Many medical facilities temporarily discontinued on-site clinical and community internship rotations to protect students and patients from getting sick while reserving personal protective equipment that may have been in short supply (Cummings et al., 2020; Ostrov, 2020). As the pandemic continued, medical facilities were able to shift to online, virtual, and telehealth or telemedicine to allow students and interns learning opportunities to meet the required educational standards (Cummings et al., 2020; Theoret & Ming, 2020).

Summary

The field of dietetics has a long-standing history of having a "hands-on" approach to education and training, with clinical training being an integral component and utilizing preceptors to teach students. Preceptors are practitioners that supplement the academic training students receive in a didactic setting. While preceptors' roles will vary based on the concentration area in which they work, their role remains consistent as a teacher, supervisor, and role model for future dietitians (Bengtsson & Carlson, 2015; Taylor et al., 2010; Walker & Grosjean, 2010). The number of accredited internship sites has remained stagnant for decades, with the average acceptance rate into an accredited internship program ranging between 49%-73% since the early 1990s (ACEND, 2021b). The internship application and acceptance process are complicated and highly competitive. Due to the disproportionate graduation numbers, internship programs have large pools of applicants and can select the most qualified candidates (AbuSabha et al., 2018). These findings show a need for more preceptors to help increase the ability of internship programs to place more interns.

Research has identified barriers and limitations to serving as a preceptor and their training and educational needs. The literature shows that practicing RD/RDNs who serve as preceptors report a lack of time, decreased productivity, compensation, support, and resources as major barriers to serving as a preceptor (Morgan et al., 2018; Winham et al., 2014). Other barriers indicated include increased

workload and lack of knowledge and proper training on how to become a preceptor (AbuSabha et al., 2018; Brekken et al., 2021; Kruzich et al., 2003; Morgan et al., 2018; Winham et al., 2014; Wooden, 2012). There is limited research on the content and delivery methods available for preceptor education and the training's ability to improve a preceptor's level of self-efficacy in fulfilling the role of a preceptor. However, no known research to date has examined the effectiveness of the ACEND preceptor training course at improving the self-efficacy of RD/RDN's about the specific skills and knowledge necessary for serving as an effective preceptor. The purpose of this study is to explore the relationship between an RD/RDN's level of self-efficacy to competently serve as a preceptor and the amount and type of preceptor training.

Chapter 3- Methodology

Preceptors are practitioners that supplement the academic training students receive in a didactic setting. A preceptor's role will vary based on the concentration area they work in; however, their role remains consistent as a teacher, supervisor, and role model for future dietitians (Bengtsson & Carlson, 2015; Taylor et al., 2010; Walker & Grosjean, 2010). Most health professions, such as nursing, occupational therapy, physical therapy, and pharmacy, utilize preceptors to provide instruction and management of students in the clinical setting. Preceptors have identified that their lack of training to serve in the preceptor role is a major barrier to their effectiveness. Among preceptors, the most commonly reported training needs are a lack of knowledge and self-confidence in their ability to complete evaluations, provide feedback, and time management (Bengtsson & Carlson, 2015; Nasser et al., 2014; Sarcona et al., 2015; Taylor et al., 2010; Winham et al., 2014).

According to the 2017 NDEP Preceptor Survey, 61.4% of current preceptors either have not completed any preceptor training or were unaware of available preceptor training programs. A lack of training on internship expectations and preceptor duties is a commonly reported reason for RD/RDNs not to serve as a preceptor (Datta, 2017; Hutchins et al., 2021). Individual dietetic internship programs can utilize the free online ACEND preceptor training program for their programs preceptors or develop their training program if desired. Requirements for preceptor training are program-specific and are not mandated by AND. The lack of standardized preceptor training has created a lack of consistency in the level of training among preceptors (Datta, 2017).

Problem of Practice Statement

A substantial amount of research has identified the barriers and limitations to serving as a preceptor and those specific training and educational needs. However, there is limited research on how

effective these preceptor training programs are in improving the self-efficacy of RD/RDN's skills and knowledge for serving as a preceptor.

The purpose of this study was to explore the relationship between an RD/RDN's level of self-efficacy to competently serve as a preceptor and their level of prior preceptor training. This study will add to the current research regarding how preceptor training relates to an RD/RDN's level of self-efficacy by addressing the following research questions:

Research Question 1-

What is the mean overall self-efficacy score of RD/RDNs about serving as a preceptor for dietetic interns?

Research Question 2-

Is there a difference in an RD/RDN's level of self-efficacy to perform the required skills and tasks of a dietetic preceptor between RD/RDNs who have or have not completed the Accreditation Council for Education in Nutrition and Dietetics (ACEND) preceptor training course?

Research Question 3-

Is there a difference in an RD/RDN's level of self-efficacy to perform the required skills and tasks of a dietetic preceptor between RD/RDNs who have completed 1) ACEND training or 2) other preceptor training?

Research Question 4-

Is there a difference in an RD/RDN's level of self-efficacy to perform the communication skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training, 2) no training?

Research Question 5-

Is there a difference in an RD/RDN's level of self-efficacy to perform the management skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training, 2) no training?

Research Question 6-

Is there a difference in an RD/RDN's level of self-efficacy to perform the teaching/mentoring skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training, 2) no training?

Research Question 7-

Do years of experience as a preceptor, previous type of preceptor training, age, level of formal education, and place or type of employment predict an RD/RDN's level of overall self-efficacy as a preceptor?

Research Design

Causal-comparative research design is nonexperimental and studies the relationship between variables after an action or event has already occurred (Causal-Comparative Design, 2010). The relationship between the variables is a suggested relationship, as the research is retrospective, and the researcher does not have control over the independent variable (Causal-Comparative Design, 2010). This research determined if the independent variable of the training was correlated to the dependent variable of self-efficacy. Additionally, a causal-comparative research design was used to explore the relationship between an RD/RDN's level of self-efficacy to competently serve as a preceptor and the amount and type of preceptor training. A causal-comparative design was appropriate for this study due to the data being collected was retrospective, involved group comparisons, and investigated cause-effect.

Instrumentation

A 21-point Preceptor Self-Efficacy Questionnaire was initially developed by Parsons (2006) to measure community preceptors' confidence in advising and facilitating student learning. Content validity and reliability tests were conducted on this original questionnaire in a pilot study by Parsons (2006),

with a Cronbach's alpha score of 0.93. Permission was granted to modify the previously developed survey instrument, *Improving Preceptor Self-Efficacy and Role Knowledge Using an On-Line Education Program,* by the original researcher, Rachelle Larsen (Parsons, 2006) (Appendix E).

Instrument Revision

Modifications were completed to the original *Preceptor Self-Efficacy Questionnaire* to reflect the parameters of the current research study. Changes in terminology were made from *nursing* to *dietetics*, along with other wording changes to reflect the rotations and environment of a dietetic internship more accurately versus an undergraduate nursing program. In addition, three items were removed that did not apply to the current research. For this research study, the Likert Scale on the questionnaire was adjusted from a 4-point to a 5-point scale. The Likert Scale was increased to a 5-point scale to allow for a neutral option. A neutral option allows subjects to answer questions how they naturally would in real life (Ary et al., 2019). The revised Likert Scale is as follows; 1, Completely lacking in confidence 2, Somewhat lacking in confidence 3, Neutral 4, Somewhat confident and 5, Very confident. Table of the complete list of changes (Appendix F).

The initial questionnaire revision contained two parts. The first part consists of an eleven-question demographic section (Appendix G) that assesses participants' age, the highest level of education, years as an RD/RDN, current practice area, history of serving as a preceptor, prior preceptor training, and ranking most valuable topics taught in preceptor training. The second part of the questionnaire comprised of participants ranking confidence levels in their ability to perform 18 tasks or skills related to precepting and the preceptor role (Appendix H). The 18 tasks or skills have been divided into three constructs based on underlying themes. A construct provides an efficient technique for labeling similar behaviors, skills, or tasks. Having several questions addressing a single construct can allow the researcher multiple responses to measure a single entity, which can sometimes be an abstract

concept, such as "self-efficacy." The three constructs identified in the *Preceptor Self-Efficacy Questionnaire* include communication skills, management skills, and teaching and mentoring skills. Table 11 identifies the construct with each question that the *Preceptor Self-Efficacy Questionnaire* aligns with (Appendix I).

Content validity and reliability testing were completed on the revised questionnaire. Content validity is a subjective technique to examine how well a set of items measures the complexity of a concept or topic (Nardi, 2018). To test the revised questionnaire for content validity, a Content Evaluation Panel, consisting of seven experts in healthcare education, primarily disciplines that use preceptors in the community to educate students and interns, was formed. It is recommended to have a panel consisting of five to ten experts (Gilbert & Prion, 2016). Each member on the panel was provided the *Preceptor Self-Efficacy Questionnaire* and, independent of the other panelists, assessed each of the 18 items and ranked each item as "essential," “useful but not essential,” or “not necessary.” Responses from all panelists were collected, and the “essential” items were determined. The content validity ratio (CVR) for each item on the questionnaire was computed using Lawshe’s formula (Gilbert & Prion, 2016). The CVR is a numeric value that indicates the item on the questionnaire’s validity based on the expert’s rating (Wilson et al., 2012).

Lawshe’s method:

$$CVR = \frac{n_e - \frac{N}{2}}{\frac{N}{2}}$$

Where: n_e is the number of panelists identifying an item as an “essential” and

N is the total number of panelists (N/2 is half the total number of panelists).

A CVR was calculated for each item reviewed by the panelists. If all panelists score an item as "essential," then the CVR is 1.00. If none of the panelists score an item as "essential," that item will have a CRV score of 0. If the item scores higher than 50% of the panelists perceive the item as "essential," then it will be considered to have some degree of validity (Gilbert & Prion, 2016). Items scoring a CRV less than 0.66 will be reworked or considered for elimination. If all panelists agree that an item on the questionnaire is considered "essential" or "not necessary," that will be a consensus to include or delete the item. The content validity for the instrument (CVI) is the mean CVR for all the items that will be included in the final questionnaire (DeVon et al., 2007). It is more efficient to report the CVI of a questionnaire as opposed to the CVR of individual questionnaire items retained; therefore, researchers have established a threshold for a preferred CVI of 0.8 or higher (Davis, 1992).

The CVR was calculated for each of the 18 items on the questionnaire. Five items received CVR scores less than 0.66 and were removed from the questionnaire, resulting in 13 remaining items. The 13-item final *Preceptor Self-Efficacy Questionnaire* (Appendix J) has a high level of content validity based on the CVI of 0.82.

Reliability testing is conducted to ensure consistency among results when repeatedly administering the questionnaire to different subjects (Nardi, 2018). The design of this research study was for a single-point data collection, making test-retest reliability not an appropriate method for testing reliability. Reliability testing was conducted using the same members of the Content Evaluation Panel. After validity testing was completed, the panelists were contacted a second time to complete the finalized survey for reliability testing. Statistical analysis was conducted using SPSS to determine Cronbach's alpha to assess internal consistency, a measure of reliability (Nardi, 2018). The *Preceptor Self-Efficacy Questionnaire* had a high level of internal consistency, as determined by a Cronbach's alpha

of 0.966. Cronbach's alpha is an appropriate measure for this instrument, as it is commonly used to measure multiple items on a Likert scale to determine if the scale is reliable (Bland & Altman, 1997).

Research Procedures

Participants

The sample population consisted of RD/RDN's who currently serve or have ever served as a preceptor. All participants were over the age of eighteen, consisted primarily of females, and came from a variety of ethnic backgrounds. This population was considered a purposive sample because they were recruited through the national Nutrition and Dietetic Educators and Preceptors (NDEP) listserv. A listserv is an electronic mailing list manager that allows members of a group to email other members. A listserv is maintained and managed by administrators and group members (Rolls et al., 2016). Purposive samples are when the researcher selects the sample based on the knowledge the participants already have about the study topic (Nardi, 2018). Everyone that is a member of NDEP is either a current or previous preceptor or is involved with a dietetic internship in some capacity, whether it be a dietetics program director or faculty member. The 2021 active membership for NDEP is listed at 1,565 members (NDEP, n.d.). Using the Creative Research Systems (2012) survey sample size calculator with a 95% confidence level, a confidence interval of 4, and a population of 1,565, an estimated 434 responses are needed to achieve results that are representative of the target population. Expanding the confidence interval to 5 resulted in a projected sample of 309 participants.

NDEP members were recruited through an email sent over the listserv describing the research project, along with instructions on how to access and complete the survey in Qualtrics, a web-based survey tool. NDEP members were asked to assist with a snowball sampling. Snowball sampling is a procedure where the initially selected subjects are asked to suggest the names of other appropriate

subjects to help increase the sample size or to increase the sample size of hard-to-reach populations (Ary et al., 2019). Internship directors and coordinators that are members of NDEP were asked to forward the email with the questionnaire link to their internship programs preceptors, that may or may not be members of the NDEP practice group to complete the questionnaire (Appendix L). The snowball sampling was required to gain additional preceptors, as not all preceptors are members of NDEP, and there is no complete listing of preceptors in the United States. Low NDEP membership rates among preceptors are seen in the results of the 2017 NDEP Preceptor Survey, developed and distributed by NDEP. Of the 2,101 preceptors that responded to the survey, only 12% were members of NDEP (Datta, 2017).

The informed consent letter (Appendix N) was the first item participants saw when opening the Qualtrics link. The informed consent instructed that participation is voluntary, and participants can stop the questionnaire at any time by closing out of the browser. Once a participant accepted the informed consent, they were advanced on to the questionnaire. The only exclusion criteria were non-RD/RDNs or RD/RDNs that have never served as a preceptor.

Data Collection

Data collection began after IRB approval was received. This researcher was required to submit the proposed survey and the IRB approval to the NDEP Council for review and approval. An initial email request was sent to the NDEP Council on June 1, 2021, requesting information regarding the policies and procedures for NDEP's approval process. The NDEP Council responded the same day with the policy and procedure manual. The NDEP Council required this researcher to submit the proposed survey to the NDEP Council for review along with the key points of the study and provide the estimated length of time for the participants to complete the survey. NDEP also required the following consent language "NDEP Council has approved posting this study to NDEP listserv" either in the original Informed Consent letter

before the IRB approval or placed on the email sent to the NDEP listserv. NDEP stated they require a four-to-six-week review process for approval of any survey or research project request. The NDEP Council approved the survey and research project request within 24 hours of requesting approval. Data collection was able to begin ahead of schedule and started on January 13, 2022.

NDEP members were recruited through an email sent over the listserv describing the research project, along with instructions on how to access and complete the survey in Qualtrics. NDEP members were asked to assist with a snowball sampling. Internship directors and coordinators that are members of NDEP were asked to forward the email with the questionnaire link to their internship programs preceptors, who may or may not be members of the NDEP practice group, to complete the questionnaire.

Participants only completed the survey one time. The surveys were administered using Qualtrics and remained open for three weeks, with reminder emails sent through the NDEP listserv on days 8 and 15, with the survey set to close on day 22 (Appendix M). At the end of the initial three weeks, 68 participants had completed the survey. The researcher requested approval from IRB to extend the time frame to collect data an additional two weeks, and to add the recruitment of participants through the social media platforms, Facebook and Twitter, using a pre-developed post (Appendix K), to obtain a larger number of participants. The recruitment post included the Qualtrics survey link and the researcher's contact information. The post was shared and tagged with various dietetics social media groups whose membership consisted of dietitians that may have served as dietetic preceptors. Additional participants were recruited through an email sent to the Indiana Academy of Nutrition and Dietetics (IAND) membership through the Executive Director. IAND membership includes more than 1200 dietetic professionals that may have served as dietetic preceptors. The same recruitment email

was used for IAND members as was used in the NDEP listserv in the original IRB application. Amendments to the IRB package were approved on February 7, 2022 (Appendix B).

No identifiable information was linked to the survey responses, completed surveys were assigned a number, and only aggregate data was reported. Data collected from the survey was stored on a password-protected laptop in password-protected files or a password-protected flash drive in a locked file cabinet in the principal investigator's office. Data will be stored for at least three years or until all available uses for this study data have been completed.

Data Analysis

Descriptive statistics were calculated using SPSS for responses to the Preceptor Demographic Questionnaire. Statistical analysis was completed for each of the following research questions.

Research Question 1- What is the mean overall self-efficacy score of RD/RDNs about serving as a preceptor for dietetic interns? Basic descriptive statistics were computed, and the mean score for the entire 13-item Preceptor Self-Efficacy Questionnaire was calculated to identify an overall mean self-efficacy score.

Research Question 2- Is there a difference in an RD/RDN's level of self-efficacy to perform the required skills and tasks of a dietetic preceptor between RD/RDNs who have or have not completed the Accreditation Council for Education in Nutrition and Dietetics (ACEND)preceptor training course? An independent samples *t*-test was conducted to test if there was a statistically significant difference between the dependent variable, self-efficacy, and the independent variable, whether the RD/RDNs have completed the preceptor training course.

Research Question 3- Is there a difference in an RD/RDN's level of self-efficacy to perform the required skills and tasks of a dietetic preceptor between RD/RDNs that have completed 1) ACEND training or 2)

other preceptor training? A one-way analysis of variance (ANOVA) test was used to test for statistical significance between the dependent variable, self-efficacy, and the three independent variables: no preceptor training, ACEND training, and other training.

Research Question 4- Is there a difference in an RD/RDN's level of self-efficacy to perform the communication skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training, 2) no training? An independent samples t-test was used to test for statistical significance between the dependent variable, communication skills, and the two independent variables: any preceptor training and no training.

Research Question 5- Is there a difference in an RD/RDN's level of self-efficacy to perform the management skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training, 2) no training? An independent samples t-test was used to test for statistical significance between the dependent variable, management skills, and the two independent variables: any preceptor training and no training.

Research Question 6- Is there a difference in an RD/RDN's level of self-efficacy to perform the teaching/mentoring skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training, 2) no training? An independent samples t-test will be used to test for statistical significance between the dependent variable, teaching/mentoring skills, and the two independent variables: any preceptor training and no training.

1. For research questions 3-6 that had a one-way ANOVA test conducted, if statistical significance was found based on group size, either the Tukey post hoc test or Tukey-Kramer post hoc test was run.

Research Question 7- Do years of experience as a preceptor, previous type of preceptor training, age, level of formal education, and place or type of employment predict an RD/RDN's level of overall self-

efficacy as a preceptor? To analyze this research question, the overall mean self-efficacy score calculated in research question one using descriptive statistics were used, along with multiple linear regression. Multiple regression was used with one continuous dependent variable, overall self-efficacy, and multiple independent variables: years of experience as a preceptor, previous type of preceptor training, age, level of formal education, and place or type of employment. In multiple regression, the independent variables can be seen as the "predictors" of the outcome.

Assumptions

One assumption of this study is that the *Preceptor Self-Efficacy Questionnaire* measured the theoretical construct of self-efficacy in preceptor knowledge and that the questions fell under the three primary constructs of communication skills, management skills, and teaching and mentoring skills. Another assumption is that participants responded based on an accurate understanding and knowledge of the preceptor role. Lastly, it was assumed that the sample is representative of the population of dietetic preceptors.

Limitations

A limitation of this study design is using a purposive sample. Given the limitation of not having a complete listing of preceptors in the United States, the use of the NDEP listserv, IAND membership roster, social media, and snowball sampling to increase the number of preceptor participation appears to be the optimal sampling choice. Another potential limitation is that the data was collected at a single point in time that is unrelated to their potential preceptor training. Some participants may have recently completed preceptor training, while others may have completed preceptor training years ago. There are limitations associated with survey research in general. There is the risk that subjects may not have

responded honestly, remembered information accurately, or misinterpreted the meaning of a question (Nardi, 2018). Non-response bias is a type of limitation that can occur with surveys where people are unwilling or unable to respond to a survey. This reasoning may make them differ greatly from the participants that do complete the survey. Non-response bias could result in skewed results (Nardi, 2018). Efforts were taken to lessen the likelihood of non-response bias by keeping the survey length as short as possible, using easy-to-navigate survey software, and providing email reminders to complete the survey. The use of an online survey also limits participation to individuals with access to a computer or smartphone and the internet.

The scope of this research study looked at the future of how dietetic preceptors are trained. If preceptors have more effective training and education before becoming preceptors, they will ideally have higher levels of self-efficacy in their knowledge and abilities to perform the tasks related to precepting.

Chapter 4- Findings

The purpose of this study is to explore the relationship between registered dietitians' (RD/RDN's) level of self-efficacy to competently serve as a preceptor and the amount and type of preceptor training completed. This chapter will describe the findings of the study.

Research Questions

Research Question 1- What is the mean overall self-efficacy score of RD/RDNs about serving as a preceptor for dietetic interns?

Research Question 2- Is there a difference in an RD/RDN's level of self-efficacy to perform the required skills and tasks of a dietetic preceptor between RD/RDNs who have or have not completed the Accreditation Council for Education in Nutrition and Dietetics (ACEND) preceptor training course?

Research Question 3- Is there a difference in an RD/RDN's level of self-efficacy to perform the required skills and tasks of a dietetic preceptor between RD/RDNs who have completed 1) ACEND training or 2) other preceptor training?

Research Question 4- Is there a difference in an RD/RDN's level of self-efficacy to perform the communication skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training and 2) no training?

Research Question 5- Is there a difference in an RD/RDN's level of self-efficacy to perform the management skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training and 2) no training?

Research Question 6- Is there a difference in an RD/RDN's level of self-efficacy to perform the teaching/mentoring skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training and 2) no training?

Research Question 7- Do years of experience as a preceptor, previous type of preceptor training, age, level of formal education, and place or type of employment predict an RD/RDN's level of overall self-efficacy as a preceptor?

Sample Description

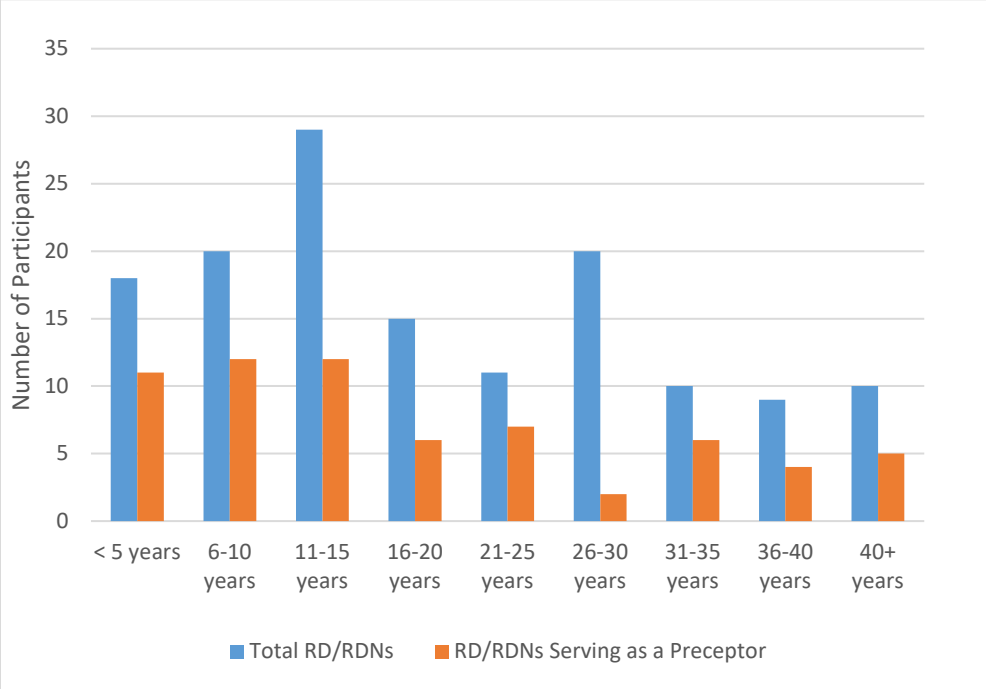
Initially, 176 survey responses were obtained. After the partial and incomplete surveys were eliminated, the final sample size consisted of 145 participants, resulting in a confidence interval of 7.75. The demographic questionnaire (Appendix G) included questions regarding age, education level, geographic location, years as an RD/RDN, their current area of practice, whether participants were currently serving as a dietetic preceptor, whether they have completed preceptor training, and the type of training, how long they have served as a preceptor and if they are a member of NDEP. The study participants' years of experience as an RD/RDN and comparison to whether they served as a preceptor are illustrated in Figure 1. The demographic characteristics of the survey respondents are presented in Table 2.

Participant ages ranged from 24 to 69, with the mean age being 44 (*SD* = 12.5). The majority of participants' highest level of education completed was a master's degree (58%; *n* = 84), followed by a bachelor's degree (32%; *n* = 46), and a Doctoral degree (10%; *n = 15)*. Survey participants resided in all four regions of the United States; one participant resided outside the United States. The largest survey response rate came from the Midwest region (50%). The reported years of experience as an RD/RDN ranged from 1 to 60 years (*SD* = 12.7). The two highest reported areas of practice by participants as clinical nutrition (43%, *n* = 62) and academia (20%, *n* = 29). Of the 145 participants, 47% (*n* = 68) were currently serving as a preceptor, with 87.5% (*n* = 127) reported having ever served as a preceptor, and 39.4% (*n* = 50) having precepted ten years or longer. Figure 1 shows the comparison of the study

participants' years of experience as an RD/RDN and the number of participants currently serving as a preceptor. Of the study participants, only 31% (*n* = 45) reported being a member of Nutrition and Dietetic Educators and Preceptors (NDEP).

Figure 1

Years of Experience as RD/RDN and Comparison to Serving as a Preceptor



Note. N = 145.

Table 2

Demographic Characteristics of Survey Participants

Characteristic	*n*	%
Geographic location region		
Midwest	73	50.3
West	35	24.1
South	30	20.7
Northeast	6	4.2
International	1	0.7
Years of experience as RD/RDN*		
<5 years	18	12.5
6-10 years	20	14
11-15 years	29	20.5
16-20 years	15	10.5
21-25 years	11	8
26-30 years	20	14
31-35 years	10	7
36+ years	19	13.5
Current practice area		
Clinical	62	42.8
Academia	29	20
Management	18	12.4
Community	10	6.9
Food Service	8	5.5
Other**	8	5.5
Research	4	2.8
Sports Nutrition	3	2.1
Wellness	3	2.1
Years serving as a preceptor***		
< 1 year	10	7.9
1-3 years	25	19.7
4-6 years	24	18.9
7-9 years	18	14.1
10+ years	50	39.4
NDEP member		
Yes	45	31
No	100	69

Note. N = 145. *Three participants did not respond. **Other responses included Retired, Not practicing, and Retail/Industry.

****n* = 127. Reflects participants that have ever served as a preceptor.

Of those who reported "not currently serving as a preceptor," 39% (*n*= 34) reported *not being asked to serve as a preceptor* as the main reason for not precepting, 9% (*n*= 8) reported *COVID-19-related i*ssues, and 8% (*n*= 7) stated, *not having adequate time.* The write-in option for *Other* on reasons why not currently precepting revealed a variety of reasons for not precepting, including retired or not currently practicing, maternity leave, taking a temporary break from precepting due to other professional obligations, high amounts of travel with their current position, and their current job was not able to provide sufficient learning activities for interns. Table 3 illustrates the reported reasons why RD/RDNs were not currently serving as a preceptor.

Table 3

Reasons for Not Currently Serving as a Preceptor

	n	%
Other	35	39.8
Was not asked to serve.	34	38.6
COVID-19-related issues.	8	9.0
Did not have adequate time.	7	8.0
Did not have adequate resources.	3	3.4
Employer did not support.	1	1.1
Did not feel adequately trained.	0	0

Note. n = 88.

Regarding the types of preceptor training completed by participants, 41% (*n* = 59) completed the ACEND preceptor training, and 20% (*n* = 29) reported completing some other form of preceptor training, consisting of training provided by an internship program or through a hospital or university. Collectively, of the 145 survey participants, 52% (*n* = 75) completed some form of preceptor training. Table 4 illustrates the breakdown of the type of preceptor training completed.

Table 4

Type of Preceptor Training Completed

Training	Yes		No	
	n	%	*n*	%
ACEND	59	41	86	59
Other	29	20	116	80
Any*	75	52	70	48

Note. N = 145.
*Reflects the number of RD/RDNs that completed any type of preceptor training (ACEND and/or *Other*).

Participants who completed other preceptor training through an internship program, hospital, or university, stated the format that the training was provided consisted of 55% (*n* = 16) online and 45% (*n* = 13) in-person. In comparison to the 8-hour ACEND program (EatRightPro, 2021), *Other* preceptor training programs ranged between one and ten hours in length. The highest response, 34.5% (*n* = 10), stated the preceptor training was an hour or less. Responses to the length of other training programs are shown in Table 5.

Table 5

Length of Other Preceptor Training

	n	%
1 hour or less	10	34.5
2 hours	6	20.8
3 hours	4	13.8
4 hours	4	13.8
5 hours	1	3.4
6 hours	0	0
7 hours	0	0
8 hours	1	3.4
9 hours	0	0
10 hours	3	10.3

Note. n = 29. *Other* preceptor training offered through internships, universities, or hospitals.

Participants were asked to rank the ACEND preceptor training course using a Likert scale ranging from *Not effective at all,* to *Extremely effective*, on how well the training prepared them to serve as a preceptor. Of the participants that completed the ACEND preceptor training course, the majority (40.5%, *n* =23) felt that the training was moderately effective at preparing them to serve as a preceptor. Table 6 illustrates the participant's responses to the overall effectiveness of the ACEND preceptor training course.

Table 6

ACEND Preceptor Training Effectiveness

	N	%
Not effective at all	2	3.5
Slightly effective	12	21.0
Moderately effective	23	40.5
Very effective	17	29.8
Extremely effective	3	5.2
Total*	57	100

*Two participants that completed the ACEND preceptor training course did not rank the effectiveness of the training.

As shown in Table 7, participants who completed any form of preceptor training were asked to select any/all the training topics from a list provided that improved their confidence in serving as a preceptor. Frequency distributions illustrate that *Preceptor roles and responsibilities,* and *Evaluation of students,* consistently ranked as the two training topics that improved confidence the most (ACEND training 21.4%, 18.6%, and *Other* training 19.1%, 16.2 %, respectively). Participants that completed the ACEND's preceptor training also selected *Managing student objectives/expectations* (18.6%), *Teaching strategies* (14.5%), and *Learning styles* (13.8%) as the next highest training topics for improving confidence. Participants who completed *Other* preceptor training courses selected *Rotation activities*

(14.1%), *Managing student objectives/expectations* (10.1%), and *Communication strategies* (10.1%) as their next highest training topics. ACEND's preceptor training participants scored skills related to evaluation and teaching and learning styles the highest at improving their confidence in serving as a preceptor. The *Other* training programs' participants scored skills related to evaluation, rotation activities, and communication as the highest at improving their confidence in serving as a preceptor.

Table 7

Preceptor Training Topics That Improved Self-efficacy the Most

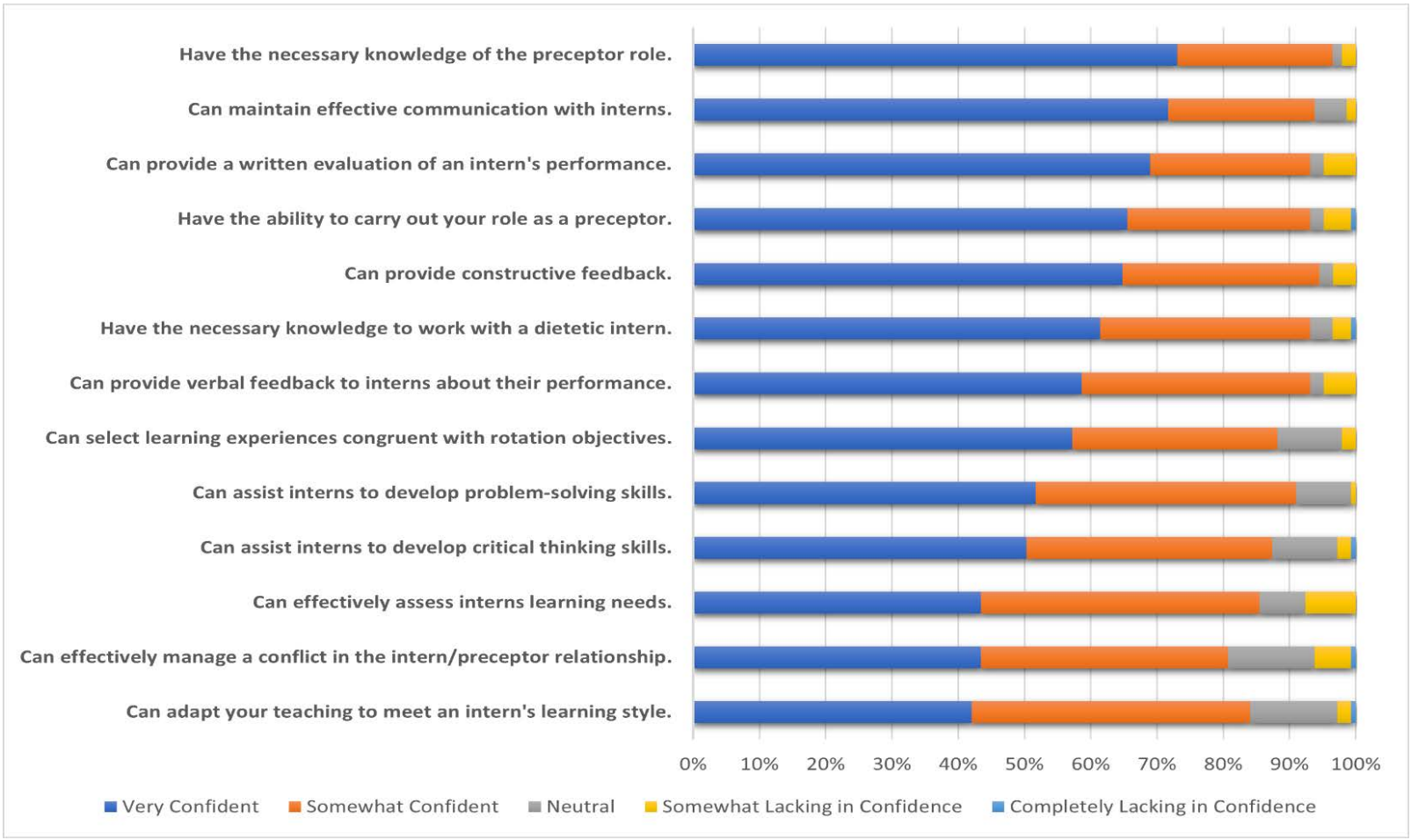
Topic	ACEND		*Other*	
	n	%	*n*	%
Preceptor roles and responsibilities	31	21.4	19	19.1
Evaluation of students	27	18.6	16	16.2
Managing student objectives/expectations	27	18.6	10	10.1
Teaching strategies	21	14.5	7	7.1
Learning styles	20	13.8	8	8.1
Communication strategies	16	11	10	10.1
Rotation activities	16	11	14	14.1
Time management	12	8.3	5	5.1
Conflict management	7	4.8	3	3
Cultural competency	2	1.4	4	4
Other*	1	0.7	3	3

Note. N = 145. Survey participants could select as many topics as needed.
*Other topics not provided by participants.

Participants completed a 13-item, Likert-type scale self-efficacy questionnaire as part of the study survey. Participants rated their level of confidence to perform various skills and tasks associated with being a preceptor. The 13 items align into three constructs, communication skills, management skills, and teaching and mentoring skills (Appendix I). Figure 2 illustrates how participants responded collectively to each of the 13 items on a 5-point Likert scale. Participants ranked their confidence levels more favorably for communication skills than for management and teaching and mentoring skills.

Figure 2

Description of Self-efficacy Questionnaire Responses



Analysis of Research Questions

Research Question 1- What is the mean overall self-efficacy score of RD/RDNs about serving as a preceptor for dietetic interns?

The mean self-efficacy score was calculated for each participant by calculating the mean score for all 13 items using a 5-point Likert scale on the self-efficacy questionnaire. The Likert Scale was scored as follows; 1, Completely lacking in confidence 2, Somewhat lacking in confidence 3, Neutral 4, Somewhat confident and 5, Very confident. A new variable was then created to calculate the overall mean score for self-efficacy. Of the 145 participants, the overall mean score for self-efficacy was 4.44 (*SD* = 0.57). Based on the mean score, participants overall feel highly efficacious about serving as a dietetic preceptor.

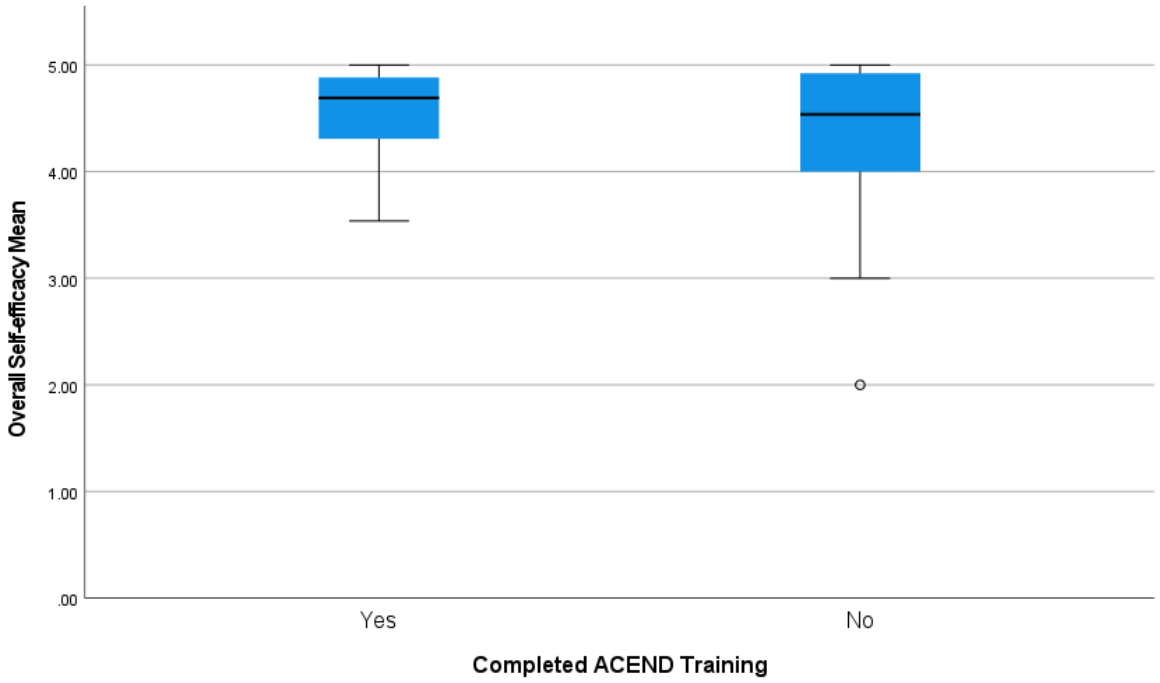
Research Question 2- Is there a difference in an RD/RDN's level of self-efficacy to perform the required skills and tasks of a dietetic preceptor between RD/RDNs who have or have not completed the Accreditation Council for Education in Nutrition and Dietetics (ACEND) preceptor training course?

Fifty-nine (41%) of the 145 participants completed the ACEND preceptor training. An independent-samples *t*-test was run to determine if there were differences in self-efficacy to perform the required skills and tasks of a dietetic preceptor between RD/RDNs who had or had not completed the ACEND preceptor training course. Potential self-efficacy scores ranged from 1 to 5. Figure 3 illustrates the distribution of data between the two groups and a single construct outlier. Individuals Results indicated the overall mean self-efficacy score was higher for individuals who completed the ACEND preceptor training (*M* = 4.56, *SD* = 0.42) than those who did not (*M* = 4.36, *SD* = 0.64). The mean self-efficacy score of participants who completed the ACEND training was 0.20 higher, 95% CI [0.03 to 0.38], than the self-efficacy score of participants who did not complete the ACEND training. These

results indicate completing the ACEND training was associated with statistically higher self-efficacy scores, $t(143) = 2.27$, $p = .025$. The calculated effect size was 0.36, which is considered a small to medium effect size according to Cohen.

Figure 3

Differences in RD/RDN Overall Self-efficacy Scores Based on Completion of ACEND Preceptor Training



Research Question 3- Is there a difference in an RD/RDN's level of self-efficacy to perform the required skills and tasks of a dietetic preceptor between RD/RDNs who have completed 1) ACEND training or 2) other preceptor training?

Forty-six (32%) of the 145 participants completed only the ACEND preceptor training, and 16 (11%) of the 145 only participated in *Other* preceptor training. Thirteen (9%) of participants completed

both types of training and were excluded from the analysis for research question three. An independent-samples *t*-test was run to determine if there were differences in self-efficacy to perform the required skills and tasks of a dietetic preceptor between RD/RDNs who had completed the ACEND preceptor training course compared to those that had completed *Other* preceptor training. The overall mean self-efficacy to perform the required skills and tasks of a dietetic preceptor increased from participants that completed *Other* training (n = 16, M = 4.41, SD = 0.82), to participants that completed the ACEND training (n = 46 M = 4.53, SD = 0.46*)*. These results indicate there was no statistical difference in how participants felt about performing the skills and tasks of a preceptor, based on the type of training they completed $t(60) = .712$, $p = .48$. The calculated effect size was 0.21, which is considered a small effect size according to Cohen.

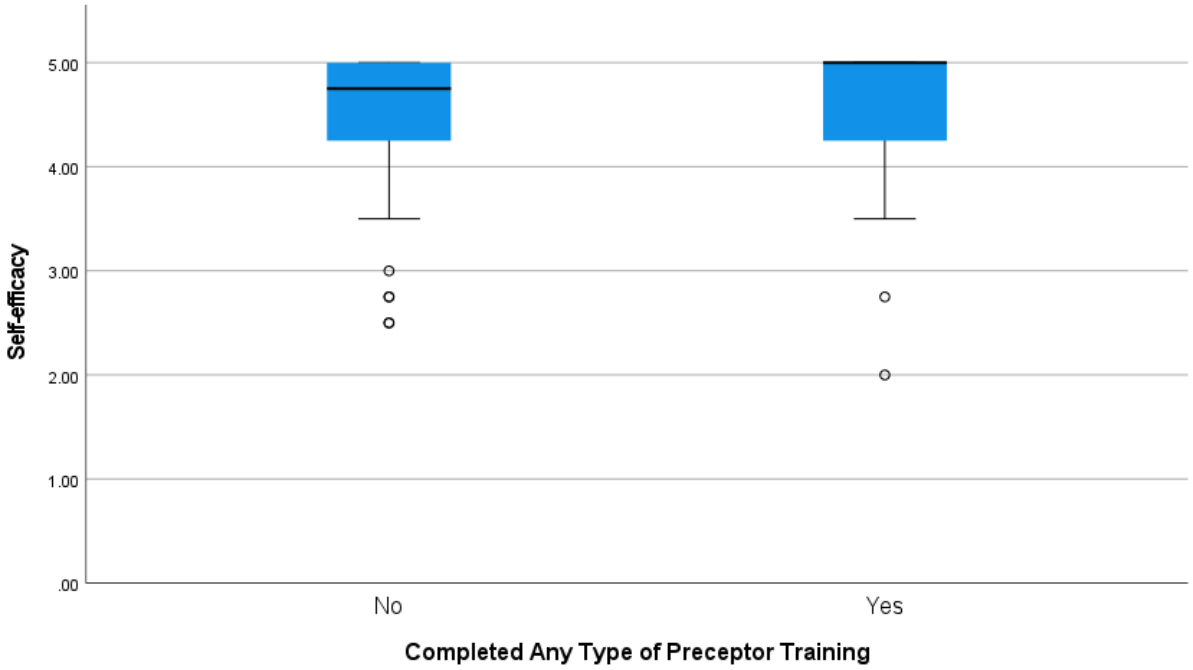
Research Question 4- Is there a difference in an RD/RDN's level of self-efficacy to perform the communication skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training and 2) no training?

Seventy-five of the 145 participants (52%) indicated they had completed any type of preceptor training and 70 participants (48%) had not. An independent-samples *t*-test was run to determine if there were differences in self-efficacy to perform the communication skills of a dietetic preceptor between RD/RDNs who have or have not completed any type of preceptor training course. Figure 4 illustrates the distribution of data between the two groups and the point outliers. Results indicated the mean self-efficacy score for communication skills for those who had and had not completed preceptor training were 4.65 (SD = 0.56) and 4.46 (SD = 0.67), respectively. There was no statistical difference in the mean communication self-efficacy score between participants who had and had not completed any type of

training, *t*(143) = 1.89, *p* = .061. The calculated effect size was 0.31, which is considered a small to medium effect size according to Cohen.

Figure 4

Comparison of Communication Skills Self-efficacy Scores Between Preceptor Training Groups



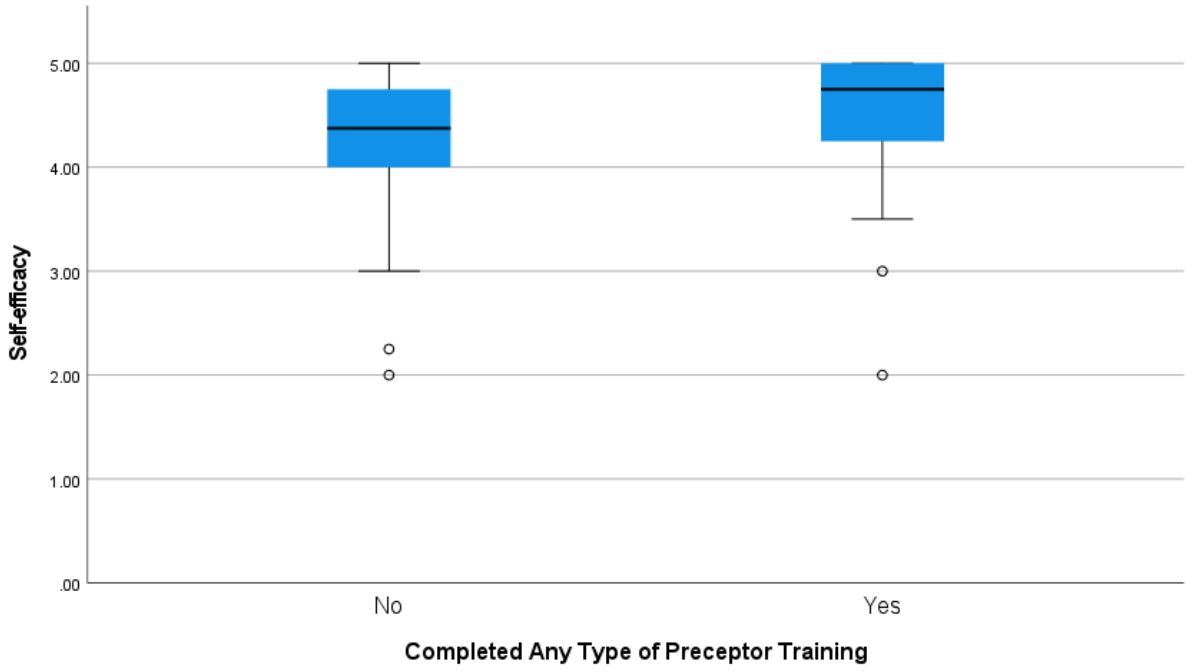
Research Question 5- Is there a difference in an RD/RDN's level of self-efficacy to perform the management skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training and 2) no training?

Seventy-five of the 145 participants (52%) completed any type of preceptor training. An independent samples *t*-test was run to determine if there were differences in self-efficacy to perform the management skills of a dietetic preceptor between RD/RDNs who have or have not completed any

type of preceptor training course. Figure 5 illustrates the distribution of data between the two groups and the point outliers. The mean self-efficacy score for management skills was higher for individuals that completed a preceptor training (*M* = 4.54, *SD* = 0.53) than those that did not (*M* = 4.26, *SD* = 0.70). These results indicate the mean self-efficacy score to perform management skills among participants who completed any type of preceptor training was 0.28, 95% CI [0.48 to 0.07], statistically higher than the score for participants who did not complete a preceptor training, *t*(143) = 2.66, *p* = .009. The calculated effect size was 0.45, which is considered a small to medium effect size according to Cohen.

Figure 5

Comparison of Management Skills Self-efficacy Scores Between Preceptor Training Groups

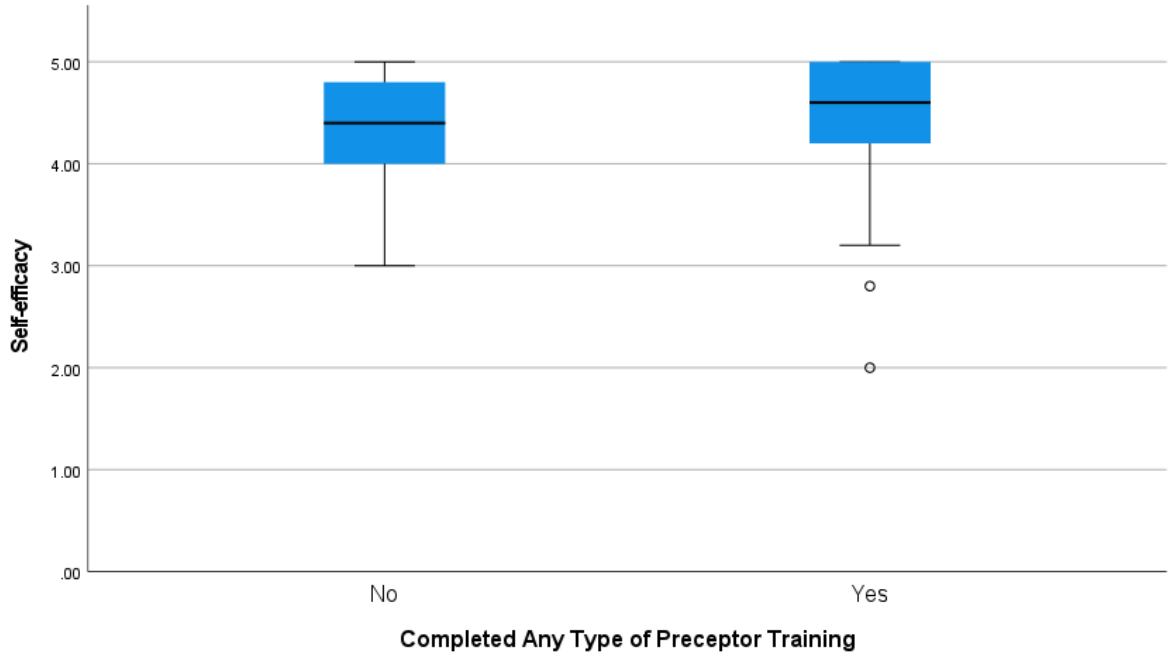


Research Question 6- Is there a difference in an RD/RDN's level of self-efficacy to perform the teaching/mentoring skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training, 2) no training?

Seventy-five (52%) of the 145 participants completed any type of preceptor training. An independent-samples *t*-test was run to determine if there were differences in self-efficacy to perform the teaching/mentoring skills of a dietetic preceptor between RD/RDNs who have or have not completed any type of preceptor training course. Figure 6 illustrates the distribution of data between the two groups and the point outliers. The mean self-efficacy score for teaching/mentoring skills was higher for individuals that completed a preceptor training (M = 4.42, SD = 0.60) than those that did not (M = 4.33, SD = 0.60). These results indicate the mean self-efficacy score to perform the teaching/mentoring skills among participants who completed any type of preceptor training was 0.09, 95% CI [-0.29 to 0.11], statistically higher than the score for participants who did not complete a preceptor training, $t(143) = 0.91$, $p = .37$. The calculated effect size was 0.15, which is considered a small effect size according to Cohen.

Figure 6

Comparison of Teaching/Mentoring Skills Self-efficacy Scores Between Preceptor Training Groups



Research Question 7- Do years of experience as a preceptor, previous type of preceptor training, age, level of formal education, and place or type of employment predict an RD/RDN's level of overall self-efficacy as a preceptor?

A multiple regression was run to understand the effect of place or type of employment on the overall level of self-efficacy of an RD/RDN to serve as a preceptor. The variable *place of employment* had an option for the participant to write in their place of employment if it did not align with a provided option. The majority of the written in places of employment aligned with one of the already provided categories and were reassigned accordingly (i.e., Dialysis clinic was recoded as Clinical). The remaining write-in places of employment were coded as “free text” and consisted of retired, industry, not

practicing, and retail. There was linearity as assessed by partial regression plots and a plot of studentized residuals against the predicted values. The assumption of normality was met, as assessed by a P-P Plot. The multiple regression model was not statistically significant at predicting overall self-efficacy, $F(8,136) = 1.73$, $p = .097$, adj. $R^2 = .04$. The only variable that added statistical significance to the prediction was clinical employment, $p = .014$. Regression coefficients and standard errors can be found in Table 8.

A second multiple regression equation was run to understand the effect of years of experience as a preceptor, previous type of preceptor training, age, and level of formal education, on the overall level of self-efficacy of an RD/RDN to serve as a preceptor. There was linearity as assessed by partial regression plots and a plot of studentized residuals against the predicted values. The assumption of normality was met, as assessed by a P-P Plot. The multiple regression model showed statistical significance in predicting overall self-efficacy, $F(4,128) = 5.60$, $p < .001$, adj. $R^2 = .122$. Two of the four variables added statistical significance to the prediction, preceptor age, $p = .004$, and the highest level of education completed, $p = .008$. Regression coefficients and standard errors can be found in Table 9. Based on the results of the multiple regressions, employment in a clinical setting, the preceptor's age, and the highest level of education completed was all able to predict a preceptor's level of self-efficacy statistically significantly.

Table 8

Multiple Regression Results for Place of Employment Prediction of Self-efficacy

Self-Efficacy	*B*	95% CI for *B*		*SE B*	β	R^2	ΔR^2
		LL	*UL*				
Model						0.092	0.039
Constant	4.631**	4.426	4.837	0.104			
Free Text	-0.41	-0.852	0.032	0.223	-0.165		
Wellness	-0.118	-0.789	0.552	0.339	-0.03		
Sport	-0.503	-1.174	0.168	0.339	-0.126		
Management	0.027	-0.305	0.359	0.168	0.016		
Research	-0.381	-0.971	0.209	0.298	-0.11		
Community	0.053	-0.352	0.459	0.205	0.024		
Food Service	-0.26	-0.701	0.182	0.223	-0.104		
Clinical	-0.314*	-0.563	-0.065	0.126	-0.273*		

Note. Model = "Enter" method in SPSS Statistics; *B* = unstandardized regression coefficient;
CI = confidence interval; *LL* = lower limit; *UL* = upper limit;
SE B = standard error of the coefficient; β = standardized coefficient;
R^2 = coefficient of determination; ΔR^2 = adjusted R^2.
*$p < .05$. **p <.001

Table 9

Multiple Regression Results for Descriptive Statistics Prediction of Self-efficacy

Self-Efficacy	*B*	95% CI for *B*		*SE B*	β	R^2	ΔR^2
		LL	*UL*				
Model	3.512	3.095	3.93	0.211		0.149	0.122
Years as RD/RDN	0	0	0.001	0	0.09		
Preceptor Training	0.12	-0.068	0.308	0.095	0.104		
Age	0.011*	0.004	0.019	0.004	0.242		
Highest Level Education	0.203*	0.053	0.353	0.076	0.221		

Note. Model = "Enter" method in SPSS Statistics; *B* = unstandardized regression coefficient;
CI = confidence interval; *LL* = lower limit; *UL* = upper limit;
SE B = standard error of the coefficient; β = standardized coefficient;
R^2 = coefficient of determination; ΔR^2 = adjusted R^2.
*$p< .05$. **p <.001

Chapter 5: Conclusions

The purpose of this study is to explore the relationship between registered dietitians' (RD/RDN's) level of self-efficacy to competently serve as a preceptor and the amount and type of preceptor training completed. Results of this study were utilized to provide evidence for the relationship between preceptor education and level of self-efficacy to serve as a dietetic preceptor and to determine the relationship of various individual demographic variables (years of experience as a preceptor, previous type of preceptor training, age, level of formal education, and place or type of employment) to overall self-efficacy scores for performing as a preceptor. Caution must be used in the interpretation of the data, as the optimal sample size was not achieved in this study. The following discussion focuses on the findings and data analyses related to each research question.

Summary of the Findings

The framework of this study was Albert Bandura's social cognitive theory (Bandura, 1977, 1986), which is centered around the beliefs an individual has about the skills they possess, as opposed to the skills themselves. The following sections detail a cumulative breakdown of the data gathered during this study. Quantitative data was gathered using an online questionnaire using Qualtrics. Quantitative data was collected through a demographic questionnaire and a 13-item *Preceptor Self-Efficacy Questionnaire.* The *Preceptor Self-Efficacy Questionnaire* utilized a 5-point Likert scale which consisted of 1, Completely lacking in confidence 2, Somewhat lacking in confidence 3, Neutral 4, Somewhat confident, and 5, Very confident.

Sample

Of the 145 study participants, all were RD/RDNs, and 68% were currently serving as dietetic preceptors, with 39.4% having over ten years of precepting experience. Nationally, the average age of a

dietitian is 43 years (Zippia, 2022), and the study participant's ages ranged from 24 to 69, with the mean age being 44 (*SD* = 12.5). Survey participants lived in all four regions of the United States (Midwest, Northeast, South, and West) and one international participant. All sectors of dietetic employment were represented. Overall, study participants were similar to the national statistics for dietetics professionals, except for the highest degree completed. Nationally, 70% of RD/RDNs have a bachelor's degree, 22% have a master's, 5% have a doctorate, and 3% reported: an "*other degree"* (Zippia, 2022). This study's population overall had a higher level of education, with 58% having a master's, 32% a bachelor's, and 10% with a Doctoral degree. This section discusses the demographic characteristics of the study participants and potential implications related to serving as a preceptor and participating in preceptor training.

Demographic Factors

Years of Experience as RD/RDN. The average years of experience as an RD/RDN reported by participants was 19 years, with a range of experience from 1 to 60 years. The average age of RD/RDNs serving as a preceptor was 42 (*SD* = 12.8), and the average age of non-preceptors was 46 (*SD* = 12.1). The highest percentage of RD/RDNs currently serving as a preceptor, 46% (*n* = 145), reported 15 years or less experience as an RD/RDN. Similar findings were seen in research conducted by Hutchins et al. (2021), with the average years of practice as an RD/RDN among current and former preceptors was 19 years, and the average age of current and former preceptors was 46, while the non-preceptors average age was 42. The higher percentage of younger RD/RDNs serving as preceptors could be a result of having recent positive experiences with preceptors from their dietetic internships, which is supported by Allen et al. (1997), Bear and Hwang (2016), and Brekken (2021). Another possible explanation for the higher percentage of younger preceptors could be they are employed in more entry-level positions,

which may have lower levels of stress from not having management responsibilities, allowing for more time to supervise interns.

NDEP Membership. Low NDEP membership rates among preceptors were seen in the 2017 NDEP Preceptor Survey results. Of the 2,101 preceptors that responded to the NDEP survey, only 12% were members of NDEP (Datta, 2017). Of the current study participants, 31% reported being a member of NDEP. This could be due to the NDEP listserv being one of the methods for recruiting participants, along with a snowball sampling technique requesting current NDEP members on the listserv to share the survey link with other preceptors.

Completed ACEND Preceptor Training. Of the 145 participants, 41% completed the ACEND preceptor training course. These findings differ from the current literature. According to the NDEP 2017 Preceptor Survey, 53% of current preceptors were aware that ACEND offers free CEUs for serving as a preceptor, and approximately only 22% of current preceptors had completed any type of preceptor training (Datta, 2017). Brekken (2021) conducted a study to explore the factors that impacted nutrition professionals' willingness to serve as preceptors and reported even fewer dietitians, 38.2% (*n* = 228), were aware of the ACEND preceptor training. Awareness of available resources and training for preceptorship was reported as a significant variable impacting a dietitian's willingness to serve as a preceptor (Brekken, 2021).

Study participants were also asked to rank how well the ACEND preceptor training course prepared them to serve as a preceptor, using a 5-point Likert scale ranging from *Not effective at all* to *Extremely effective.* Responses formed a bell curve, with the majority (40.5%) feeling that the training was *moderately effective*. Responses of *not effective at all and extremely effective* scored 3.5% and 5.2%, respectively. Participants that completed the ACEND preceptor training course ranked the training

topics, *Preceptor roles and responsibilities, Evaluation of students,* and *Managing student objectives/expectations* as having improved their self-confidence in serving as a preceptor the most.

Completed Other Formal Preceptor Training. Of the 145 participants, 20% reported completing some other form of preceptor training, consisting of training provided by an internship program or through a hospital or university. Collectively, 52% completed any type of preceptor training. *Other* preceptor training programs were considerably shorter; 34.5% reported that the Other training programs were only an hour or less compared to the 8-hour ACEND preceptor training program. Participants that completed one of the *Other* preceptor training courses ranked the training topics, *Preceptor roles and responsibilities, Evaluation of students,* and *Rotation activities* as having improved their self-confidence in serving as a preceptor the most.

These findings align with the prior research, as a lack of knowledge and training are commonly reported reasons for RD/RDNs not precepting (Datta, 2017; Hutchins et al., 2021). The majority of internship programs reported a course or supplemental reading materials and guidelines as the only training provided to preceptors (Nasser et al., 2014; Winham et al., 2014; Yonge et al., 2008). Oler et al. (2015) reported that only 45% (*n* = 614) of preceptors completed any type of preceptor training, with only 19% having received training on providing feedback, 22% on using effective communication skills, and 15% on how to foster critical thinking and problem-solving skills. These findings suggest that while ACEND offers a free online preceptor training course, where 8 hours of CEUs can be earned, the majority of RD/RDNs are unaware of the training program. While dietetic internships, universities, and hospitals may currently offer limited training materials or courses to their preceptors, there isn't a defined set of standards or "best practices" for these programs to adhere to for preceptor training.

Reasons for Not Currently Serving as a Preceptor. Of the 88 participants not currently serving as a preceptor, the most reported reason was *not being asked* at 38.6%. The second most common reason reported was COVID-19-related issues at 9%. It was unclear if COVID-19-related issues were also a reason why an RD/RDN was not asked to serve as a preceptor. Contrary to the current literature, study participants reported lack of time, inadequate resources, lack of employer support, and lack of training as the lowest reasons for not currently serving as a preceptor. Research findings show that practicing RD/RDNs who serve as preceptors report a lack of time, decreased productivity, compensation, support, and resources as major barriers to serving as a preceptor (Morgan et al., 2018; Winham et al., 2014). The impact that the COVID-19 pandemic had in terms of on-site education, internship rotations, and patient contact was felt across all disciplines of healthcare education. Many medical facilities temporarily discontinued on-site clinical and community internship rotations to protect students and patients from getting sick while reserving personal protective equipment that may have been in short supply (Cummings et al., 2020; Ostrov, 2020). As the pandemic continued, medical facilities were able to shift to online, virtual, and telehealth or telemedicine to allow students and interns learning opportunities to meet the required educational standards (Cummings et al., 2020; Theoret & Ming, 2020). This study's data suggests that during the pandemic and the shift to online and virtual learning, a reduction in preceptors and site rotations was experienced. This could be due to facilities not having the required software and/or equipment needed to support virtual learning, or staff may not have been trained to use the necessary software and equipment. Another potential explanation is that healthcare workers that may have previously served as a preceptor and mentored interns were experiencing increased workloads due to the increased demand for patient care and did not have the time required to accept interns.

Research Questions

Research Question 1- What is the mean overall self-efficacy score of RD/RDNs about serving as a preceptor for dietetic interns?

The overall mean self-efficacy score of participants was reported as feeling "Somewhat confident," reflecting a mean score of 4.44 on a 5-point Likert Scale. The overall mean self-efficacy scores were only slightly higher for RD/RDNs that currently serve as preceptors compared to those that do not serve as a preceptor. Based on the current literature, the most commonly reported training needs for RD/RDNs to serve as a preceptor include an increase in knowledge and self-confidence in their ability to complete evaluations, provide feedback, and time management (Bengtsson & Carlson, 2015; Nasser et al., 2014; Sarcona et al., 2015; Taylor et al., 2010; Winham et al., 2014).

Findings from the *Preceptor Self-Efficacy Questionnaire* results suggest participants overall feel very confident in their knowledge of the preceptor role and ability to effectively communicate with interns. Participants' confidence levels were not as high when asked to assess their ability to select learning experiences congruent with rotation objectives and assist interns with problem-solving and critical thinking skills. Participants had the lowest level of confidence in being able to effectively assess interns learning needs, the ability to adapt their teaching to meet an intern's learning style, and to effectively manage a conflict between the intern and preceptor. Interestingly, participants had higher levels of confidence in completing written evaluations on an intern's performance, as opposed to verbal feedback about an intern's performance. Given that participants scored their confidence level in being able to maintain effective communication with interns as the second-highest preceptor skill, further research and discussion would be needed to evaluate which communication skills dietitians felt very confident about completing.

The *Preceptor Self-Efficacy Questionnaire* results and the mean overall self-efficacy scores suggest other barriers or challenges may contribute to dietitians not serving as preceptors. Prior research has identified several barriers and limitations to serving as a preceptor. The literature shows that lack of time, decreased productivity, increased workload, lack of compensation, decreased support, and lack of resources as major barriers to serving as a preceptor (AbuSabha et al., 2018; Hutchins et al., 2021; Kruzich et al., 2003; Morgan et al., 2018; Winham et al., 2014; Wooden, 2012). Contrary to the current literature, study participants reported lack of time, inadequate resources, and lack of employer support as the lowest reasons for not currently serving as a preceptor, at 8%, 3.4%, and 1.1%, respectively. Participants reported *not being asked to serve as a preceptor* as the main reason for not precepting. An option to write in reasons for not precepting was provided on the survey to allow for an exhaustive list of barriers to be collected. These included: retired or not currently practicing, maternity leave, taking a temporary break from precepting due to other professional obligations, high amounts of travel with their current position, and their current job was not able to provide sufficient learning activities for interns. Interestingly, zero participants reported that *not feeling adequately trained* was a reason for not precepting. This suggests that all participants either thought they had sufficient training and/or knowledge to serve as a preceptor or did not allow that to be a barrier to serving as a preceptor.

Research Question 2- Is there a difference in an RD/RDN's level of self-efficacy to perform the required skills and tasks of a dietetic preceptor between RD/RDNs who have or have not completed the Accreditation Council for Education in Nutrition and Dietetics (ACEND) preceptor training course?

The study participants that completed the ACEND preceptor training reported statistically higher levels of self-efficacy in performing the required skills and tasks of a dietetic preceptor than participants that did not complete the training. Forty-one percent of the 145 study participants completed the

ACEND preceptor training course, considerably higher than the approximate 22% of RD/RDNs that reported completing the ACEND training in the 2017 NDEP Preceptor Survey (Datta, 2017). The results of higher self-efficacy after completing preceptor training are not surprising given the extensive research that indicates a “lack of training” and “not feeling prepared for the preceptor role” as the most commonly reported reasons why RD/RDNs do not serve as a preceptor (Bengtsson & Carlson, 2015; Datta, 2017; Hutchins et al., 2021; Nasser et al., 2014; Winham et al., 2014; Yonge et al., 2008).

Research Question 3- Is there a difference in an RD/RDN's level of self-efficacy to perform the required skills and tasks of a dietetic preceptor between RD/RDNs who have completed 1) ACEND training or 2) other preceptor training?

Research questions two and three address the overall mean self-efficacy scores for preceptors based on whether they received preceptor training and the type of training completed. The self-efficacy scores of the preceptors who had completed the ACEND training were statistically higher than the self-efficacy scores of the preceptors who had not completed the ACEND training. When comparing the mean overall self-efficacy scores between the ACEND training and *Other* training programs, there was no difference in the self-efficacy scores of those who completed the ACEND training compared to the *Other* training. These findings indicated that preceptors who received any type of training reported higher self-efficacy scores to perform the required skills and tasks of a preceptor than those who did not receive any training. Research by Rambod et al. (2018), Parsons (2007), and Benoit et al. (2022) reported similar findings of increased levels of self-efficacy, knowledge, and skills among preceptors that completed training programs.

Research Question 4- Is there a difference in an RD/RDN's level of self-efficacy to perform the communication skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training and 2) no training?

The 13 tasks or skills addressed in the *Preceptor Self-Efficacy Questionnaire* were divided into three constructs based on underlying themes. A construct provides an efficient technique for labeling similar behaviors, skills, or tasks. Having several questions addressing a single construct can allow the researcher multiple responses to measure a single entity, which can sometimes be an abstract concept, such as "self-efficacy." The three constructs identified in the *Preceptor Self-Efficacy Questionnaire* included communication skills, management skills, and teaching/mentoring skills. The construct of communication was addressed in the questionnaire by asking how confident preceptors felt in their ability to maintain effective communication with interns, provide verbal feedback about an intern's performance, conduct written evaluations on performance, and their ability to provide constructive feedback.

Almost 94% of the 145 participants ranked their confidence in the ability to maintain effective communication with interns as either *Very confident* (71.7%) or *Somewhat confident* (22.1%). The scoring of confidence levels was not as high for conducting written evaluations and providing constructive feedback, as indicated by an increase in scores at the *Somewhat confident* level. Confidence levels for conducting written evaluations were ranked as *Very confident* (69%) or *Somewhat confident* (24.1%). Participants rated their confidence in providing constructive feedback similarly as well, *Very confident* (64.8%) or *Somewhat confident* (29.7%). Participants were the least confident in their ability to provide verbal feedback to interns regarding their performance, as indicated by scores of *Very confident* (58.6%) or *Somewhat confident* (34.5%).

This study's findings align with the current literature, as evidenced by a systematic scoping review that measured and assessed competencies in health professions preceptors (Bartlett et al., 2020). Researchers reviewed 110 research articles that assessed a 17-item evidence-based set of preceptor competencies applicable to a diverse range of health professions (Bartlett et al., 2020). Competencies were measured using the GRADE-CERQual (Grading of Recommendations Assessment, Development, and Evaluation-Confidence in the Evidence from Reviews of Qualitative research) approach (Bartlett et al., 2020). Survey assessments were completed by preceptors, preceptor self-assessments, and peer observations. Each competency was then given a rating based on the evidence (Bartlett et al., 2020). The competency of *effective provision of feedback* received a rating of moderate, and the preceptor's skill of being *open to receiving feedback* was rated as low. The literature also indicated that preceptors overestimated their abilities when self-evaluating compared to peer/preceptee evaluations. After reviewing the literature, there currently isn't an established minimum standard of performance for preceptors (Bartlett et al., 2020; Melaku et al., 2016).

Bengtsson and Carlson (2015) found, in a qualitative study of 64 preceptors, that the knowledge and skills needed to improve as a preceptor included communication models and strategies, along with training on providing constructive feedback and reflections on assessments. Providing relevant and timely feedback is crucial to identifying knowledge deficits and promoting learning (Roofe, 2018). Providing verbal feedback is an example of the Science of Learning principle known as *feedback effects* (Gordon et al., 2020). When interns receive feedback, they can better understand what they have done correctly and how to correct and improve any incorrect work or skills. This study's findings show that participants were the least confident in their ability to provide verbal feedback to interns regarding their

performance. This indicates that additional training would benefit preceptors focusing on verbal communication skills, specifically providing feedback.

Research Question 5- Is there a difference in an RD/RDN's level of self-efficacy to perform the management skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training and 2) no training?

The construct of management was addressed in the questionnaire by asking how confident preceptors felt in their ability to carry out their role as a preceptor, if they thought they had the necessary knowledge to work with a dietetic intern, can assist interns in developing problem-solving skills, and how effectively they can manage a conflict in the inter/preceptor relationship. Ninety-three percent of the 145 participants ranked their confidence in the ability to carry out their role as a preceptor as either *Very confident* (65.5%) or *Somewhat confident* (27.6%). Similar results were seen in study participants when asked about their confidence in having the necessary knowledge of the preceptor role to perform effectively as a preceptor; 93% ranked their confidence as either *Very confident* (61.4%) or *Somewhat confident* (31.7%).

The participant's confidence levels shifted lower on the Likert scale when asked to rank their confidence on specific management-related competencies, such as assisting interns in developing problem-solving skills and conflict management. The participants rated their confidence in their ability to assist interns in developing problem-solving skills as *Very confident* (51.7%)*, Somewhat confident* (39.3%), and *Neutral* (8.3%). Participants reported the lowest confidence levels in the management construct for their ability to effectively manage a conflict in the intern/preceptor relationship as *Very confident* (43.4%)*, Somewhat confident* (37.2%), *Neutral* (13.1%), and *Somewhat lacking in confidence* (5.5%).

Marincic and Franchort (2002) conducted a correlational study of 116 dietetic preceptors to examine the relationship between perceived benefits, rewards, and support, to their level of commitment to the preceptor role. Results from this study indicated that 58% of preceptors received no preceptor training, 32% received informal training, and only 10% received formal preceptor training. Study participants reported a need for training in teaching/learning strategies, including conflict resolution (Marincic & Franchort, 2002). The most reported barriers to working and mentoring interns included a lack of training on how to communicate and manage challenging interns. A challenging intern has been reported by preceptors as "know-it-alls," having a poor attitude, unprofessional behavior, doing the minimum amount of work, and does not know their limitations (DeWolfe et al., 2010; Hutchins et al., 2021; Lordly, 2007; Winham et al., 2014).

DeWolfe et al. (2010) conducted a study of 102 preceptors using the Delphi technique to identify and gain a consensus on the characteristics of an effective preceptor, preceptor benefits, and the most important orientation and training skills and topics needed by preceptors. An agreement of important skills, ranking a 4 or 5 (using a Likert scale of 1-5), included fostering the development of critical thinking and problem-solving skills, providing constructive feedback to students, and how to resolve conflicts with students. One skill of note that was considered moderately important, ranking a 3 or 4, was the ability to help students work with other members of the interdisciplinary team (DeWolfe et al., 2010). Harris et al. (2012) reviewed the 2010 American College of Clinical Pharmacy Council of Sections Preceptor Development Task Force findings. The task force report indicated minimal experiential education costs were allocated toward preceptor training and development. The task force recommended several topics for preceptor training, including how to give feedback and manage conflict when dealing with challenging students (Harris et al., 2012).

Moelter et al. (2017) surveyed 202 dietetic preceptors and dietetic internship directors to determine their views about preceptor recruitment and retention. Seventy-two percent of the internship directors reported challenges with recruiting preceptors, and 56% reported difficulty conducting preceptor training. Less than half (49%) of internship directors thought additional preceptor training would be beneficial, while 60% felt that incentives would more positively impact preceptor retention (Moelter et al., 2017). Interestingly, 63% of preceptors that completed the survey reported feeling neutral or that their training/orientation was inadequate. Preceptors also had a less favorable response about incentives increasing their likelihood to start or continue serving as a preceptor, with 56% stating an incentive would not impact their decision to precept (Moelter et al., 2017).

The findings from this current study align with the existing literature on conflict management and how to deal with challenging interns. This study's findings support the benefits of preceptor training and the need to address management and conflict resolution strategies.

Research Question 6- Is there a difference in an RD/RDN's level of self-efficacy to perform the teaching/mentoring skills of a preceptor between RD/RDNs that have completed 1) any type of preceptor training, 2) no training?

The construct of teaching/mentoring was addressed in the questionnaire by asking how confident preceptors felt in their personal level of knowledge, their ability to effectively assess an intern's learning needs, if they could adapt their teaching to meet an intern's learning style, if they could select learning experiences that are congruent with internship rotation objectives, and if they could assist interns in developing critical thinking skills. Of the 145 participants, 96.5% felt either *Very confident* (73.1%) or *Somewhat confident* (23.4%) in their personal level of knowledge to work with an

intern. When asked to rank their confidence for specific skills in the teaching/mentoring construct, study participants reported the lowest confidence levels out of all three constructs.

The participant's confidence level in their ability to effectively assess an intern's learning needs was ranked as Very confident (43.4%) or Somewhat confident (42.1%); collectively, 14.5% ranked their confidence as *Neutral* or *Somewhat lacking in confidence.* Similar confidence levels were seen in their ability to adapt their teaching to meet an intern's learning style, participants felt *Very confident* (42.1%) or *Somewhat confident* (42.1%), and collectively almost 16% ranked their confidence as *Neutral, Somewhat lacking in confidence,* or *Completely lacking in confidence.* Regarding selecting learning experiences that are congruent with internship rotation objects, participants ranked their abilities as either *Very confident* (57.2%) or *Somewhat confident* (31%), and collectively, almost 12% rated their confidence as *Neutral* or *Somewhat lacking in confidence.* Lastly, participants were asked to rank their confidence in their capability to assist interns in developing critical thinking skills. Participants felt *Very confident* (49.7%) or *Somewhat confident* (36.6%), and collectively almost 13% ranked their confidence as *Neutral, Somewhat lacking in confidence,* or *Completely lacking in confidence.*

The current study's findings show that participants feel the least confident in their ability to perform the teaching/mentoring skills required of a preceptor. Previous research has also identified that preceptors have concerns about their effectiveness as teachers and have little to no knowledge about the principles of adult education (Barker & Pittman, 2008; Taylor et al., 2010). In a study by Nasser et al. (2014), 750 dietitians completed a survey about their perceptions of the required skills, knowledge, attitudes, barriers, and training for precepting. The majority (98%) of dietitians stated that preceptors should be aware of different learning styles; however, only 31% reported that they *strongly agree* preceptors should be able to recognize the external factors that can influence learning, and 29%

reported that they *strongly agree* preceptors should be able to identify the internal factors influencing learning. Fifty-six percent of participants reported as *strongly agree* that a preceptor should assess and adapt their teaching to an intern's learning style, and 79% reported wanting additional training to be a preceptor (Nasser et al., 2014). This study's results, along with the current literature, support the need for preceptor training programs to include a more extensive curriculum on how to assess an intern's learning style and how to adapt their own teaching style, and select learning activities accordingly.

Research Question 7- Do years of experience as a preceptor, previous type of preceptor training, age, level of formal education, and place or type of employment predict an RD/RDN's level of overall self-efficacy as a preceptor?

Results of this study showed that an RD/RDN's employment in a clinical setting, age, and the highest level of education completed all significantly predicted a preceptor's level of self-efficacy. A possible explanation for why a preceptor employed in a clinical setting may report higher levels of self-efficacy is that clinical dietitians typically have other dietitians working at the same facility and could have more opportunities to collaborate or ask questions/advice from co-workers. Another possible explanation is that clinical preceptors may feel that they have a higher level of knowledge and/or technical skills based on their job requirements. A clinical preceptor's age may also influence their level of self-efficacy. The average age of a clinical dietitian is 40+ years, suggesting an increased amount of work-related experience as well (Zippia, 2019). The age of a preceptor had statistical significance in predicting self-efficacy levels, with the mean level of overall self-efficacy increasing for every year that age increased. Lastly, the highest level of education completed aligns with higher reported self-efficacy levels. This would be expected due to the advanced knowledge and skills acquired as higher education levels were achieved.

The literature has mixed results about a preceptor's demographics predicting levels of self-efficacy. Researchers have consistently found that a preceptor's level of self-efficacy has been significantly associated with higher educational degrees (Kim & Kim, 2019; Larsen & Zahner, 2011; Parsons, 2007; Wooden, 2012; Winham et al., 2014). A preceptor's age and place of employment have not shown consistent findings among studies. Kim and Kim (2019) found a significant correlation between nursing preceptors' age and self-efficacy. Interestingly, Brekken (2021) found a reverse relationship between RD/RDNs and their willingness to serve as preceptors, with higher levels reported amongst younger practitioners. Similar to the Brekken (2021) findings, Butler et al. (2021) found, in a study of 1,170 RD/RDNs, that a higher percentage of younger RD/RDNs reported currently serving as a preceptor. In contrast, Winham et al. (2014) and Parsons (2006) did not find a significant correlation between preceptor age and self-efficacy.

Limited research has been conducted that assessed the influence of the preceptors' area of practice on self-efficacy levels. Significantly higher levels of self-efficacy among RD/RDNs serving as preceptors employed in clinical nutrition positions were reported by Kim & Kim (2019), Sarcona et al. (2015), and Winham et al. (2014). Most studies only report place of employment, area of practice, or employment status (i.e., part-time or full-time) among demographic and descriptive characteristics describing the sample population. Additional research is needed to explore further the influence of a preceptor's area of practice and their level of self-efficacy in the preceptor role.

Limitations

A potential limitation of this study was using a purposive sample. Given the limitation of not having a complete listing of preceptors in the United States, the use of the NDEP listserv, IAND membership roster, social media, and snowball sampling to increase the number of participants

appeared to be the optimal sampling choice. Another potential limitation is that the data was collected at a single point in time that was unrelated to their possible preceptor training. Some participants may have recently completed preceptor training, while others may have completed preceptor training years ago. There are general limitations associated with survey research, including all data being self-reported and the potential for non-response bias. There is also the risk that subjects may not have responded honestly, remembered information accurately, or misinterpreted the meaning of a question (Nardi, 2018). The survey was limited to participants with computer and/or smartphone access. However, none of the participants or potential participants notified the researcher that this was an issue or concern. Given the sample size (n=145), it may limit the ability to generalize the results. Based on the demographic data collected, the participants only differed from the national statistics for dietitians by having a higher level of education completed on average.

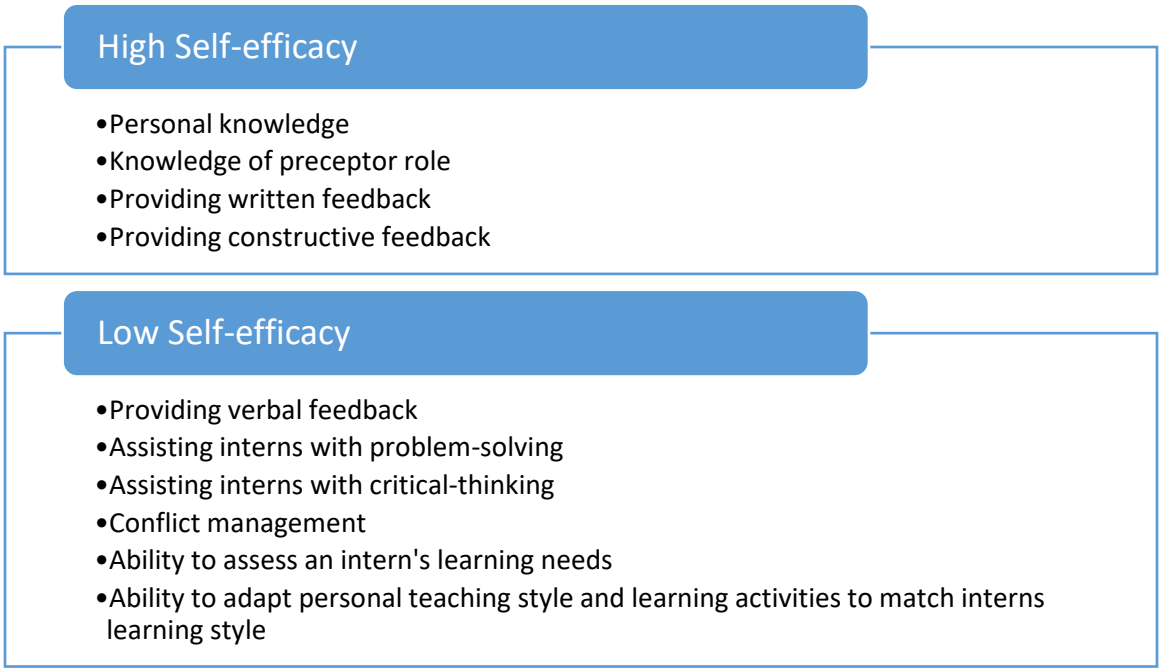
Another potential limitation of this study resulted from the survey design and the wording of two questions on the demographic questionnaire. Research questions 4, 5, and 6 addressed an RD/RDN's level of self-efficacy to perform one of the following three constructs, communication skills, management skills, and teaching/mentoring skills about the type of preceptor training they received. Participants were asked in the demographic questionnaire if they had completed the ACEND preceptor training course and if they had completed any formal preceptor training not affiliated with ACEND. During data analysis, it was discovered that some participants responded "yes" to both questions regarding training, resulting in the inability to distinguish which type of training had an impact or effect on their self-efficacy for the above-listed constructs. As a result, research questions 4, 5, and 6 were slightly modified to read "RD/RDNs that have completed any preceptor training or no training" instead of separating the training types.

Implications and Recommendations for Dietetics Practice

Preceptors play a critical role in training and preparing dietetic interns to be successful entry-level dietitians. Outside the ACEND preceptor training course, there is limited information regarding the curriculum and content of formal preceptor training provided to preceptors through an internship program, hospital, or university. This study aimed to explore the relationship between an RD/RDN's level of self-efficacy to competently serve as a preceptor and the amount and type of preceptor training completed. Overall, participants reported feeling highly efficacious about serving as a dietetic preceptor; however, lower levels of self-efficacy were noted among individual skills related to precepting. Participants reported the highest levels of self-efficacy in the construct of communication skills, the next highest was management skills, and the lowest levels of self-efficacy were reported for teaching/mentoring skills. Figure 7 highlights the specific preceptor skills reported with the highest and lowest levels of self-efficacy. The specific skills with lower self-efficacy levels identified in each construct should be incorporated into future preceptor training programs to aid in improving a preceptor's level of self-efficacy. These skills include the ability to provide verbal feedback, assist interns with problem-solving and critical-thinking skills, conflict management, the ability to assess an intern's learning needs, and, lastly, the ability to adapt their teaching to meet an intern's learning style.

Figure 7

Specific Preceptor Skills with the Highest and Lowest Levels of Self-efficacy



When comparing the types of training that preceptors completed and the relationship to self-efficacy, there was a statistical difference in self-efficacy scores between preceptors who had completed the ACEND preceptor training and those who did not. Most participants felt that the ACEND training was *moderately effective* at preparing them for the preceptor role. Participants reported that the most beneficial topics in the ACEND training included preceptor roles and responsibilities, evaluation of students, managing student objectives/expectations, teaching strategies, and learning styles. The training on evaluating students, teaching strategies, and learning styles was reported to have improved participants' level of self-efficacy the most.

There was no difference in self-efficacy when those who had taken the ACEND preceptor training were compared to *Other* preceptor training, although several distinguishing features were noted. Preceptors who completed *Other* preceptor training programs indicated the programs were considerably shorter than the ACEND training, averaging an hour or less versus the 8-hour ACEND training. In addition, there was no consistency in the curriculum taught in the *Other* preceptor training, whereas ACEND's preceptor training has an established curriculum. Among the participants that completed *Other* preceptor training, the skills that improved their self-efficacy the most included evaluating students, activities to meet rotation objectives, and communication skills.

Among the demographic data collected in this study, results showed that an RD/RDN's employment in a clinical setting, age, and the highest level of education completed were all able to significantly predict a preceptor's level of self-efficacy. This study found that more participants were currently serving as a preceptor with 15 years or less experience as an RD/RDN compared to older RD/RDNs. This suggests that younger RD/RDNs may be a valuable demographic for recruiting preceptors. Younger RD/RDNs may need additional training or support to serve effectively as a preceptor due to less workforce experience and potentially lower self-efficacy levels. A further recommendation for preceptor recruitment would be for individual state dietetic associations to establish preceptor databases of dietitians willing to serve as a preceptor. This information could be shared with the dietetic internship programs within that state.

Based on the literature review and the findings from this study, it would be beneficial for the dietetics profession to have a standardized curriculum for preceptor training that provides a minimum or baseline level of skills and knowledge taught to preceptors. While not the scope of this research study, extensive research has been conducted on the perceived barriers and challenges to serving as a

preceptor. The reported barriers include, but are not limited to, a lack of training, lack of time, and increased burden on their workload (Bengtsson & Carlson, 2015; Nasser et al., 2014; Sarcona et al., 2015; Taylor et al., 2010; Winham et al., 2014). A potential solution to decrease these perceived barriers is to incorporate training and education on each of these issues in preceptor training programs. Topics on time and workload management could be included to aid in decreasing the perceived burden and ultimately increasing the number of RD/RDNs serving as preceptors. Along with the developmental training topics, a clear expectation of expected preceptor obligations should be outlined in the preceptor training programs. Due to the diversity in dietetic internship programs' courses and supervised practice rotations and schedules, this component would need to be individualized by the different programs.

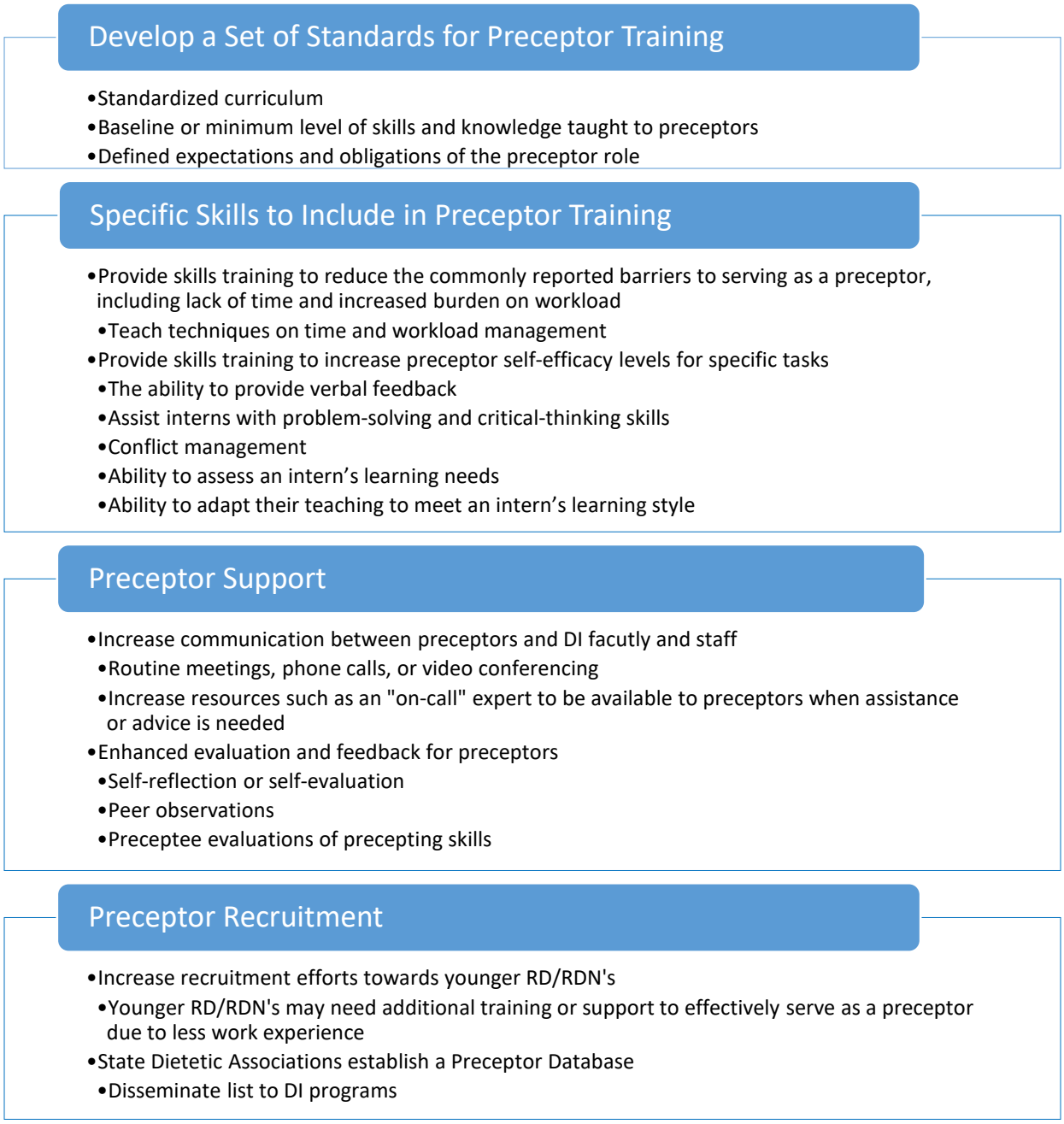
Dietetic internship programs could also incorporate more communication with internship faculty and include evaluations of the preceptors. Often it is only the preceptor completing evaluations on the interns and the preceptors receive little feedback regarding their performance or areas they can improve upon (DeWolfe et al., 2010; Hutchins et al., 2021; Melaku et al., 2016). The literature review also found that preceptors often rated their precepting skills higher than preceptees when evaluations on preceptors were completed (Bartlett et al., 2020; Melaku et al., 2016). A combination of self-reflection or self-evaluations completed by the preceptors, peer observations, and preceptee evaluations of precepting skills should be considered to decrease bias in the evaluation process.

A final recommendation is increased communication and support with preceptors from the internship program. Preceptors should have regular access to faculty, including routine meetings, phone calls, or video conferencing. Also, having access to more resources when preceptors need assistance or advice handling a challenging student or situation would be beneficial. An "on-call" expert or resource

providing direction and assistance could be valuable for preceptors. Increased communication, support, and access to resources could aid in preceptors feeling more valued and supported and may lead to increased preceptor self-efficacy levels and retention. Figure 8 summarizes the recommendations for dietetic practice to improve preceptor training and increase the self-efficacy of preceptors.

Figure 8

Recommendations for Dietetics Practice



Recommendations for Future Research

An area for future research is to determine a minimum level of preceptor knowledge and skills needed to competently serve as a preceptor and establish a minimum standard for preceptor performance. Given the discrepancies found between higher levels of confidence in communication skills and lower levels of confidence in providing verbal feedback to interns, additional research should also be conducted to evaluate which specific communication skills dietitians feel very confident about completing. Future research is also needed to develop a standardized curriculum for preceptor training. Evaluating the effectiveness of implementing standardized training among dietetic internship programs and assessing the impact of the training on preceptor knowledge and self-efficacy levels would be valuable.

It would have been interesting to inquire about why participants did not complete the ACEND preceptor training course. The literature shows a lack of awareness among RD/RDNs that ACEND offers a free preceptor training program (Datta, 2017). It would be beneficial to know if RD/RDNs were aware of the ACEND training but elected not to complete it and, if so, their reasons for not completing it. The ACEND training is an online, self-guided program that takes eight hours to complete; it would be interesting to know if any of the factors in delivery method or length of time influenced an RD/RDN's decision to complete the training. These findings could influence the development of future preceptor training programs.

When study participants were asked why they were not currently serving as a preceptor, one of the options they could have selected was "not asked to serve as a preceptor." Thirty-nine percent (*n*=34) of study participants selected this option. It could be beneficial to further research *why* dietitians were not asked to serve as preceptors. Determining if the reason for not being asked was related to the

RD/RDN's skill or experience level could also be valuable in developing future preceptor training programs.

Conclusions

This causal-comparative research study provides evidence for identifying which preceptor training topics correlated with improving self-efficacy levels in an RD/RDN's ability to perform the required skills and tasks of a dietetic preceptor. Results indicated that training on evaluating students, teaching strategies, and learning styles increased self-efficacy levels the most from the ACEND preceptor training program. Training on evaluating students, rotation activities, and communication strategies had the most influence on self-efficacy levels from *Other* training programs. This study also provides evidence for which skills preceptors reported the lowest levels of self-efficacy and need additional training. These include the ability to provide verbal feedback, assist interns in developing problem-solving and critical-thinking skills, conflict management, the ability to assess an intern's learning needs, and the ability to adapt teaching to meet an intern's learning style. The study results found that employment in a clinical position, age, and highest level of education completed could significantly predict self-efficacy levels.

This study makes an essential contribution to preceptor literature as it is the first known study to evaluate the effectiveness of the ACEND preceptor training program on a preceptor's level of self-efficacy. There is a continued need to determine a minimum level of preceptor knowledge and skill and to establish a minimum standard of preceptor performance. With the dependence on preceptors to facilitate dietetic interns learning in community, clinical, and food service internship rotations, it is crucial to provide the required knowledge and skills to RD/RDNs to improve their self-efficacy in performing the required skills and tasks of a preceptor.

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Appendices

Appendix A: IRB Approval Letter

UNIVERSITY OF SOUTHERN INDIANA

Office of Sponsored Projects and Research Administration
8600 University Boulevard * Evansville, Indiana 47712 * 812-465-1126
www.usi.edu/ospra - rcr@usi.edu

DATE:	January 12, 2022
TO:	Beth Young
FROM:	USI Office of Sponsored Projects and Research Administration
PROJECT TITLE:	[1843949-1] An Examination of the Influence of Training, on Dietetic Preceptors' Perception of their Self-efficacy.
REFERENCE #:	2022-058-SEE
SUBMISSION TYPE:	New Project
ACTION:	APPROVED
IRB APPROVAL DATE:	January 12, 2022
EXPIRATION DATE:	May 27, 2022
REVIEW CATEGORY:	TYPE 1 RESEARCH - Exempt Category # 2

The above project has been approved by USI's IRB under the provision of Federal Regulations 45 CFR 46.

This approval is based on the following conditions:

1. The materials you submitted to the IRB (through IRBNet) provide a complete and accurate account of how human subjects are involved in your project.
2. You will carry on your research strictly according to the procedures described in the materials presented to the IRB.
3. If any changes are made, you will submit the Amendment Form through IRBNet.
4. You will immediately report to the Office of Sponsored Projects and Research Administration any problems or adverse events encountered while using human subjects.
5. Prior to expiration, you will submit a Continuing Review Form through IRBNet.

This project requires continuing IRB review on an annual basis. Please use the Continuing Review Form for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of May 27, 2022.

To renew this project or make a modification, please see the IRBNet User Manual on our website at usi.edu/ospra for step-by-step instructions on submitting the Continuing Review Form or the Amendment Form.

If you have any questions, please contact us at 812-465-7000 or rcn@usi.edu.

Please include your project title and reference number in all correspondence with this committee.

Dr. K. Draughon

Dr. Katherine A. Draughon
Executive Director - OSPRA

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within The Office of Sponsored Projects and Research Administration's records.

Appendix B: IRB Amendment/Modification Approval Letter

UNIVERSITY OF SOUTHERN INDIANA
Office of Sponsored Projects and Research Administration
8600 University Boulevard * Evansville, Indiana 47712 * 812-465-1126
www.usi.edu/ospra - rcr@usi.edu

DATE:	February 7, 2022
TO:	Beth Young
FROM:	USI Office of Sponsored Projects and Research Administration
PROJECT TITLE:	[1843949-2] An Examination of the Influence of Training, on Dietetic Preceptors' Perception of their Self-efficacy.
REFERENCE #:	2022-058-SEE
SUBMISSION TYPE:	Amendment/Modification
ACTION:	APPROVED
IRB APPROVAL DATE:	February 7, 2022
EXPIRATION DATE:	May 27, 2022
REVIEW CATEGORY:	TYPE 1 RESEARCH - Exempt Category # 2

The above project has been approved by USI's IRB under the provision of Federal Regulations 45 CFR 46.

This approval is based on the following conditions:

1. The materials you submitted to the IRB (through IRBNet) provide a complete and accurate account of how human subjects are involved in your project.
2. You will carry on your research strictly according to the procedures described in the materials presented to the IRB.
3. If any changes are made, you will submit the Amendment Form through IRBNet.
4. You will immediately report to the Office of Sponsored Projects and Research Administration any problems or adverse events encountered while using human subjects.
5. Prior to expiration, you will submit a Continuing Review Form through IRBNet.

This project requires continuing IRB review on an annual basis. Please use the Continuing Review Form for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of May 27, 2022.

To renew this project or make a modification, please see the IRBNet User Manual on our website at usi.edu/ospra for step-by-step instructions on submitting the Continuing Review Form or the Amendment Form.

If you have any questions, please contact us at 812-465-7000 or rcr@usi.edu.

Please include your project title and reference number in all correspondence with this committee.

Dr. Amy Chan Hilton
Interim Authorizing Official - OSPRA

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within The Office of Sponsored Projects and Research Administration's records.

Appendix C: NDEP Approval Letter

From: ndep <ndep@eatright.org>
Sent: Tuesday, June 1, 2021 9:37 AM
To: Young, Beth A <bayoung12@usi.edu>
Subject: RE: Contact Information Request

*** This message was sent from a non-USI address. Please exercise caution when responding, clicking on links or opening attachments. ***

Hi Beth-

NDEP has a survey policy which I have attached to this email on page 21. Please review it and let me know if you have any questions. The steps are also listed below:

To submit a proposed survey to the NDEP Council for review, the following key points must be emailed to ndep@eatright.org:
• the survey in its final form, as already approved by an external IRB, and if questions, to contact the researcher (not NDEP); keep the survey as short as possible and provide an estimated length and time to complete for participants;
• allow a 4-6 week review and approval of the survey by the NDEP Council; and,
• once your research is concluded, provide a summary and/or link to thesis or publication to be posted on the NDEP portal;
• Include the following consent language, "NDEP Council has approved posting this study to NDEP listserv,"(can be included either on the original Informed Consent prior to approval by the external IRB, or placed on your posting with the NDEP listserv)

From: Young, Beth A <bayoung12@usi.edu>
Sent: Sunday, September 26, 2021 3:58 PM
To: ndep <ndep@eatright.org>
Subject: RE: Contact Information Request

Thank you very much for sending this initial information regarding survey requests and approval process. I do have an additional question.
-Would I be allowed to send out a reminder email at a set time (ex. 1 week post) after the initial email was sent out to remind NDEP members to take the survey? Or is the permission only for a 1 time email?

Thank you-

Mrs. Beth A. Young, MA, RD, CSSD, LD

N ndep <ndep@eatright.org>
To Young, Beth A
You replied to this message on 9/27/2021 1:48 PM.

Reply | Reply All | Forward | ...
Mon 9/27/2021 10:20 AM

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Hi Beth-

Once your survey has been reviewed by the NDEP Council, you can send reminder emails out via the listserv.

Thank you for checking.

Thanks,
Lauren

Appendix D: IAND Approval Letter

Hello Beth,

IAND is pleased to assist you with your research study through invitation to our membership, of more than 1200 Registered Dietitians, to complete the survey you will provide. Our Standing Rules were updated in 2019 to allow support of our members as they pursue advanced degrees within our educational parameters:

"Electronic e-mails may be used by the Executive Director to send surveys for research purposes. The Executive Director will screen requests, validate with the IAND Executive Board and forward appropriate surveys to IAND membership. Participation is always optional. The following criteria must be met to utilize member email addresses for research:

- The project must have IRB approval
- Data will be used for a master's thesis or doctoral dissertation"

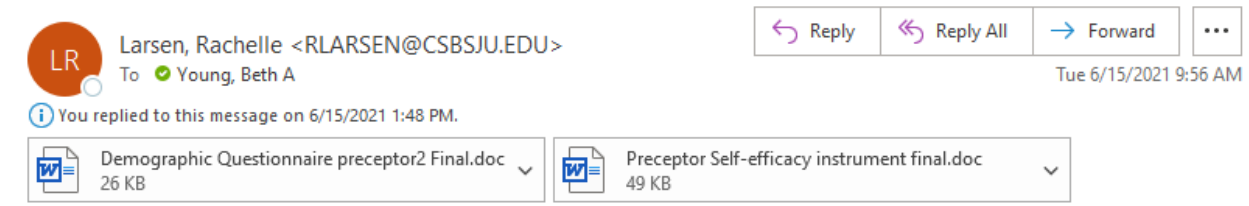
Please provide the introduction of the project, the survey link, and the date you would like to publish the email to membership. I will look forward to hearing from you.

Thank-you,
Lorna

Lorna O'Connell, MS, RDN, LD
IAND Executive Director

IAND
Indiana Academy of
Nutrition & Dietetics

Appendix E: Permission to Use Preceptor Self-Efficacy Questionnaire



*** This message was sent from a non-USI address. Please exercise caution when responding, clicking on links or opening attachments. ***

Hello Beth,
Thank you for reaching out to me regarding the Preceptor Self-efficacy Instrument. Attached are the instrument and demographic questions. In any publication of your study, please do not publish the entire instrument. You can however include sample questions from the questionnaire. Best of luck on your research.
Rachelle

Rachelle Larsen, PhD, RN
Professor, Nursing Department
College of St. Benedict/St. John's University
37 S. College Avenue
St. Joseph, MN 56374
rlarsen@csbsju.edu
320-363-5192
Pronouns: she, her, hers

Appendix F: Revisions Made to Preceptor Self-Efficacy Questionnaire

Table 10

Revisions Made to Preceptor Self-efficacy Questionnaire

Original Term:	Revised Term:
student	intern
nursing	dietetic
baccalaureate nursing student	dietetic intern
clinical teaching	teaching
course objectives	internship rotation objectives
Questions removed from the original questionnaire:	
You can assume a facilitative rather than a directive role with students.	
You can support student ideas even when they are incongruent with your own.	
You can promote the integration of skills learned in the classroom to the practice setting.	

Appendix G: Preceptor Demographic Questionnaire

1. Age _____
2. What is your highest level of education completed:
   _____ Bachelor's degree
   _____ Master's degree
   _____ Doctoral degree

3. How many years have you been an RD/RDN? _____
4. What is your current area of practice in dietetics? (Dropdown menu)
   - clinical, food service, community, research, academia, management, sports nutrition, wellness, other
5. What state do you currently practice/work in? (Dropdown menu)
6. Are you a member of NDEP: Nutrition and Dietetic Educators and Preceptors (or have you been previously)? _____ Yes _____ No
7. Are you **currently** serving as a dietetic internship preceptor? _____ Yes _____ No
8. How long have you been a preceptor? (Dropdown menu)
   - <1 yr., 1-3 yrs., 4-6yrs., 7-9yrs. or 10+yrs.
9. Have you completed the online preceptor training through the Accreditation Council for Education in Dietetics (ACEND)? _____ Yes _____ No
   -If yes, how effective do you feel the AND preceptor training course prepared you to serve as a preceptor (scale of 1-5 with 1 being not effective at all to 5 being extremely effective.)
10. Have you completed any formal preceptor training not affiliated with ACEND? (Example- through a university or Internship program)
   _____ Yes _____ No
   -If yes, what was the approximate length of the preceptor training? _____ (hours)
   -If yes, was it in person or online?

   -If you answered yes to 9 or 10, please select **the top 3 topics** that you felt improved your confidence in serving as a preceptor the most:
      _____ Preceptor roles and responsibilities
      _____ Learning styles
      _____ Evaluation of students
      _____ Teaching strategies
      _____ Conflict management
      _____ Communication strategies
      _____ Cultural competency
      _____ Managing Student objectives/expectations
      _____ Time management
      _____ Rotation Activities
      _____ Other (please list) _____

11. Have recent modifications to internship activities in reaction to COVID-19 (changes to use virtual, telehealth, simulations, etc.) caused you to NOT serve as a preceptor? _____ Yes _____ No

Appendix H: Initial Revision- Preceptor Self-Efficacy Questionnaire

Please complete the questions below whether you have served as a preceptor or not. Select the most appropriate response for each item below, using the following scale:

1= Completely lacking in confidence
2= Somewhat lacking in confidence
3= Neutral
4= Somewhat confident
5= Very confident

How confident are you that:

1.	You have the ability to carry out your role as a preceptor.	1	2	3	4	5
2.	You have the necessary knowledge to work with a dietetic intern.	1	2	3	4	5
3.	You have the necessary knowledge of the preceptor role to perform effectively as a preceptor.	1	2	3	4	5
4.	You can maintain effective communication with interns.	1	2	3	4	5
5.	You can balance the multiple demands of interns and your workload simultaneously.	1	2	3	4	5
6.	You can effectively assess interns learning needs.	1	2	3	4	5
7.	You can adapt your teaching to meet an intern's learning style.	1	2	3	4	5
8.	You can select learning experiences that are congruent with internship rotation objectives.	1	2	3	4	5
9.	You can assist interns to develop problem-solving skills.	1	2	3	4	5
10.	You can assist interns to develop critical thinking skills.	1	2	3	4	5
11.	You can challenge interns to use critical thinking skills.	1	2	3	4	5
12.	You can cope effectively with unexpected events or unforeseen problems.	1	2	3	4	5
13.	You can effectively manage a challenging intern.	1	2	3	4	5
14.	You can effectively manage a conflict in the intern/preceptor relationship.	1	2	3	4	5
15.	You can provide verbal feedback to interns about their performance.	1	2	3	4	5
16.	You can provide a written evaluation of an intern's performance.	1	2	3	4	5
17.	You can provide constructive feedback.	1	2	3	4	5
18.	Rate your overall level of confidence in precepting a dietetic intern.	1	2	3	4	5

Appendix I: Alignment of Constructs in Preceptor Self-Efficacy Questionnaire

Table 11

Alignment of Constructs in Preceptor Self-efficacy Questionnaire

Construct	Question
Communication Skills	4,11,12,13
Management Skills	1,3,8,10
Teaching and Mentoring Skills	2,5,6,7,9

Appendix J: Final- Preceptor Self-Efficacy Questionnaire

Please complete the questions below whether you have served as a preceptor or not. Select the most appropriate response for each item below, using the following scale:

1= Completely lacking in confidence
2= Somewhat lacking in confidence
3= Neutral
4= Somewhat confident
5= Very confident

How confident are you that:

1.	You have the ability to carry out your role as a preceptor.	1	2	3	4	5
2.	You have the necessary knowledge to work with a dietetic intern.	1	2	3	4	5
3.	You have the necessary knowledge of the preceptor role to perform effectively as a preceptor.	1	2	3	4	5
4.	You can maintain effective communication with interns.	1	2	3	4	5
5.	You can effectively assess interns learning needs.	1	2	3	4	5
6.	You can adapt your teaching to meet an intern's learning style.	1	2	3	4	5
7.	You can select learning experiences that are congruent with internship rotation objectives.	1	2	3	4	5
8.	You can assist interns to develop problem-solving skills.	1	2	3	4	5
9.	You can assist interns to develop critical thinking skills.	1	2	3	4	5
10.	You can effectively manage a conflict in the intern/preceptor relationship.	1	2	3	4	5
11.	You can provide verbal feedback to interns about their performance.	1	2	3	4	5
12.	You can provide a written evaluation of an intern's performance.	1	2	3	4	5
13.	You can provide constructive feedback.	1	2	3	4	5

Appendix K: Social Media Recruitment Post

Appendix L: Email Script- Survey Recruitment

Re: **An Examination of the Influence of Training on Dietetic Preceptors' Perception of their Self-efficacy.**

You are invited to participate in a voluntary research study about the relationship between an RD/RDN's level of self-efficacy to competently serve as a preceptor and their level of prior preceptor training. This study is being conducted by Beth A. Young, MA, RD, CSSD, LD, a doctoral student at the University of Southern Indiana, and Dr. Tori Colson, Associate Professor of Teacher Education at the University of Southern Indiana. Your participation would be most appreciated.

Participation includes completing an anonymous, one-time, online survey using Qualtrics. The survey will take approximately 10-15 minutes to complete. Your participation in this research will be completely confidential. You can elect to withdraw at any time during the study. To withdraw from the study, end participation by exiting the survey.

- The only exclusion criteria are if you are NOT an RD/RDN or if you have NEVER served as a preceptor.

If you are an internship or program director and you have contact with the internship program's preceptors that may not be members of NDEP, I am requesting your assistance in sharing the survey link with your internship program's preceptors.
To participate in the study, click on this link:
https://usisurvey.az1.qualtrics.com/jfe/form/SV_bNIRTWCCQ5SvMvc
Outcomes will only be presented in aggregate form, and no identifiable information will be collected. Compiled survey data collected will be stored on a password-protected computer for three years. Please print a copy of this letter for your records if you so desire.

Thank you for your time, and if you have any questions, feel free to contact me.
* This survey request has been approved to post by the NDEP Chairs*

Beth A. Young, MA, RD, CSSD, LD

bayoung12@usi.edu

812-228-5151

Dr. Tori Colson tshoulders@usi.edu

812-465-7044

Appendix M: Email Script- Reminder to Complete Survey

Re: **An Examination of the Influence of Training on Dietetic Preceptors' Perception of their Self-efficacy.**
SURVEY REMINDER

If you have already completed this survey, Thank you! If not, I would like to send a friendly final reminder that this survey will remain open until 2/4/2022, and I would greatly appreciate your input. You are invited to participate in a voluntary research study about the relationship between an RD/RDN's level of self-efficacy to competently serve as a preceptor and their level of prior preceptor training. This study is being conducted by Beth A. Young, MA, RD, CSSD, LD, a doctoral student at the University of Southern Indiana, and Dr. Tori Colson, Associate Professor of Teacher Education at the University of Southern Indiana. Your participation would be most appreciated.
Participation includes completing an anonymous, one-time, online survey using Qualtrics. The survey will take approximately 10-15 minutes to complete. Your participation in this research will be completely confidential. You can elect to withdraw at any time during the study. To withdraw from the study, end participation by exiting the survey.

- The only exclusion criteria are if you are NOT an RD/RDN or if you have NEVER served as a preceptor.

If you are an internship or program director and you have contact with the internship program's preceptors that may not be members of NDEP, I am requesting your assistance in sharing the survey link with your internship program's preceptors.
To participate in the study, click on this link:
https://usisurvey.az1.qualtrics.com/jfe/form/SV_bNIRTWCCQ5SvMvc
Outcomes will only be presented in aggregate form, and no identifiable information will be collected. Compiled survey data collected will be stored on a password-protected computer for three years. Please print a copy of this letter for your records if you so desire.

Thank you for your time, and if you have any questions, feel free to contact me.
* This survey request has been approved to post by the NDEP Chairs*

Beth A. Young, MA, RD, CSSD, LD

bayoung12@usi.edu

812-228-5151

Dr. Tori Colson tshoulders@usi.edu

812-465-7044

Appendix N: Informed Consent

UNIVERSITY OF SOUTHERN INDIANA

An Examination of the Influence of Training on Dietetic Preceptors' Perception of their Self-efficacy.

1843949-1

Informed Consent Document
Online or Web-Based Survey

You are invited to participate in a research study to **Examine the relationship between an RD/RDN's level of self-efficacy to serve as a preceptor and their level of prior preceptor training**. This study is being conducted by ***Beth A. Young and the University of Southern Indiana, Teachers Education Department, Dr. Tori Colson, dissertation chair*. Beth A. Young** can be reached at *bayoung12@usi.edu* ***or 812-228-5151.***

This study will take approximately **10-15 minutes** of your time. You will be asked to complete an online survey about **your previous experiences and/or training to be a dietetic preceptor and your level of confidence regarding various skills needed to be a preceptor.**

Your decision to participate or decline participation in this study is completely voluntary, and you have the right to terminate your participation at any time without penalty. Participants can withdraw from the survey anytime by closing the browser or exiting the survey. Participants may also withdraw by selecting "no" to the informed consent.

Your participation in this research will be completely confidential. No identifiable information will be published, shared, or disseminated from this study. **There are little to no risks to individuals participating in this survey beyond those that exist in daily life.**

Confidentiality: No identifiable information will be linked to the survey responses, completed surveys will be assigned a number, and only aggregate data will be reported.

The results of this study will benefit the profession of dietetics by identifying the preceptor training and education needs to increase levels of self-efficacy.

Please print a copy of this consent form for your records if you so desire.