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Perceptions of Directors of Dietetic Internships Concerning Challenges to Meet Accreditation Council for Education in Nutrition and Dietetics Core Competencies

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PERCEPTIONS OF DIRECTORS OF DIETETIC INTERNSHIPS CONCERNING CHALLENGES TO MEET ACCREDITATION COUNCIL FOR EDUCATION IN NUTRITION AND DIETETICS CORE COMPETENCIES

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Approved by
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APPROVAL OF THESIS

We, the faculty supervising the work of **Tim Bender**, affirm that the dissertation, **Perceptions of Directors of Dietetic Internships Concerning Challenges to Meet Accreditation Council for Education in Nutrition and Dietetics Core Competencies** meets the high academic standards for original scholarship and creative work established by the EdD Program in **Leadership Studies** and the College of Education and Professional Development. This work also conforms to the editorial standards of our discipline and the Graduate College of Marshall University. With our signatures, we approve the manuscript for publication.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Competency-based education is used in several healthcare profession educational programs. Competency-based education has been at the forefront of dietetics education for several years and continues to this day. It is used in the undergraduate programs as well as in dietetic internships. The mastery of these competencies reflects the skillset a student or intern has achieved to be ready to advance to the next level. For an undergraduate student, mastery of all undergraduate competencies would indicate the ability to graduate the program and be eligible to apply to a dietetic internship. For a dietetic intern, mastery of all competencies would indicate that the intern would be eligible to complete the internship and would possess the skillsets to be ready for entry level practice as a registered dietitian nutritionist. Mastering these competencies by an undergraduate student takes place in the classroom through education, assignments and experiences. The best-case scenario of the mastery of these competencies as an intern is in the supervised practice field experience with a preceptor. A preceptor is an individual who is considered a professional in their field of expertise. At times, a competency cannot be met in the field and is then met through alternative means. An internship director is responsible for devising strategies to assist the intern in meeting competencies. The purpose of this study was to compare the perceptions of directors of onsite (traditional) and distance internships regarding any challenges they may face in implementing strategies to meet core competencies. This study was based on a non-experimental quantitative and qualitative data collection design utilizing descriptive survey research. During the first phase of the study a pilot study was conducted, given that there were no previously developed surveys available. The second phase of the study included sending out a survey to 35 distance internship directors and 35 to onsite (traditional) internship directors. The results of the study showed that there were three core competencies

among 41 core competencies with significant differences between onsite (traditional) and distance internship directors' perceptions of challenges. The results of this study also showed the many challenges that are faced by distance and onsite (traditional) internship directors who are devising strategies to meet the core competencies. The results of this study also showed no significant differences in the success of graduates of onsite (traditional) and distance internships on the national registration examination for dietitians. The results of this study also showed that many of the onsite (traditional) and distance internship directors perceive that the mastery of core competencies during an internship does not have much influence on first-time pass rates on the national registration examination. This study informs dietetic internship directors or any other healthcare profession educational program that uses competency-based practices as to the challenges that are faced in devising strategies to meet these competencies. This study also informs internship directors of possible strategies to overcome these challenges. This study complements past research studies as it showed that there are quality experiences and successes of graduates of both onsite (traditional) and distance internships.

CHAPTER 1

INTRODUCTION

There is no doubt that when it comes to food intake patterns, there is a global promotion focused on nutrition for optimal health for men, women and children. Registered dietitian nutritionists (RDNs), who are considered the "nutrition experts," play a primary role in promoting healthy nutrition behaviors among the world's population. RDNs can be found practicing these roles in multiple arenas such as critical care, healthcare facilities, community nutrition, government agencies, long term care facilities or offering nutrition education services to youth and their families. RDNs also work in the field of food service management, in areas of research, private practice, sports nutrition and in colleges and universities educating future registered dietitian nutritionists and other future healthcare professionals. Based on personal experience, every day seems to bring new opportunities for the registered dietitian nutritionist. As a matter of fact, the U.S. Bureau of Labor Statistics indicates there is an 11% increase in expectancy for registered dietitian nutritionist jobs between 2018-2028 and reveals that this is a much faster rate of growth than many occupations (Bureau of Labor Statistics, 2019).

Background

The current model for students reaching the goal of becoming a registered dietitian nutritionist (RDN) involves two primary steps. The first step is to complete a baccalaureate degree from an accredited Didactic Program in Dietetics (DPD). The second step is to apply and match to an accredited Dietetic Internship (DI) and complete a minimum of 1,000 clock-hours of supervised practice to be eligible to sit for the national registration exam for dietitians (Academy of Nutrition and Dietetics, 2018). Dietetic internships are hands-on and because of this, the number of internship spots are far less than the number of students graduating with a

baccalaureate degree each year who are eligible for these internship programs. Therefore, dietetic internships are highly competitive. Consequently, the process to becoming an RDN is quite challenging to achieve. Thus, undergraduate dietetic students are informed of just how challenging it can be and are reminded of this on a continual basis by the DPD director and other faculty members throughout the completion of the dietetics undergraduate curriculum.

There are many parameters in which a student is advised to consider throughout their completion of a baccalaureate degree in dietetics to be "marketable" for an internship selection, such as having better than a 3.0 for an overall grade point average (GPA) and dietetic course load GPA. The undergraduate dietetic students are encouraged to obtain volunteer work experience or gain employment experience in a nutrition or foodservice related field and have positive recommendation letters from faculty and employers or supervisors. Some dietetic internships require a competitive graduate record examination (GRE) score, although many internships are moving away from this trend.

Moore (1995) indicated that internship programs are looking for students who possess technical learning skills from undergraduate competencies and have achieved academic success. Onsite (traditional) and distance internships across the country use these two traditional parameters as criteria for selecting interns. Criteria such as competency completion and grade point average have been considered the "gold standard" for the successful student intern. There are, however, many factors that can affect a student's academic success. For instance, how a person learns has been studied for many years by several different researchers and it has been revealed that students can and do learn best through multiple means. The best way one student learns is not necessarily the best way another student learns. The goal of educators, whether

teaching face-to-face or online, should be to create an environment that promotes an optimal atmosphere to accommodate the various learning styles of students.

Since 1927, the educational requirements for obtaining a baccalaureate degree and then completing a supervised dietetic practice internship program have remained unchanged for students wishing to practice as professionals in the field of dietetics (Kicklighter, Cluskey, Hunter, Nyland & Spear, 2012). As is the case in many healthcare disciplines, a professional credential is required for dietetics practice and is obtained by passing the standardized national registration examination for dietitians. The accrediting agency that oversees dietetic programs is the Accreditation Council for Education in Nutrition and Dietetics (ACEND), which requires an 80% first-year pass rate on the national registration exam for dietitians for all dietetic internship graduates within one year of their first attempt.

ACEND has other program standards and outcomes that dietetic internships must achieve as well to ensure student learning and graduate competency. To demonstrate program effectiveness, it is critical that program directors engage in assessment, planning and evaluation of their respective programs. There is, however, a level of frustration among dietetic internship program directors because, although a program may meet ACEND program requirements by the intern accomplishing the competencies, it does not guarantee that the student will pass the national registration exam for dietitians (Burlison Head, 2016). Bradley and Deaton-Conner (1993) indicated that one of the most important aspects of the curriculum review process for dietetic internship programs across the country is related to the success rate of the graduates' passing of the national registration examination for dietitians. Bradley and Deaton-Conner (1993) reported that the successful passing of the exam was not only important for the educators of the internship programs but was also of great concern for the graduates themselves as well as

their current or future employers. This factor has not changed in over twenty-eight years since identified by Bradley and Deaton-Connor. In fact, these statements are still just as relevant today as they were in 1993 and probably more so with the growth of the dietetics profession and the number of dietetic internships across the United States.

Given that there are many comparisons between an onsite (traditional) dietetic internship and a distance dietetic internship, it is important to understand the conceptual framework of both types of internship programs. For the onsite (traditional) internship, the internship director places the dietetic interns into specific rotation sites that have been pre-chosen for their supervised practice. The rotation sites for the onsite (traditional) internship can be in the accredited institution itself such as in many of the hospital-based internships or universities or colleges that have food service programs or grant-based programs. Other rotation locations of onsite (traditional) internships are often located within the proximity of the accredited institution. The internship director often has a close professional relationship with the preceptors of these rotation sites. The dietetic interns of the onsite (traditional) internship often have many face-to-face contacts with the internship director throughout the completion of the internship. Because the rotation sites of an onsite (traditional) internship are generally consistent from year to year, the internship director often can work with the preceptors of these rotation sites on a consistent basis to ensure planned experiences and mastery of competencies.

In a distance dietetic internship, the dietetic interns can be located several hundred miles from the accredited institution. The dietetic interns are responsible for obtaining their own supervised practice rotation sites. The dietetic interns are required to gain approval by the internship director of the selection of all preceptors and facilities to ensure that their chosen rotation sites and experiences will meet the competency standards for the internship. The

internship director of these programs will typically communicate with these interns and their preceptors through such technologies as phone calls, email or through virtual communication. The interns of distance internship programs are often limited to one physical face-to-face contact with their internship director, which happens during their orientation at the beginning of the internship.

Preceptors in both internship programs are responsible for evaluating the interns' achievement of competencies during their supervised practice. It should be noted that the distance internship director does not often have consistent contact with distance preceptors; therefore, the distance internship director does rely a great deal on the evaluation of the distance preceptors for the mastery of competencies. With this said, distance interns are scattered throughout the United States, and some distance interns will complete their internship experiences in urban areas and others will complete the internship experiences in very rural areas. The variance in the populations and resources of rural and urban areas can result in various learning experiences and opportunities that the dietetic interns may have in certain rotations. This situation leads to a great dependence on the dietetic intern and preceptor to work together to determine activities that the dietetic intern can complete to achieve each competency.

Over the last decade, the competency-based education model has been utilized by many different health education programs (ACEND, 2018). This effort has been the trend to help improve graduates' entry level performance into the professional workforce. In the framework of a competency-based education model, the primary goal is to define and measure the progress a dietetic intern makes toward achieving a required competency that is understood to be at a level of "readiness" to perform in the profession (ACEND, 2018). The competency-based education

model framework focuses on the competencies reached rather than simply focusing on the successful completion of required course work or obtaining supervised practice hours.

Competencies across every dietetic internship are standardized and overseen by ACEND. The ACEND *Future Education Model Accreditation Standards* focuses on the need for integration of didactic and experiential learning to develop competence as the standard for the curriculum, and emphasizes that this should occur through both stages of formative (during the experiential learning to provide feedback) and summative assessment (at the end of the experiential learning period) to demonstrate competence of the intern. ACEND uses an adapted version of Miller's Assessment Pyramid, which depicts a pyramid illustration demonstrating the advancement of competence ranging from "knows" to "shows" to "does" in relation to "knowledge" "skills" and "judgment" in practice (ACEND, 2018).

A standard competency level for a new registered dietitian nutritionist is important for every employer looking to hire a graduate from an internship program. Charney and Peterson (2013) stated that entry level dietitians should approach practice in accordance with the expected competency level. This expected level of competence is developed during these dietetic internships across the United States.

There is an old philosophy that states "fake it until you make it," but in this day and age, not being competent in a healthcare position can have a devastating effect. It is essential within the healthcare industry that employees are well trained and possess a certain standard of skill development and competence. Otherwise, there is a particularly high risk for the care management of the clients being served. It is important to note that the term "client" will be used throughout this work but within the field of dietetics the individual receiving services from the registered dietitian nutritionist can often be titled as a patient or customer as well. Any staff

members that are hired by an agency that prove to be ineffective in their skill development and competence can pose financial risks for the employer as well. The National Academy of Medicine (formerly the Institute of Medicine) promotes the necessity of healthcare professionals entering the profession with an entry level of competence provided through higher education as well as the need for the professionals to remain competent in the evolving field of healthcare. The National Academy of Medicine recognizes the need for professionals to build on the basic knowledge and skills acquired during their higher education programs and training (Institute of Medicine, 2010). Therefore, competency-based educational learning is important for ensuring a solid foundational level of the skills and knowledge development of the students during their educational programs that will set the standard for maintaining continued self-awareness of knowledge, skills and abilities as they fulfill the role of an RDN practitioner (Gates & Amaya, 2015).

Career-oriented competencies have become an essential part of many curricular experiences of educational programs in the healthcare field (Koemel, Shafieizadeh, & Farr, 2020). There are many complexities in assessing career skill development within an educational program curriculum. Lacking proper curricular assessment strategies can be one of the biggest challenges for a program. It could potentially lead to inconsistencies in the skill development of each student completing the program and entering a workforce that has certain career-oriented skill expectations of that individual. Having skill deficiencies can lead to a lack of career readiness, career opportunities and even career success (Camara, 2013). Another challenge is the variability in educational experiences received by students in individual programs across the country. This variability is happenstance by way of the culture where the students receive their education as well as the background experience of the educators providing the instruction and the

method of teaching strategies used (Koemel et al., 2020). Holmboe (2015) indicated that even in residency and fellowship programs in medicine, there are challenges in implementing the competencies as a conduit of transformation because many educators have difficulty interpreting the conceptual definitions of the broad competencies and turning them into meaningful curriculum changes or tools that they can use to assess. The same issue occurs across the board in many healthcare related education and training programs. Any one of these can influence the students' competency achievement level as the student moves through the process of education to supervised practice internship experience, and could possibly affect the student's ability to attain the desired career in the future.

Employers are intensely modifying recruitment policies as they look to hire graduates from supervised practice dietetic internships that possess a competence level befitting an entry level RDN practitioner. In 2017, the Academy of Nutrition and Dietetics established the standards of professional practice (SOPP) which serve as a guide for self-evaluation to hold every RDN accountable to ensure the provision of safe and quality practice (Koemel et al., 2020). The National Association of Colleges and Employers (2019) surveyed over six hundred industry employers and found that there are basically eight identifiable competencies that are crucial for the entry level position. These include critical thinking and problem solving, oral and written communication, collaboration and teamwork, digital technology, leadership, professionalism and work ethic, career management and global intercultural fluency. These same attributes are an integral part of the standards of practice (SOP) for dietetics education and during the supervised practice dietetic internship experience (Koemel et al., 2020). The entry level dietitian nutritionist should not only approach the practice with a level of competence but also demonstrate the appropriate competency level through standards of professional practice

(Charney and Peterson, 2013). The Dietetics Career Development Guide as shown in Figure 1 is adapted from the Dreyfus model. The Dreyfus model portrays five levels of proficiency that individuals move through during learning processes as well as through the development of skills. These levels include novice, advanced beginner, competent, proficient and expert (Dreyfus & Dreyfus, 1986). This guide demonstrates the competency level expectation from the undergraduate student to the expert level RDN. Within this framework, the undergraduate student is in the "novice" portion of the diagram where course knowledge and understanding of nutrition principles takes place. The next level is the "beginner" learning phase which includes hands-on experience in a supervised practice dietetic internship. As the diagram demonstrates, the next level is the "competent" level which includes the entry level practitioners who have passed their national registration exam for dietitians and are practicing in the field for a three-year period. The next phase within the diagram is "proficient," which means the RDN now possesses a greater skill level and oftentimes has acquired more advanced credentials through specialization. The next phase is "advanced practice" and is where the RDN continues to practice at an advanced level of knowledge, skills and behaviors. The final phase of this framework is "expert" level, where the RDN continues to build and maintain an advanced level of knowledge and skills. It is professional guides such as this one created by the Academy of Nutrition and Dietetics that provide a standard of professional practice for every dietitian entering the field and those that are practicing in the field. Professional competency measures continue to take place during each of these phases, which will be covered in greater detail later in this chapter.

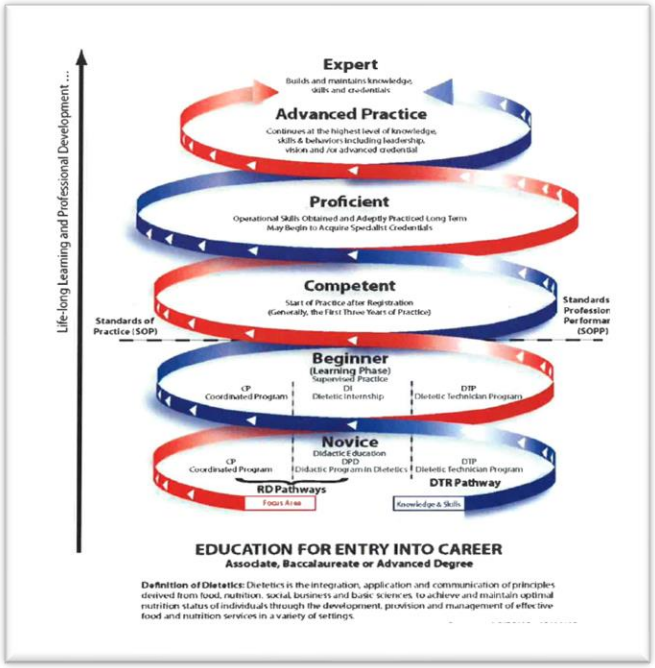

Figure 1: Dietetics Career Development Guide
From a Practice Paper of the Academy of Nutrition and Dietetics "Critical Thinking Skills in Nutrition Assessment and Diagnosis" by the Academy of Nutrition and Dietetics, Retrieved from: https://www.eatrightpro.org/practice/position-and-practice-papers/practice-papers/practice-paper-critical-thinking-skills

As dietetic internships expand across the country, recruitment efforts have become more competitive in order to attract dietetic undergraduate students and graduates to these programs. Offering distance education has changed opportunities for the undergraduate dietetic graduates, allowing the intern to acquire supervised practice experiences in areas close to home where money can be saved as well as promoting the potential to build relationships with agencies in areas where the intern would like to work or live once the internship is completed. Distance internships, however, often compete with onsite (traditional) internship programs in these same communities for rotation sites, so dietetic students or graduates are reluctant to apply to distance programs. Many onsite (traditional) internships develop relationships with rotation sites in the local and surrounding areas. These onsite (traditional) internships contract with local facilities to ensure that the onsite interns get first choice for any rotation opportunities. The reluctance of the

students or graduates to apply to distance internships is understandable as it can potentially make it quite difficult for them to obtain supervised practice experience opportunities in the local area. Many interns entering distance internship programs may have to travel up to two hours a day in one direction to obtain a supervised practice experience rotation with a preceptor that has not contracted with an onsite (traditional) internship program in the area where the distance intern lives.

This reluctance in applying to distance internships by dietetic students leaves the distance internship programs oftentimes competing for students in the second-round intern selection process. These are students who were not accepted by first-round match standards, so it becomes critical that the dietetic internship programs be able to choose the most-likely "successful" students from among the nearly 2,000 students who were not chosen in first-round match. The term "successful" could take on many factors such as having the ability to perform well academically within the graduate setting, having strong analytical and technical skills for rotation site experiences, or passing the national registration exam for dietitians on the first attempt upon completing the internship program.

The national registration examination for dietitians is a one hundred question exam which test takers are given two hours to complete. A weighted score of twenty-five out of fifty is required to pass. As mentioned, all accredited dietetic internships have an outcome benchmark of 80% of the internship graduates passing the national registration examination for dietitians within one year of completing the internship. Many students fail the national registration exam for dietitians on their first attempt as well as on successive attempts. This results in declining pass rates for the respective internships. For example, the overall first-time passing rate for the national registration exam for dietitians fell from 91% in 1999 to 83% in 2009, and then to 70%

in 2019 (Eat Right-CDR, 2020). Although a few students may pass by their third or fourth attempts, many are faced with the challenge of never passing the national registration exam for dietitians. When examining the results of repeat test takers, CDR reports that in 2016, 50% still failed their attempts and in 2017, it jumped to 70% failing their repeated attempts (Eat Right-CDR, 2020). This has created a dire need to determine the underlying reasons so many students fail to pass the exam. There have been a number of other professions such as nursing which have seen similar incidences of recent graduates failing their first-time attempt at registration exams. Researchers have examined a multitude of reasons as to why students are struggling and have identified test anxiety, timing of their exam completion, critical thinking ability and course grades as areas of concern (Taylor, Loftin, & Reyes, 2014). Researchers evaluating these factors of first-time failures have yet to come up with a single strategy that can ensure success on the national nursing registration examination (Serembus, 2016). Because the national registration exam for dietitians is updated periodically based on practice analysis, educators are constantly faced with challenges to help better prepare students for passing the exam. Serembus (2016) noted that tools for success could include programs to administer exit examinations as a "high-stakes test," which is an exam that students must pass before being recognized as completing all requirements of the respective program.

Several researchers have evaluated the admission criteria that many internship programs utilize in the intern selection process to predict a student's success on passing the national registration exam for dietitians (Farkas, Gregoire, Lafferty, & Hartney, 2010; Bode & Gates, 2001; Haubrick & Ross, 2015; Fournet & Harrison, 1994; Bradley & Deaton-Conner, 1993). This includes such criteria as a student's undergraduate overall grade point average, the student's DPD grade point average, grades in sciences courses as well as scores on academic tests such as

the GRE. Internship directors have been asked as to how they would rate such items as undergraduate grade point average, professional course grades, letter of recommendation and GRE scores on a scale from most to least important. Given a 91% response rate of the internship directors that participated in the study, the most important ratings were applicants' grade point average, success in professional and physiological/biological science courses, and any former employment in the related area of dietetics (Carruth & Sneed, 1990). Perhaps this is why over the last three decades more and more internships are not requiring GRE scores for admission criteria for their respective programs. Moore (1995) indicated in her analysis that many preprofessional educational program leaders view success in science-related classes as the most crucial factor in admission criteria as it requires not only that the student be intelligent but also that the student has the tenacity to work hard and succeed in the class. Likewise, Pope and Gines (1986) evaluated predictors of success of passing the registration examination for dietitians and found that preprofessional science grades and overall GPA were significant predictors of success more than anything else. In comparison, when considering nursing graduates and their successes on passing their board exam, several studies have determined that nursing theory and clinical GPAs were the best predictors of success (Horns, O'Sullivan, & Goodman, 1991; Hendryx, 1991; Fowles, 1992). Other researchers have evaluated the value of experiential learning as a factor for success not only in dietetics but also in many other health-related fields. One study found that past graduates perceived their success to be due to the experiential learning that took place during the completion of their dietetic internship programs (Barr, Walters, & Hagan, 2002). These studies and others demonstrate that there are indeed many factors that relate to the success of graduates on their registration examination – so much so, that even after three decades later, researchers are still debating the predictors of success.

Even though there is great debate regarding predictors of success for the first-time pass rates on the national registration exam for dietitians, there is agreement among dietetic internship directors that outcomes measured by way of ACEND core competencies should prepare the intern for success for entry level practice as an RDN. These core competencies are defined under four Domains. Domain 1 covers competencies related to scientific and evidenced-base practice through integration of scientific information and translation of research into practice. There are six identified competencies to be achieved by the intern under the Domain 1. Domain 2 covers competencies related to professional practice expectations by way of beliefs, values, attitude and behaviors for the professional practice level of a dietitian nutritionist. There are fifteen identified competencies to be achieved by the intern under Domain 2. Domain 3 covers details of the competencies related to clinical and customer services through ensuring the intern possesses hand-on experience in the development and delivery of information, products and services to individuals, groups and populations. There are ten identified competencies to be achieved by the intern under Domain 3. Domain 4 covers competencies related to practice management and use of resources by ensuring a competence level to implement strategic application of principles of management and systems in the provision of services to individuals and agencies. There are ten identified competencies to be achieved by the intern under the Domain 4. Interns of dietetic internship programs are evaluated on each individual competency that falls under these four Domains.

Statement of the Problem

There are many healthcare professional education programs that are evaluated by the passage of national registration exams. There is much research on national certification exams for programs such as nursing, physical therapy and medical school but there are significantly

fewer bodies of research that exist for dietetic internships. Competency is vital for every entry level position for any of the aforementioned professions as well as dietetics. Every program is being held to higher standards to ensure competency of graduates for entry level positions. Employers are now conducting interviews and hiring based on competency. National certification exams, like the national registration exam for dietitians, are designed to determine a graduate's competency. It is more vital now than ever to determine the perceptions of directors of internship programs related to challenges in meeting competencies. The problem is that there is limited information concerning internship directors' perceptions of challenges in implementing competencies for student learning and student success on dietetic internship competencies.

Purpose of the Study

The future of the dietetics profession is quite exciting as the dietetics profession continues to branch out into new areas thus creating new opportunities for the most recent graduates from internship programs across the United States. To be marketable for these positions, these new graduates must take their national registration examination for dietitians and pass it on the first attempt. The growth of opportunities in the dietetics profession begets more notoriety of the dietetics practitioner. The governance members of the Academy of Nutrition and Dietetics continue to increase standards of practice every few years as to the expected competence level of not only professionals in the field of dietetics but also entry level RDNs. In fact, the Academy of Nutrition and Dietetics has ruled that starting 2024, all entry level RDNs must possess a master's degree to be eligible to sit for the national registration exam for dietitians. One recent study compared bachelor's level success on first-time past rates with that of master's level first-time pass rates on the national registration exam for dietitians and found that graduates with master's degrees had higher first-time pass rates (Leonberg, 2017).

As indicated, there has been an increased number of students who are failing the national registration exam for dietitians on their first attempt, thus creating difficulty for them to acquire jobs and for employers to hire for job postings. It is the goal of all internship programs to train and prepare every intern for a successful future in the field of dietetics. The purpose of this proposed study focused on the core competencies of the dietetics supervised practice internship as set by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) and whether there are any challenges in implementing these internship core competencies by the directors of both distance and onsite (traditional) internships.

Research Questions

The study focused on director perceptions of the challenges of implementing dietitian program core competencies and relating that to student success on the national registration examination for dietitians.

RQ1: Is there a significant difference in perceptions of dietetic internship directors from onsite (traditional) and distance internships related to challenges in implementing competencies for dietetic internships?

RQ2: Is there a significant difference in first-time pass rates on the national registration examination for dietitians between graduates of distance dietetic internships and onsite (traditional) dietetic internships?

RQ3. What are the perceptions of dietetic internship directors related to student learning of the ACEND Core Competencies and the influence on first-time pass rates on the national registration examination for dietitians for graduates of onsite (traditional) internships and/or distance internships?

Significance of the Study

The findings of this research provided a prime example of means for success and strategies to overcome challenges for many post-graduate health profession programs that require supervised practice experience internships that require competency achievement and whose programs are evaluated by a standardized requirement of first-year pass rates on national registration exams. Most literature in this area focuses on leadership strategies and teaching strategies by the faculty. This proposed study focused on the competencies of the dietetics supervised practice internship as set by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) and reported challenges met by the directors of these internship programs in implementing learning strategies for these competencies and relating this information to student success in passing the registration examination for dietitians on first attempt. It is vital to understand the impact of outcomes in relation to the student attending a distance dietetic internship versus an onsite (traditional) dietetic internship. This is valuable information as most health profession programs are held accountable for their students' success in passing these types of exams. These programs need to know what is contributing to the decline in first attempt pass rates and challenges that many directors are facing in carrying out specific requirements established by accreditation agencies.

Limitations of the Study

Numerous limitations may have affected the outcome(s) of this research. One of those limitations related to the representativeness of the sample. The participants who responded to the survey questions were not truly a completely random sample, which limits the potential for generalizability of results. The sample size of this research study also affected generalizability. The number of respondents to the survey was small, which made it more difficult to identify

significant relationships from the data recorded. Another limitation was that there have been limited previous research studies on the topic of the current research. While the literature review identified similar health professions that require national registration exams, there is a question as to whether they are relevant to the topic of this study.

The findings of this research study were limited to the perceptions of specific dietetics program directors who responded to the survey rather than being generalizable to the larger population of directors, and directors who responded may have done so out of a particular attitude, either positive or negative, toward the national registration examination for dietitians. Also, while the researcher's own professional experience within the field can provide an experiential background to aid in understanding respondents' perceptions, it can also be viewed as a limitation in that it is a potential source of bias.

Methods

This research was conducted utilizing a mixed methods methodology. Data for the study was obtained from an online survey developed by this author. This online survey was piloted to ensure quality and usefulness of the survey. The pilot survey was sent to two onsite (traditional) internship directors. The pilot survey results led to necessary modifications. Once the modifications were made, the online survey was sent to internship directors from onsite (traditional) and distance internships. The advantages of using a survey method for collecting data for the research study outweighed any disadvantages. The advantage of using this method included not only the relevance of the information but also the depth of information that was obtained that can be used by program directors not only in the field of dietetics, but also quite possibly other related professional fields who have similar types of programs such as nursing,

pharmacy, physical therapy, and medical school. Draugalis, Coons, and Plaza (2008) indicated that survey research is frequently used in healthcare professions and education.

As of May 2021, there was a total of 263 dietetic internship programs across the United States that enrolled 4,872 students and were managed by internship directors. Thirty-five of these programs were a distance internship and the remaining were onsite (traditional) internships. The sample consisted of internship directors from 35 onsite (traditional) internships and 35 distance internships from across the United States (N=70).

The study design consisted of an online survey submitted to internship directors from 35 onsite internships and 35 distance internships across the United States. IBM SPSS software, version 26 was used to analyze the survey data. This data, although small, required a Chi-Square model approach for testing significant differences between the two groups.

CHAPTER 2

LITERATURE REVIEW

A competency is a general statement that refers to a standard of applied skills, knowledge and behavior that a student should possess as they exit an educational program. Mastery of competencies gives oneself the expectation of promoting success as they enter a higher level of education or the professional field (Hartel & Foegeding, 2004). The U.S. Office of Personnel Management (2020) defines competencies as a synthesis of characteristics such as skills, knowledge, abilities, attitudes or behaviors as well as any other characteristic that may prove beneficial for an individual to perform their duties or occupational functions in a successful manner. The U.S. Office of Personnel Management goes on to explain that a competency defines the "how" within the occupational functions or basically what the individual needs to do their job successfully.

Supervised Practice Dietetic Internships

Some research has gone into evaluating the effectiveness of distance internships as compared to the onsite (traditional) internships. A study by Post, Casper, Wrobleski & Kock (2006) was conducted to determine whether distance internships are as successful in preparing entry level dietitians as onsite (traditional) internships when examining for knowledge and skill gained as well as perceived preparedness of the graduates from the two separate programs. In this study, the researchers used an online questionnaire to survey 2004 and 2005 distance-based and onsite dietetic internship graduates. The questionnaire obtained information pertaining to the national registration examination for dietitians pass rates, post-internship employment, perceived adequacy of resources, guidance, and communication and preparedness for an entry level dietetics practitioner. There was a 13% response rate with 72% of the respondents being from an

onsite (traditional) dietetic internship program. The results of the study demonstrated that distance student-intern graduates were as equally likely to pass the national registration examination for dietitians on their first attempt and to begin employment as a registered dietitian nutritionist or attend graduate school to obtain an advance degree as the student-interns who graduated from the onsite (traditional) dietetic internships. The final statement of the researchers indicated that the findings of their study showed evidence of the success as well as the continued need for the growth of distance education internship programs (Post et al., 2006). It is through evidenced based studies such as this one that dietetic practitioners and educators are able to see and understand that there is as much value in distance dietetic internships as there are in onsite (traditional) dietetic internships. The gap in this study is determining whether the success of these students passing the national registration examination for dietitians on first attempt is due to educational background knowledge or through competencies achieved through experiential learning during the internship programs themselves. It begs the question, are the competencies identified and required by ACEND for career readiness providing the graduates with a level of readiness for success on the national registration examination for dietitians on their first attempt?

A study that was completed by Marywood University's dietetic internship program, used a retrospective cohort design comparing student-intern outcomes between those completing the onsite (traditional) internship track and those completing the distance internship track. The main purpose of this study was for quality improvement (QI) by evaluating the two tracks through comparing graduate student-intern outcomes on the national registration examination for dietitians. The retrospective data included such things as the first-time pass rates as well as the actual score obtained on the national registration examination for dietitians, what the undergraduate overall GPAs and DPD GPAs were among the students enrolled in the onsite

(traditional) track and distance internship track at Marywood University from 2010 to 2016. There were 72 traditional onsite internship students and 96 distance internship students compared in the study. The results found that regardless of whether the student-intern was enrolled in the distance internship track or the onsite (traditional) internship track, it was the students with the higher incoming undergraduate overall GPA and DPD GPA that were most likely to pass the national registration examination for dietitians on the first attempt. The researchers reported that the best way to evaluate the issues addressing the non-academic factors affecting first-time pass rates of the national registration examination for dietitians is to focus future research on such exterior factors. The researchers also reported that it would also be beneficial to survey students from onsite (traditional) and distance internships and compare their personal experiences in preparing for and taking the national registration examination for dietitians (Pool, Bodzio, Minkoff, & DellaValle, 2016). The gap in this study lies within the researchers only evaluating the parameters of enrollment qualifications for the distance and onsite internship tracks. More research is needed to determine if there is a relationship between the required ACEND competencies to be mastered during the internship experiences and any promotion of success on the national registration examination for dietitians.

Supervised practice experiences are seen in many healthcare professional education programs. Each one of these programs are held to certain benchmark standards. Benchmark pass rates on national certification examinations are important to not only dietetic internship programs, but nursing and other healthcare education programs as well. When programs are held accountable by accrediting associations and state licensure boards, it is vital that programs meet and maintain established benchmarks that are set by these respective organizations (Quin, Smolinski, & Peters, 2018). If these benchmarks that are competencies within the dietetics

internships are vital, then it stands to reason that these would prove beneficial for not only career readiness but also for the national registration examination for dietitians. Another factor that comes into play with the importance of maintaining established benchmarks is student enrollment and preventing attrition rates. Many dietetic internships and nursing education programs experience declining numbers in student applications and enrollment due to reluctancy of the students to apply because of the low pass rates on these national certification exams by previous graduates.

Related Challenges in Nursing Programs

As indicated, nursing schools deal with this same issue because the first-time pass rate on the National Council Licensure Examination of Registered Nurses (NCLEX-RN) has also experienced declining passing rates which has serious implications for nursing education programs across the country. The NCLEX-RN is designed to measure the competency level of the nursing program graduates (Bonnis, Taft, & Wendler, 2007). Simon, McGinnis and Krauss (2013) reported that in 2013, around 3,000 graduates of nursing programs were failing the licensure exam on first attempt. In the latest 2020 reports, spanning from January 2020 to September 2020 from the National Council of State Boards of Nursing (NCSBN), nearly 20,000 graduates failed the first attempt of the NCLEX-RN and nearly 19,000 graduates who were repeat test-takers of the NCLEX-RN also failed the exam again (NCSBN, 2020). This is a tremendous decline in first-time pass rates from 2013 to 2020. This is quite similar to the decline of first-time pass rates of graduates of dietetic supervisory practice internships. The question remains as to what influences first attempt pass rates on the national registration examination for dietitians? Many researchers continue to focus their studies on the success of first attempt pass rates on the national registration examination for dietitians based on the success of a student-

intern's undergraduate educational success coming into an internship rather than researching the aspects of competencies acquired through supervised practice experiences during the internship. Serembus (2016) reported that the NCLEX-RN is updated based on a triennial practice analysis and with these updates, are increases in benchmark standards. The combination of such practices results in several challenges for nursing education programs. This is again, a similar issue that is seen when compared to the national registration examination for dietitians. The national registration examination for dietitians is updated periodically based on practice analysis, thereby making it challenging for supervisory practice internship directors to keep abreast on best strategies to prepare the student-interns for taking and passing the national registration examination for dietitians on the first attempt.

Researchers continue to search for the predictors of success for nursing education programs to meet established benchmarks such as first-time pass rate expectations. Simon-Campbell and Phelan (2018) explored the impact of student success with the use of a strategy known as "adaptive quizzing (AQ)." The adaptive quizzing allows for students to receive ongoing practice examinations and feedback as an addition to other practiced learning methods of the nursing education programs. Their findings supported the strategy of the adaptive quizzing methods as a complimentary competency building method for the students. Cox-Davenport and Phelan (2015) also demonstrated that this strategy, when utilized as a complimentary method, contributed to first-time pass rates on the NCLEX-RN. There are many dietetic internships that implement a strategy of providing "practice RDN exams." Some dietetic internship directors use practice RDN exams that have been developed by CDR while other dietetic internship directors may use practice RDN exams that they personally developed. The purpose of these practice RDN exams is for the student-interns to become acquainted with the testing procedures and the

critically thinking skills that are necessary to pass the national registration examination for dietitians. This author could find no research evidence evaluating the success of such practices in onsite (traditional) or distance dietetic internships and its influence on first attempt pass rates on the national registration examination for dietitians.

Carrick (2011) indicated that systems theory effectively demonstrates the issues related to student success and passing of the NCLEX-RN. According to Carrick, it is the result of the nursing education system and the students' learning system. It was determined that nursing education programs need to place emphasis on multiple education strategies to influence students' learning outcomes and competency for success in first-time pass rate of the NCLEX-RN. Just as with dietetic education programs, supervisory practice internships and nursing education programs, there are no parsimonious set of predictor variables for ensuring student success and increase in first-time pass rates for program graduates on their certification examinations. There are so many variables that can affect a graduate's first attempt pass rate on a national certification exam from knowledge gained from undergraduate versus graduate education, supervised practice experiences, study skills, to test anxiety. There is certainly a gap in exploring several of these factors but more than anything, it is important to look at accrediting bodies and examine standards that have been established for each program to achieve as these are likely the areas that will reflect competency for not only career readiness but also success on national certification examinations as well.

Another research approach to predict success for nursing students on the NCLEX-RN was evaluating it from a KATTS (knowledge base, anxiety control, test-taking skills) framework approach (McDowell, 2008). According to McDowell, it is these three components that can lead to a graduate passing the certification examination on first attempt. "By strengthening not just

one but all of these components, graduates can improve their overall test scores significantly" (McDowell, 2008, p. 183). The imagery used is in this approach is the use of an equilateral triangle with each side representing one of the three aspects. The author states that if even one level is pushed beyond another or one is lacking, it no longer represents the "balance" that is needed for success. This approach has been used since the early 1990's for remedial tutoring programs specifically for the NCLEX-RN. The knowledge base comes from receiving the foundational information and successful completion of a nursing education program. Active anxiety control is achieved through several methods such as using self-calming techniques for stress-management, maintaining guided imagery or visualization of succeeding, participating in study groups and completing practice questions to increase comfort levels of taking such exams. Test-taking skill development occurs by way of scheduling study time for preparation and by completing between 2,000 to 4,000 questions from review courses to continually test analytical or critical thinking skills. McDowell reported that utilizing such methods proved effective showing an increase of 77% pass rate in 1998 to average of 97% from 2001-2006. These statistics are remarkable and encouraging to see that such strategies can make an impact in pass rates on a national certification examination. Although there was no research found in these areas focusing on dietetic internships specifically, it stands to reason that an internship director could adapt such strategies to their own internship to determine if there could be an effective impact on their own first attempt pass rate success. Yet again, however, there is no evidence that examines competency achievement as a factor in success of first attempt pass rate. This is still an area that needs to be explored not only in dietetics but also in other healthcare educational programs.

Related Challenges in Clinical Lab Science Programs

Clinical Lab Science (CLS) is another healthcare field related to dietetics where the student is expected to complete undergraduate work and then is required to complete clinical supervised practice for competency development and entry level professional positions. Many CLS programs have adopted distance education practices in many programs across the country. Two relevant studies compared the CLS program graduate certification examination scores of graduates from traditional CLS programs with those receiving online instruction. Both studies demonstrated that the online graduates performed just as well on the certification examination as the graduates of the traditional face-to-face programs (Russell, Turnbull, Leiback, Pretlow, Arnette, & Ranne, 2007; Hansen-Suchy, 2011). It is encouraging to note that so many healthcare programs are experiencing comparable success rates between their online (distance) and onsite programs. No one can dispute the fact that knowledge obtained through education is vital to the success of a graduate's ability to pass a national certification examination but are there other factors involved in this success? Does the supervisory practice experience and the competencies gained through this experience have any relationship to the success of a graduate's first attempt pass rate on a national certification exam? This is another study that does not explore this area even though post-graduate supervisory practice experience is required to sit for CLS's national certification examination.

Related Challenges in Physical Therapy Programs

Physical therapy education programs are very similar to dietetics as well in their approach to educate their doctoral students. These programs also require their students to obtain supervisory practice experiences for competency development for entry level professional practice. These programs also have benchmarks as indicators for quality education and one of

these are performance on the National Physical Therapy Examination (NPTE) (Mohr, Ingram, Hayes, & Du, 2005). In their research design, Mohr et al. (2005) surveyed 132 directors from accredited physical therapy education programs about their respective programs. The surveys were then match with pass rates of the NPTE for that specific program. The researchers examined program characteristic variables to determine any predicting relationships on each of the program's pass rate percentages. The researchers identified that a program's pass rate is dependent on several factors such as the quality of the educational program as well as its faculty. One limitation of this study identified by the researchers was that much of the programs' pass rates are based on the individual student's characteristics, which was not accounted for in this study. Undoubtedly, this could be a limitation in any study looking at a national certification examination and a graduate's success. Although there are limitations that a researcher may understand even prior to conducting their research, it is important for directors to explore areas of their respective programs to understand how effective the strategies that they implement are in promoting the success of their graduates. This study aims to take such factors into account and to explore an area that may very well be a catalyst for further research in the field of dietetics and other healthcare fields as well.

There is research lacking in the field of dietetics that uses a comparative approach on graduates who passed the national registration examination for dietitians on their first attempt versus those who failed on their first attempt. There is also research lacking in the field of dietetics between the critical thinking skills of those who passed the national registration examination for dietitians on first attempt versus those who failed on their first attempt. Researchers in nursing have also recommended these same research efforts to be made for determining first-time pass rate predictors for the NCLEX-RN. Vandenhouton (2008) suggested

that comparative studies be implemented to determine graduate success for first-time pass rate with those graduates who failed on the first attempt. Romeo (2010) recommended that studies should evaluate whether there is a statistical relationship between the critical thinking skills of those graduates who pass the NCLEX-RN on first attempt with those who fail the NCLEX-RN on the first attempt. These research topics are the drive of focus for this study in determining the perceptions of internship directors regarding challenges in meeting competencies by interns of distance internships versus interns of onsite (traditional) internships.

Challenges of Dietetics Supervised Practice Internships

When examining the requirements for supervised practice internships in dietetics, ACEND requires that student-interns receive a minimum of 1,000 clock hours of supervised practice. Supervised practice dietetic internships are given the freedom from ACEND to have their own program design if it meets ACEND's rigorous and professional requirements. This allows every supervised practice dietetic internship across the country to have its own design and flare. ACEND requires every supervised practice internship to have an "emphasis or focus area" (ACEND, 2020). This, again, makes every dietetic internship experience a bit different from one another. Most supervised practice dietetic internships take eight to twenty-four months to complete. One of the main challenges for dietetic internship directors is the responsibility of coming up with strategies to meet the very broad ACEND core competencies. Designing innovative strategies to help the student-interns not only meet the ACEND core competencies but also possess the competent skill level to implement or practice them as they move into entry level positions is a major undertaking that takes a lot of planning and consideration depending on the rotation, preceptor and facility capabilities (Sheehan-Smith & Poe, 2016). It is these same

competencies that should prepare a graduate for the critical thinking skills necessary to pass the national registration examination for dietitians on first attempt.

There are 263 supervised practice dietetic internship programs across the country but, as mentioned, getting into a dietetic internship is competitive. It is important to note that not all students who apply are accepted each year (Sherry, 2015). Sherry (2015) indicates that based on ACEND data, only 50% of students who apply to a supervised practice dietetic internship are admitted each year. Dietetic internships struggle to find preceptors who will take the time and effort to train the RDNs of the future and, therefore, makes it difficult to take on any more student-interns than they already have in their respective programs. It is likely that directors of supervised practice dietetic internship programs would agree that it is the preceptors who make or break the internship experience.

Some researchers have completed retrospective studies looking at the American College Testing (ACT) performance, undergraduate and graduate level GPA as well as GRE scores (Suckow, Brahler, Donahoe-Fillmore, Fisher, & Anloague, 2015; Serembus, 2016; Pool et al., 2018). Other researchers have explored the relationship of first-time pass rates with the use of simulations and internship experiences. Some research and conference discussions from dietetics and other healthcare professions such as physical therapy and nursing have addressed many variables to success. These variables include student competence, critical thinking and clinical reasoning, the individual student learning needs, exam prep-courses and use of prep-course material for studying that is specialized for this exam as well as perceived confidence going into the exam testing center. Some of these studies have found correlations with nearly every one of these variables showing increase factors for first-time pass rates on the exam (Suckow et al., 2015; Serembus, 2016; Pool et al, 2018). For example, one study investigated whether

relationships existed between critical thinking, overall academic performance in Doctor of Physical Therapy programs and scores on the NPTE. The researchers found that graduates with lower critical thinking abilities had a 100% failure on the first attempt on the NPTE and these same graduates scored significantly lower when compared to other graduates who possessed moderate to high critical thinking abilities (Suckow et al., 2015). For the NCLEX-RN, science GPA was one of the most consistent factors to predict success for first-time pass rates (McGee, Gramling, & Reid, 2010; Penprase, Harris, & Xianggui, 2013). Carr (2011) and Serembus (2016) describes the effect of standardize examinations that allow student-nurses the opportunity to take practice NCLEX-RN exams as providing an improved first-time pass rate on the NCLEX-RN. The development of an "end program course" provided to nursing students has also been found to increase first-time pass rates on the NCLEX-RN (Frith, Sewell, & Clark, 2005; Sifford & McDaniel, 2007). In another study, 860 students in 35 dietetic internships used a series of computer-assisted simulations for a medical nutrition therapy course to determine if there would be any enhanced learning capabilities and if this could lead to increased success on the national registration examination for dietitians. Forty-three students released their scores to be identified for the research. There were eight from the experimental group who participated in the simulations and 35 from the control group who did not complete the simulations. The results showed that there were no significant differences; however, the experimental group did score higher than the control group on the national registration examination for dietitians and scored higher than the national averages for that time period (Evers, Turner, & Bell, 2004).

Each of these research studies help to impact deeper discussions and further knowledge in causal relationships of first attempt pass rates on national certification examinations. As can be seen, there are a multitude of factors that can influence a graduate's success for passing their

respective national certification examinations on the first attempt. Of all these aforementioned studies, an area that is again untouched is whether competency plays a part in this same process as all of these other factors that have been studied. Another area that seems to be missing is collecting data on the perceptions of directors of these programs as to any challenges that may be experienced in finding strategies to help interns meet competency standards.

Distance Education and Technology used in Dietetics

Distance education refers to a format in which a student can be educated separated from their instructors and peers. Distance education can be provided and experienced in many ways. Even though distance education has been a delivery format for nearly a hundred years, it has gained momentum and popularity within the last two decades due to the advancements of the internet and communication technologies (Gould, 2020).

There are many benefits for distance education. The most noted benefit for most students as well as faculty is convenience (Hofmann, 2002). A distance education program offers accessibility to individuals that may not have had the chance to attend an onsite (traditional) program due to job or family responsibilities. It also offers flexibility to learn from anywhere and not be tied down to a specific location. Olson and Wisher (2002) argue that features of distance education such as the use of several formats of media, self-pacing, active learning, and formative feedback can increase opportunities for learning. Some students, for example, learn from visual stimuli or interacting with a computer or simply just listening to lectures. If a distance education program was designed in a format that offered multiple combinations of interaction to seize upon different learning methods of students, it is likely to provide an optimal learning atmosphere. Additionally, many students may choose a distance education program due to the rising cost of

transportation and housing. Having the ability to stay in an area where the student may have a family or a job, allows them the opportunity to save on cost (Allen & Seaman, 2008).

As there are many benefits, there are also known barriers for distance education as well. Some students need more structure than an educational format that requires self-paced learning. Students may have a lack of motivation to maintain the workload. There is often a high dropout rate within distance education programs due to the lack of support or services from the education staff. Students who do not receive feedback, can lose interest in the class or become frustrated and can potentially lead to poor performance or drop out. Some barriers in distance education are related to the lack of technical skills exhibited by the faculty. Some faculty members struggle with new technology advancements, which can lead to poor job performance (Maddux, 2004). There is a great deal of time that is devoted to course development for distance education and because many students feel more comfortable communicating electronically, there can be increased time spent providing greater levels of feedback (Brown, 1998).

Cline (2012) examined the baseline knowledge of students completing on-campus internship programs versus those completing a distance internship program and found that there were no distinct differences in baseline knowledge between the two programs. This has been the same result for other studies comparing students who attend distance internship programs with students in the onsite (traditional) internship programs (Post et al., 2006; Pool et al., 2016). These studies help to show that students can learn online just as effectively as they can in person. This level of knowledge assists a great deal in the model of this research as this study does not have to focus its attention on the online format of baseline education but rather on the impact of the competency gained through the internship experience and determine any relationship with first attempt pass rates.

There are many factors involved in student learning and how a student learns. Many students who enroll in college and universities currently have grown up accustomed to the use of advanced technology and are therefore more comfortable in using it as a learning method and may actually have a learning preference to an online or distance method rather than the traditional onsite face-to-face classroom interaction (Brooks, 2009). The technological age in which we live has indeed influenced the learning capabilities of students and are more comfortable incorporating technology into their lives (Sandars & Morrison, 2007)

Student success is of utmost concern for educators who are teaching any student but especially for students in a distance education program. Student characteristics has many contributing factors to how successful they can be when participating in online instruction. One study found that student success in distance education is mainly dependent on the student's self-discipline as well as the need for increased interaction between students and faculty when compared to students in traditional classrooms (Desai, Hart, & Richards, 2008). Other qualities identified that are necessary for success in distance education is a student who is an independent learner, one who has good time management skills as well as good verbal and written communication skills (Brown, 1998).

The emergence of distance education in other healthcare related fields such as nursing or clinical laboratory science are very similar to those in dietetics. In dietetics, there is a need for more registered dietitian nutritionists in the field and there is a need for greater number of internship programs providing spots for students who are graduating with a bachelor's degree in dietetics who can match to an internship program. There are many skilled healthcare workers out in the field who have advanced degrees such as a bachelor's or master's and therefore have greater critical thinking skills which has been shown to result in a decreased mortality rate across

the United States (Smith, Passmore, & Fought, 2009). Due to the advancements in technology allowing for distance education, there is a number of individuals who have not been matched to a dietetic internship program and have been working in the field of nutrition and dietetics since completing their bachelor's degree to now have an increased chance of being accepted into a distance internship program and advancing their degree and profession. The same is true for nursing and clinical laboratory science who have individuals who graduated with an associate degree who are in the field working and distance education has made an opportunity for them to return to the classroom and advance their education (Smith et al., 2009).

Summary

As demonstrated in this chapter, the term "competence" can be defined or described in several ways. Competence, in a most elemental way, is the ability of the RDN practitioner to provide safe and reliable services to the patient, client or customer in a consistent manner (O'Toole, 2003). Competence is not something that is achieved, and the individual has it forever. Instead, an individual's competence may necessitate reassessment due to future situations that may arise. (Eva, Bordage, Campbell, Galbraith, Ginsburg, Holmboe, & Regehr, 2016). For example, an RDN may feel competent in providing education on heart health but then new research dispels older education philosophy and therefore the dietitian finds themselves learning new nutrition science principles related to heart health education. Competence is multi-dimensional as it changes in the elements of time, experiences that are taking place and based on the setting (Eva et al., 2015). Competence within the field of dietetics has been a topic of conversations for decades and there is an accumulation of evidenced-based research that addresses this topic and shows the value of competence not only in education, but in every professional practice area in the field of dietetics. Gates and Amaya (2015) indicated that every

individual working in the field of dietetics is ethically obligated to maintain competence in practice. This raises an awareness that competence is not only an educational standard to be achieved but is extremely vital for professional ethical behavior. It is necessary and vital that the next generation of RDNs are equipped with the competency, knowledge and skillset in entry level positions to be able to handle and evolve the changing dynamics of nutrition and medical science as it is like "being able to change a tire on a moving vehicle or building a ship while sailing" much of the time. Imagine an athlete saying, "put me in coach…I am ready", but the coach knows that this athlete does not have the skill that is needed for the next play. This is exactly what frame of mind many student-interns are in. They are pumped and ready to get started on their career but as a supervised practice internship and a preceptor, who are truly coaches as well, have the experience to realize that the student-intern must acquire competence to truly "be ready" for the "next play" or entry level positions of an RDN.

There is a future education model that will soon be required of all DPD and DI programs which will be even more competency-based for curriculum and learning experiences than the current existing standards and these will be implemented throughout the undergraduate and graduate level program as well as the supervised practice internships. It will be more than just students completing tasks and checking off things but rather showing that the student is using critical thinking, assessing, evaluating and reflecting on their skill and completing the task while looking at the situation and environment.

This study adds to the existing body of research targeting competence in the form of knowledge, skill, attitudes, behavior, abilities and any other characteristic that promotes the success on the first-time pass rate of the national registration examination for dietitians so that the graduate can potentially have success as an RDN. This was accomplished by surveying

directors from onsite (traditional) and distance internships and examining their perceptions of challenges that are faced when designing and implementing strategies to meet competency standards.

CHAPTER 3

METHODS

Introduction

To be a registered or certified practitioner in many healthcare professions requires the passage of some form of national examination for registration or certification. Although there is compelling research targeting the pass rates of such exams, there is limited research available in educational programs that evaluates the comparison of gained "competency" and its role in success on first-time pass rates for graduates. The purpose of this study focused on the competencies of the dietetics supervised practice internships as set by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) regarding onsite (traditional) and distance internship directors' perceptions related to any challenges there are with implementing or carrying out strategies to help the interns meet the required competencies. This chapter provides an overview of the research design, data collection procedures and data analysis methods that will be used in the study.

Research Design

There is limited research on studies concerning director perceptions of challenges in implementing student learning strategies to meet competencies and relating that to student success on the national registration examination for dietitians. This study consisted of three research questions with a target population consisting of internship directors from onsite (traditional) and distance programs.

In order to investigate the perceptions of the participants and address these three questions, the research design for this study used a mixed methods descriptive study that incorporated quantitative and qualitative data. Rather than examining a cause-and-effect

relationship, using descriptive statistics allowed for an understanding of what exists regarding the perceptions of the directors of each program. Descriptive studies play a vital role in educational research. Descriptive statistics have the potential to obtain rich data that can possibly lead to important recommendations. A common data collection procedure used in descriptive research is surveys.

One online survey was utilized for this research study. This survey was a researcher-generated survey. Survey-design studies are a valued tool for research and allows for convenience and flexibility (Keough & Tanabe, 2011). Draugalis, Coons and Plaza (2008) indicated that survey research is implemented frequently and effectively in health education research. It is for this reason, that a survey design was chosen for this research method.

A common goal of survey research is to gather information representative of a population and it is from a drawn sample that a researcher can generalize the results back to the population (Bartlett II, Kotrlik, & Higgins, 2001).

This study utilized a mixed methods approach. A mixed methods approach was defined by Tashakkori and Teddlie (2003, p. 711) "as a design in which mixing of QUAL and QUAN approaches occurs." This method was employed to complement the results from one technique, quantitative (QUAN) with the other, qualitative (QUAL) by allowing opportunity to seek further clarification of the perceptions of each of the internship director participants.

Quantitative research is a technique used to quantify human actions and ideas through scientific sampling. Quantitative research has been well received within academia since the early nineteenth century. Guba and Lincoln (1994) and Sale, Lohfeld, and Brazil (2002) indicated that quantitative research is based on the premonition that research can be conducted in such a way that the investigator is capable of studying a phenomenon without influencing the phenomenon

or being influenced by the phenomenon. Quantitative research is considered to have a pragmatic stance that there is a single truth and a single reality independent of human perception. It is a method that utilizes confirmation through observation and experimentation (Ryan, 2006).

Qualitative research involves the collection of non-numerical data to understand participants' beliefs, attitudes or experiences (Kalof, Dan, and Dietz, 2008). Qualitative research can be utilized to gain further insight into situations. Although qualitative research was once thought of as "unequal" in terms of being a useful method in experimental research, it is now observed for its ability to add new and greater evidence to interventional studies that go beyond the usefulness of measuring variables alone (Gibson, Timlin, Curran and Wattis, 2004).

Research Questions

The following research questions guided this study:

1. Is there a significant difference in perceptions of dietetic internship directors from onsite and distance internships related to challenges in implementing competencies for dietetic internships?
2. Is there a significant difference in first-time pass rates on the national registration examination for dietitians between graduates of distance dietetic internships and onsite (traditional) dietetic internships?
3. What are the perceptions of dietetic internship directors related to student learning of the ACEND Core Competencies and the influence on first-time pass rates on the national registration examination for dietitians for graduates of traditional onsite internships and/or distance internships?

Using information gained from this study, internship directors from distance or onsite (traditional) supervisory practice internships can make appropriate decisions in the construct of their internship programs to ensure competency of the graduates for entry level practice.

Participants

The two internship programs being compared in this research included the onsite (traditional) internship and the distance internship. The onsite (traditional) internships have rotation sites that are pre-selected and are generally within a close proximity to the institution for

the intern to choose from or are assigned. Distance internships offer the intern opportunity to complete their supervised practice requirements in their local area or using sites and preceptors throughout the United States.

Distance and onsite (traditional) internships vary in the number of interns that are accepted into each respective internship. Distance internships have the capacity to accept more distance interns as the program's interns are often scattered across the U.S. and not competing for rotations in the same proximity. The onsite (traditional) internships often have a specific targeted area from the internships' main campus in which facilities can be contracted. This results in having a limited number of facilities and preceptors available to complete rotations resulting in a limited number of interns that can be accepted into the onsite (traditional) internships.

According ACEND records, there are 263 dietetic internship programs within the U.S (ACEND, 2020). There are currently 4,872 dietetic internship positions available for students within these 263 programs. Among these dietetic internship programs, there are 35 programs that offer a distance-track option. The participants selected for this study consisted of internship directors from the 35 distance internship programs and 35 randomly chosen onsite (traditional) dietetic internship programs. Once the onsite dietetic internship programs were identified, simple random sampling methods were implemented to determine the 35 onsite (traditional) internships selected for the study. A random number generator was used to select the 35 onsite (traditional) internships.

The internship director of each of these 70 supervised practice internship programs were selected as participants of this study and were asked to complete an online survey.

Instrumentation

The *Perceptions of Competency Challenges: Distance versus Onsite Internships* survey used for this study targeted the 70 internship directors from each of the dietetic internship programs of this study. ACEND is the accrediting body for every dietetic educational program across the country. ACEND's competency standards are "expectations" that are well known by every director and thus, are the very foundation of every dietetic internship program across the country. It is because of this fact that this author constructed this survey to include the ACEND internship competency standards. This survey concentration most of its focus on obtaining perceptions of the director regarding their challenges in implementing learning strategies for competency achievement by their student-interns. This survey assessed the internship directors' perceptions as to the overall challenges for each competency to determine any perceptions related to the first-time pass rate on the registration examination for dietitians. This survey was designed on a web-based program known as Qualtrics so that the participants of the study could easily access the survey through a simple link and was provided opportunity for anonymity.

The survey targeted supervised practice internship directors and was entitled *Perceptions of Competency Challenges: Distance versus Onsite Internships*. Through much review of current literature, there were no standardized survey tools found for gathering data regarding the perceptions of supervisory practice internship directors for challenges in meeting ACEND core competencies. Every supervisory practice internship is required by ACEND accreditation standards to conduct a program outcome audit with their graduates to determine program strengths and weaknesses. ACEND accreditation standards also require that each intern demonstrate mastery of each core competency requirement prior to receiving their certificate of completion. This program outcome audit also serves to determine the graduates' success in

passing the national registration examination for dietitians and their ability to acquire a job within the first year of completing the internship (Gould, 2020).

A pilot study was conducted to help validate the survey developed. A pilot survey was sent to two onsite (traditional) internship directors. Validity measures for the survey was obtained by the pilot study. The survey questionnaire designed for this study required pretesting to ensure that the respondents did not interpret the questions differently than what was intended. The pilot study did result in suggested edits by one of the onsite (traditional) internship director participants. The edits were completed and the newly designed survey was submitted to both internship directors again for review and completion of the survey. Krosnick (1999) indicated that in order for close-ended questions to be used effectively, it must ensure a comprehensive list of choices for the respondent. This is important because many people will typically ignore opportunities to volunteer a specific response and will rather select from among the choices provided even if the best response is not listed (Bishop, Hippler, Schwarz, & Strack, 1988; Presser, 1990). This research design made note of these recommendations and ensured that a comprehensive list of responses was included. Since the directors are quite familiar with the standards as each director is responsible for ensuring that each student-intern shows competency in each standard, this helped to ensure consistency in their interpretation of the survey questions.

Data Collection

Prior to the data collection process, the author of this study submitted required forms and other required documents requesting permission to conduct research to Marshall University Institutional Review Board (IRB). Upon IRB approval, the research commenced.

Anonymity of the respondents was maintained through ensuring that no identifiable information was collected from the respondent upon completion of the survey. Safeguards were

in place to protect the privacy of the respondents. No unauthorized access, use, disclosure, theft will take place as the files are password protected. Any printed information related to the survey was locked in a file. The direct information collected from the online survey was only processed and analyzed by the author of this research study. The study ensured minimized risks to the respondent. Informed consent was sought in accordance with the requirements of the IRB from each prospective participant.

The study was a mixed methods approach utilizing both quantitative and qualitative collection of the internship directors' perceptions of competency and first-time pass rate success on the national registration examination for dietitians. The participants of the study completed the web-based survey.

This study began with sending out the web-based survey link to internship directors from onsite (traditional) and distance internships. There was a waiting period of ten days then a reminder was sent to all 70 internship directors for the purpose of reminding any director who had not responded. After an allowance of ten more days following the reminder, the data collected was analyzed.

As mentioned, the data collection procedures were conducted through the utilization of an online-electronic survey system. Shannon, Johnson, Searcy, and Lott (2002) encourage the use of electronic format survey implemented with the use of the internet when gathering data from targeted populations as long as confidentiality and privacy are maintained, and that the researcher utilizes sound principles for survey construction. The advantages identified by Wright (2005) of such a method includes the ability to administer to a large number of participants while also reaching individuals in distant locations, including those who may be difficult to reach. This method benefits the researcher and the participant by being a cost and time saving method for

data collection for the researcher as well as adding ease of communication with participants by the researcher. It also allows for the flexibility of the participants to complete the survey at their convenience in a given timeframe.

Quantitative data from the survey was collected via “yes” and “no” response items as well as forced-choice responses to assess the challenges of competency implementation and perceptions. Qualitative data from this survey was collected utilizing open-ended questions to assess perceptions of the directors.

Just as there are advantages to online survey research, it also comes with its disadvantages as Wright (2005) identified. The disadvantages that he described are as follows:

- Uncertainty of the validity of the data
- Uncertainty of the sampling issues due to response rate of participants
- Uncertainty of transparency of the respondents
- Self-selection bias as some participants might respond to invitation while others simply ignore it

As a matter of fact, Nulty (2008), indicated that a response rate of around 30% on online survey research is considered average.

Data Analysis

Descriptive statistics, frequencies, percentages, factor analysis, Chi-Square analysis was implemented to compare and contrast the relationship between competency of the distance and onsite graduates, the entry level readiness of the distance and onsite graduates and the national registration exam for dietitian first-time pass rates. The IBM Statistical Package for the Social Sciences (SPSS) software, version 26 was utilized for the analysis of the data received. A comparative analysis was conducted to compare, and contrast perceived contributing factors of competence among the internship directors.

Conclusion

This information will be beneficial to internship directors as they continue to attempt to meet accreditation standards. This research will likely benefit future supervisory practice interns as they complete their internship programs and develop competency to be prepared for the entry level position as a registered dietitian nutritionist.

CHAPTER 4

DATA ANALYSIS AND FINDINGS

Introduction

This chapter focuses on the data collection, participants and data analysis. The purpose of this study was to determine the perceptions of the dietetic internship directors of onsite (traditional) and distance internships regarding challenges they may face in implementing strategies to meet the core competencies. The core competencies are standards that every intern is required to achieve by the end of the dietetic internship. By achieving these core competencies, the intern is ready for entry level positions in the field of dietetics. This study focused on the current 2017 ACEND core competency standards in which there are 41 core competencies separated into four Domains.

A survey initiated via Qualtrics was sent to 70 internship directors (35 onsite/traditional and 35 distance) across the country. The survey was written to gain specific information about how each internship director perceived challenges in implementing each core competency and to identify perceived reasons for any challenges identified as well as any support that could be offered for more effective practices. The survey also included demographic information to compare differences between onsite (traditional) or distance internship programs.

The resulting data may be useful to directors from both onsite (traditional) and distance internship programs as well as the leaders in the Academy of Nutrition and Dietetics (AND), administrators of the Accreditation Council for Education in Nutrition and Dietetics (ACEND), student interns, and others who work with or on behalf of onsite (traditional) and distance dietetic internship programs. The resulting data may also prove useful for other healthcare educational programs that require competency standards for their programs as well.

Population and Sample

A Qualtrics survey was distributed to a sample of dietetic internship directors across the United States. These participants were separated into two groups: 35 directors of onsite (traditional) internships and 35 directors of distance internships. Of the 70 surveys that were distributed, 21 were returned which resulted in a return rate of 30%. It should be noted however, two of the internship director participants only answered two questions on the survey and did not fill out the remaining survey questions which lead to having 19 "usable" returned surveys (27%) for the majority of this study.

The COVID-19 pandemic has impacted the duties and responsibilities of many people around the world and dietetic internship directors are among these individuals. It is suspected that the rate of participation in this study by the population targeted was heavily impacted by COVID-19 related issues. For example, there is much digital communication happening now to keep others safe. For this reason, receiving multiple email communications outside of communicating with the directors' own students or colleagues, it would not be surprising that many other email communications such as the survey submitted to the targeted population would potentially get pushed to the side to deal with at a later time and therefore got shuffled amongst a long line of other pertinent emails.

Research Questions

The study on dietetic internship directors' perceptions regarding their challenges with integrating the core competencies into their internship curriculum focused on the following research questions:

RQ1: Is there a significant difference in perceptions of dietetic internship directors from onsite and distance internships related to challenges in implementing competencies for dietetic internships?

RQ2: Is there a significant difference in first-time pass rates on the national registration examination for dietitians between graduates of distance dietetic internships and onsite (traditional) dietetic internships?

RQ3. What are the perceptions of dietetic internship directors related to student learning of the ACEND Core Competencies and the influence on first-time pass rates on the national registration examination for dietitians for graduates of traditional onsite internships and/or distance internships?

Data Collection

This study was based on a non-experimental quantitative and qualitative data collection design utilizing descriptive survey research. The dependent variables in this study were dietetic internship directors' perceived levels of challenges in their abilities to implement ACEND core competencies effectively within their internship programs and their supports for overcoming these challenges. Participant demographics served as the independent variables. These demographics noted whether participants were a dietetic internship director from an onsite (traditional) internship, a distance internship, or both onsite (traditional) and distance internship, how many interns they accepted each year and their first-time pass rates. Because there are far fewer distance dietetic internship programs as compared to onsite programs, directions were provided to participants who were directors of both onsite (traditional) and distance internship program to complete the survey as a director of a distance internship.

Information regarding these participants and the number of students they accept in their internship is presented in Table 1. It should be noted that the only relevance of the numbers of students accepted at each internship was to relay the differences in how many targeted interns that must be assisted by each internship director in developing strategies to meet each competency. To maintain anonymity, numbers were assigned to each participant based on the order of their completion of the survey.

Table 1: Number of Interns Accepted into Onsite (Traditional) and Distance Internships per Year

Onsite (Traditional) Internship	Number of Interns Accepted		Distance Internship	Number of Interns Accepted
Participant #4 Program	10		Participant #1 Program	30
Participant #6 Program	20		Participant #2 Program	66
Participant #7 Program	8		Participant #3 Program	30
Participant #16 Program	8		Participant #5 Program	20
Participant #17 Program	22		Participant #8 Program	70
Participant #18 Program	12		Participant #9 Program	25
Participant #20 Program	18		Participant #10 Program	30
			Participant #11 Program	20
			Participant #12 Program	20
			Participant #13 Program	20
			Participant #14 Program	60
			Participant #15 Program	60
			Participant #19 Program	35
			Participant #21 Program	33

As noted in the demographic information collected from the participants in this research, the represented distance internships accept as many as 70 interns while the represented onsite (traditional) internships accept 22 interns and as few as eight selected interns each year. In retrospect, it may have proved beneficial to this research to ask each internship director to give their perceptions on what it is like to manage the number of interns that are accepted into their respective internship and having to develop strategies to help each intern meet each core competency. Obviously, this was not done but there is importance to seeing how each program

defers in the number of interns that are managed in each program. This does not mean that internship directors that have more interns have significantly more challenges than the other internship directors. This collected information has simply revealed that internship programs vary in the number of interns that are accepted each year but with every intern comes the responsibility of ensuring that core competencies are met by the intern by the completion of the internship.

The survey used to collect data for this study was entitled *Perceptions of Competency Challenges: Distance versus Onsite Internships* (Appendix B). There was no previous study survey available for this study, therefore an author-generated survey instrument was developed. A pilot study was conducted to determine the validity and reliability of the survey developed. Two dietetic internship directors (not participants of the study) who are both directors of onsite (traditional) internship programs but are both also familiar with distance internships reviewed the original survey during the pilot study. One internship director in the pilot study reviewed the survey and had no suggested changes. The other director provided feedback that gave further direction in the survey development. This feedback from the director was aimed at the frame of the questions of the survey. The questions were originally formatted using a three-point Likert scale (*Could be Better, Meets Standards, Exceeds Standards)* to determine the perception of each internship director on how well she or he was at helping their interns meet each core competency. The director suggested there would be no rich data received from such a survey as each study participant director would show that their program meets the standards of each competency no matter what because that is what is required of each internship director. It was at this juncture that the survey needed to be redesigned. The feedback received showed that a more promising survey would be to target whether internship directors from onsite (traditional) or

distance programs faced challenges with each core competency. The new survey design took form to determine this exact suggestion. This change in survey design resulted in the need for slight modifications in the research questions.

The first portion of the survey was an inventory that focused on what type of internship program that the participant represented: *Onsite (Traditional) Internship, Distance Internship, Both Onsite (Traditional) Internship and Distance Internship.* This section also asked how many interns that the participant's internship accepts each year. This was a textual response section that allowed the director to specifically identify how many students the internship accepted each year. The second portion of the survey asked participants to indicate whether they experience any challenges in devising strategies to meet each core competency for each Domain (1-4). Collectively, these Domains are in line with the National Academy of Medicine's recommended five core competencies, which include providing patient-centered care, employing evidenced based practice, applying quality improvement and utilizing informatics (Turner, Eliot, Kent, Rusnak & Landers, 2017). Domain 1 focuses on the integration of scientific information and translation of research into practice. Domain 2 focuses on beliefs, values, attitudes and behaviors for the professional dietitian nutritionist level of practice. Domain 3 focuses on development and delivery of information, products and services to individuals, groups and populations. Domain 4 focuses on the strategic application of principles of management and systems while providing services to individuals and organizations. This section allowed for both quantitative and qualitative data collection. A *YES* or *No* response was utilized for this section, with an option in which participants were provided a comment section to further explain their challenges if they replied *YES* to any core competency. The third portion of the survey allowed for qualitative responses. This section asked participants to indicate their

perceptions on what type of support (if any) could be offered by their organization, AND or ACEND to support their efforts in making the core competencies for the registered dietitian nutritionist (CRDN's) less challenging.

The fourth section of the survey focused on participant demographics, asking participants to indicate their first-time pass rates for the academic year of 2019-2020 (from a range option of *80%-100%, 60%-79%, 40%-59%, 20%-39% or 0%-19%*). The fifth and final section of the survey asked participants to indicate their perceptions on whether the ACEND core competencies has any influence on promoting first-time pass rate for the graduate's performance on the national registration examination for dietitian nutritionist. It was noted that two participants completed the first section of the survey but did not take the time to complete the survey in its entirety. This resulted in some questions having 21 responses and most others having 19 responses.

Quantitative Data Analysis

To answer Research Question 2, quantitative data were provided in the form of forced answer responses related to the first-year pass rates. Participants reported ranges of pass rates as presented in Table 2. Percentages of response frequencies were calculated to describe demographic data. The following presents the analysis of data for each type of program.

RQ2: Is there a significant difference in first-time pass rates on the national registration examination for dietitians between graduates of distance dietetic internships and onsite (traditional) dietetic internships?

Table 2: First Time Pass Rate Response Frequency and Percentages

First-Time Pass Rate Range	Pass Rate Response Frequency and Percentage of Onsite (Traditional) Internship Programs		Pass Rate Response Frequency and Percentage of Distance Internship Programs
80%-100%	3 (42%)		5 (45%)
60%-79%	2 (29%)		5 (45%)
40%-59%	2 (29%)		1 (9%)
20%-39%			
0%-19%			

Among the internships represented by the participants of the study, there was no statistical difference ($p \leq 0.05$) in first-time pass rates among graduates of onsite (traditional) internships and distance internships. It was noted that there were no internships among the onsite (traditional) and distance programs with less than 40% first-time pass rate on the national registration examination for dietitians.

To further examine Research Question 2, differences between pass rate ranges for each group were analyzed. These data were analyzed using the non-parametric Chi-Square tests as presented in Table 3. Since there was a low participant response rate of 21 respondents out of 70 eligible participants (30%) in the study, the Chi-Square analyses contained expected values below five for many of the tests. Therefore, reliance on conclusions made here about first-time pass rates among graduates of onsite (traditional) and distance internships must be taken into consideration as a limitation of the Chi-Square analyses. Percentages were calculated to describe demographic data.

Table 3: Chi-Square Analyses of Reported First-Time Pass Rates for Program Type

Program Type	Frequencies for Pass Rate Intervals					Chi-Square Statistic **	p value attained *
	0-19%	20-39%	40-59%	60-79%	80-100%		
Onsite (Traditional)	0 0%	0 0%	2 28.6%	2 28.6%	3 42.9%	1.294	0.524
Distance	0 0%	0 0%	1 9.1%	5 45.5%	5 45.5%		

* Significance attained at $p \leq 0.05$ ** 6 cells (100.0%) have expected count less than 5. The minimum expected count is 1.17.

The data revealed that there were no significant statistical differences between first-time pass rates on the national registration examination for dietitians between the graduates of onsite (traditional) and distance internships.

To address Research Question 1, quantitative data were provided in the form of forced answer and yes/no responses that are represented in Tables 4 through 7. These data were analyzed using the non-parametric Chi-Square tests. The Chi-Square analyses contained expected values below five for many of the tests. Therefore, reliance on conclusions made here about participant perceptions of challenges must be taken into consideration as a limitation of the Chi-Square analyses. Percentages were calculated to describe demographic data. The following presents the statistical analysis of data for Research Question 1.

RQ1: Is there a significant difference in the perceptions of dietetic internship directors from onsite and distance internships related to challenges in implementing competencies for dietetic internships?

Table 4: Chi-Square Analyses of Director Perceptions of Challenges to Accomplish each Core Competency for the Registered Dietitian Nutritionist (CRDN) in Domain 1

		Frequencies of Yes / No for Challenges			
	Program Type	Yes	No	Chi-Square Statistic	p value attained *
CRDN 1.1	Onsite	0 – 0%	7 – 100%	0.616 **	0.433
	Distance	1 – 8.3%	11 – 91.7%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is .37.				
CRDN 1.2	Onsite	0 – 0%	7 – 100%	NA	NA
	Distance	0 – 0%	12 – 100%		
CRDN 1.3	Onsite	2 – 28.6%	5 – 71.4%	3.832 **	0.050 *
	Distance	0 – 0%	12 – 100%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is .74.				
CRDN 1.4	Onsite	0 – 0%	7 – 100%	NA	NA
	Distance	0 – 0%	12 – 100%		
CRDN 1.5	Onsite	0 – 0%	7 – 100%	1.304**	0.253
	Distance	2 – 16.7%	10 – 83.3%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is .74.				
CRDN 1.6	Onsite	0 – 0%	7 – 100%	NA	NA
	Distance	0 – 0%	12 – 100%		

* Significance attained at $p \leq 0.05$

Many of the CRDN's showed no significant statistical differences in the perceptions of directors from onsite (traditional) and distance internships regarding challenges in implementing competencies in Domain 1. CRDN 1.3 which relates to justifying programs, products, services and care using appropriate evidence or data showed significant differences in the perception of the directors of the two programs. Twelve of the participants who represented the distance internship reported that there were no challenges in implementing CRDN 1.3. However, five out of seven participants representing the onsite (traditional) internships stated that they do have challenges in implementing CRDN 1.3. Further clarification of their challenges is reported in the qualitative section of this study.

Table 5: Chi-Square Analyses of Director Perceptions of Challenges to Accomplish each Core Competency for the Registered Dietitian Nutritionist (CRDN) in Domain 2

		Frequencies of Yes / No for Challenges			
	Program Type	Yes	No	Chi-Square Statistic	p value attained *
CRDN 2.1	Onsite	1 – 14.3%	6 – 85.7%	1.810**	0.179
	Distance	0 – 0%	12 – 100%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is .37.				
CRDN 2.2	Onsite	0 – 0%	7 – 100%	NA	NA
	Distance	0 – 0%	12 – 100%		
CRDN 2.3	Onsite	0 – 0%	7 – 100%	NA	NA
	Distance	0 – 0%	12 – 100%		
CRDN 2.4	Onsite	2 – 28.6%	5 – 71.4%	3.832**	0.050*
	Distance	0 – 0%	12 – 100%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is .74.				
CRDN 2.5	Onsite	4 – 57.1%	3 – 42.9%	0.003**	0.960
	Distance	7 – 58.3%	5 – 41.7%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.95.				
CRDN 2.6	Onsite	1 – 14.3%	6 – 85.7%	0.305**	0.581
	Distance	3 – 25%	9 – 75%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.47.				
CRDN 2.7	Onsite	2 – 28.6%	5 – 71.4%	1.362**	0.243
	Distance	1 – 8.3%	11 – 91.7%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.11.				
CRDN 2.8	Onsite	3 – 42.9%	4 – 57.1%	0.652**	0.419
	Distance	3 – 25%	9 – 75%		
	**3 cells (75.0%) have expected count less than 5. The minimum expected count is 2.21.				
CRDN 2.9	Onsite	2 – 28.6%	5 – 71.4%	0.029**	0.865
	Distance	3 – 25%	9 – 75%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.84.				
CRDN 2.10	Onsite	0 – 0%	7 – 100%	0.616**	0.433
	Distance	1 – 8.3%	11 – 91.7%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is .37.				
CRDN 2.11	Onsite	1 – 14.3%	6 – 85.7%	0.166**	0.683
	Distance	1 – 8.3%	11 – 91.7%		

	**2 cells (50.0%) have expected count less than 5. The minimum expected count is .74.				
CRDN 2.12	Onsite	0 – 0%	6 – 100%	NA	NA
	Distance	0 – 0%	12 – 100%		
CRDN 2.13	Onsite	0 – 0%	7 – 100%	2.078**	0.149
	Distance	3 – 25%	9 – 75%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.11.				
CRDN 2.14	Onsite	1 – 16.7%	5 – 83.3%	0.161**	0.688
	Distance	3 – 25%	9 – 75%		
	**3 cells (75.0%) have expected count less than 5. The minimum expected count is 1.33.				
CRDN 2.15	Onsite	2 – 28.6%	5 – 71.4%	0.326**	0.568
	Distance	5 – 41.7%	7 – 58.3%		
	**3 cells (75.0%) have expected count less than 5. The minimum expected count is 2.58.				

* Significance attained at $p \leq 0.05$

Many of the CRDN's showed no significant statistical differences in the perceptions of directors from onsite (traditional) and distance internships regarding challenges in implementing competencies in Domain 2. CRDN 2.4 which relates to the intern functioning as a member of the interprofessional team showed significant differences in the perception of the directors of the two programs. Twelve of the participants who represented the distance internship reported that there were no challenges in implementing CRDN 2.4. However, five out of seven participants representing the onsite (traditional) internships stated that they do have challenges in implementing CRDN 2.4. Further clarification of their challenges is reported in the qualitative section of this study.

Table 6: Chi-Square Analyses of Director Perceptions of Challenges to Accomplish each Core Competency for the Registered Dietitian Nutritionist (CRDN) in Domain 3

		Frequencies of Yes / No for Challenges			
	Program Type	Yes	No	Chi-Square Statistic	p value attained *
CRDN 3.1	Onsite	0 – 0%	7 – 100%	NA	NA
	Distance	0 – 0%	12 – 100%		
CRDN 3.2	Onsite	3 – 50%	3 – 50%	0.000**	1.000
	Distance	6 – 50%	6 – 50%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.00.				
CRDN 3.3	Onsite	0 – 0%	7 – 100%	NA	NA
	Distance	0 – 0%	12 – 100%		
CRDN 3.4	Onsite	0 – 0%	7 – 100%	NA	NA
	Distance	0 – 0%	12 – 100%		
CRDN 3.5	Onsite	0 – 0%	6 – 100%	NA	NA
	Distance	0 – 0%	12 – 100%		
CRDN 3.6	Onsite	2 – 28.6%	5 – 71.4%	0.377**	0.539
	Distance	2 – 16.7%	10 – 83.3%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.47.				
CRDN 3.7	Onsite	0 – 0%	7 – 100%	NA	NA
	Distance	0 – 0%	12 – 100%		
CRDN 3.8	Onsite	0 – 0%	6 – 100%	0.529**	0.467
	Distance	1 – 8.3%	11 – 91.7%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is .33.				
CRDN 3.9	Onsite	1 – 14.3%	6 – 85.7%	1.810**	0.179
	Distance	0 – 0%	12 – 100%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is .37.				
CRDN 3.10	Onsite	0 – 0%	7 – 100%	NA	NA
	Distance	0 – 0%	12 – 100%		

* Significance attained at $p \leq 0.05$

There were no significant statistical distinctions between the perceptions of the director participants of onsite (traditional) internships with that of the distance internships when examining Domain 3.

Table 7: Chi-Square Analyses of Director Perceptions of Challenges to Accomplish each Core Competency for the Registered Dietician Nutritionist (CRDN) in Domain 4

		Frequencies of Yes / No for Challenges			
	Program Type	Yes	No	Chi-Square Statistic	p value attained *
CRDN 4.1	Onsite	3 – 42.9%	4 – 57.1%	0.652**	0.419
	Distance	3 – 25%	9 – 75%		
	**3 cells (75.0%) have expected count less than 5. The minimum expected count is 2.21.				
CRDN 4.2	Onsite	0 – 0%	7 – 100%	NA	NA
	Distance	0 – 0%	12 – 100%		
CRDN 4.3	Onsite	0 – 0%	7 – 100%	NA	NA
	Distance	0 – 0%	12 – 100%		
CRDN 4.4	Onsite	0 – 0%	7 – 100%	1.304**	0.253
	Distance	2 – 16.7%	10 – 83.3%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is .74.				
CRDN 4.5	Onsite	2 – 28.6%	5 – 71.4%	1.362**	0.243
	Distance	1 – 8.3%	11 – 91.7%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.11.				
CRDN 4.6	Onsite	0 – 0%	7 – 100%	0.616**	0.433
	Distance	1 – 8.3%	11 – 91.7%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is .37.				
CRDN 4.7	Onsite	2 – 28.6%	5 – 71.4%	1.362**	0.243
	Distance	1 – 8.3%	11 – 91.7%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.11.				
CRDN 4.8	Onsite	2 – 28.6%	5 – 71.4%	3.832**	0.050*
	Distance	0.0%	12 – 100%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is .74.				
CRDN 4.9	Onsite	3 – 42.9%	4 – 51.7%	0.090**	0.764
	Distance	6 – 50%	6 – 50%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.32				
CRDN 4.10	Onsite	3 – 42.9%	4 – 57.1%	1.564**	0.211
	Distance	2 – 16.7%	10 – 83.3%		
	**2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.84.				

* Significance attained at $p \leq 0.05$

Many of the CRDN's showed no significant statistical differences in the perceptions of directors from onsite (traditional) and distance internships regarding challenges in implementing competencies in Domain 4. CRDN 4.8 which relates to developing a plan to provide or develop a product, program or service that includes a budget, staffing needs, equipment and supplies showed significant differences in the perception of the directors of the two programs. Twelve of the participants who represented the distance internship reported that there were no challenges in

implementing CRDN 4.8. However, five out of seven participants representing the onsite (traditional) internships stated that they do have challenges in implementing CRDN 4.8. Further clarifications of their challenges are reported in the qualitative section of this study.

Qualitative Data Analysis

Qualitative survey data from the open-ended response questions were analyzed to identify themes. The responses were recorded in a chart separated by whether the responses came from a distance internship director or an onsite (traditional) internship director. The analysis of these qualitative pieces will help to answer research questions 1 and 3.

RQ1: Is there a significant difference in perceptions of dietetic internship directors from onsite and distance internships related to challenges in implementing competencies for dietetic internships? To address Research Question 1, data was analyzed from participants' responses to the second portion of the survey concerning their perceptions related to the challenges of implementing competencies. If a participant selected "yes" to any of the CRDN's as being a challenge to devise strategies to meet, the participant would then have the option to explain their challenge related to the competency. These comments are referenced in Tables 8-11 (See Appendix C-F).

As can be seen in the Table 8 (See Appendix C), there were few reported challenges among the participants regarding competencies under Domain 1. These challenges were reported by both onsite (traditional) internship directors and distance internship directors. There were two distance internship directors who commented on challenges related to competencies and there were two onsite (traditional) internship directors who commented on challenges as well. A common theme among some of the competencies was the "vague" or "confusing" wording used in the competencies themselves that could result in issues for the internship directors and the

preceptors. Another common theme among the responses given by the internship directors were the fact that many preceptors were not involved in such targeted activities as written in the competency which results in the directors having to engage in alternative strategic planning to assist the intern in meeting the competency requirements. It was also noted that among the six competencies found under Domain 1, three competencies were identified as having a challenge among some of the internship director participants and three competencies were revealed to have no challenges among the onsite (traditional) or distance internship director participants.

The feedback regarding competencies under Domain 2 in Table 9 (See Appendix D) has provided many stated challenges from both distance and onsite (traditional) internship directors. Among these participants who reported challenges, there were 19 comments from the onsite (traditional) directors and 28 comments from distance internship directors. The most common theme among many of the competency challenges were related to the lack of opportunity for the intern to engage in the targeted activity due to either the facility's organization structure or the inability for the preceptor to set up such learning experiences. Another common challenge identified by the internship director participants is related to the wording of the competency and how one is to interpret it on their own. Due to the timing of this study, it is worth noting issues reported by internship directors related to COVID-19. COVID-19 as mentioned prior, has resulted challenges as of late with regard to specific competencies that would typically require face to face interaction. It was also noted that among the 15 competencies found under Domain 2, 12 competencies were identified as having a challenge among some of the internship director participants and three competencies were revealed to have no challenges among the onsite (traditional) or distance internship director participants.

Table 10 (See Appendix E) revealed 15 commented challenges in total for Domain 3. There were six challenges reported by onsite (traditional) internship directors and nine challenges reported by distance internship directors. The common challenge reported among the internship director participants from onsite (traditional) and distance internships was related to the lack of opportunities for interns to engage in this activity due to preceptors' roles within the organization. As stated previously, COVID-19 has impacted many of the strategies to meet these competencies as well due to lack of ability to have face to face interventions. It was also noted that among the ten competencies found under Domain 3, four competencies were identified as having a challenge among some of the internship director participants and six competencies were revealed to have no challenges among the onsite (traditional) or distance internship director participants.

As can be seen in the Table 11 (See Appendix F), there were many reported challenges among the participants regarding competencies under Domain 4. Among the 31 challenges reported, there were 15 challenges reported by onsite (traditional) internship directors and 16 challenges reported by distance internship directors. A common theme among some of the competencies was the poor wording used in the competencies themselves that could result in issues for the internship directors, interns and the preceptors. As with many of the other competencies in the other Domains, challenges mentioned by the onsite (traditional) and distance internship directors is the issue that many preceptors are not involved in such targeted activities as identified in the competencies. This results in the internship directors having to engage in alternative strategic planning to assist the intern in meeting the competency requirements. It was also noted that among the ten competencies found under Domain 1, eight competencies were identified as having a challenge among some of the internship director participants and two

competencies were revealed to have no challenges among the onsite (traditional) or distance internship director participants.

To also address Research Question 1, data was analyzed from participants' responses to the third portion of the survey concerning their perceptions related to any support they could receive from their organization, AND or ACEND that could make the CRDN's that they reported as challenging, less challenging. This portion of the survey included three open-ended questions. The open-ended survey questions and participant responses to each question are recorded in Tables 12 through 14 (See Appendix G-I).

Table 12 (See Appendix G) provided a detailed look at the responses given by the onsite (traditional) and distance internship directors for an open-ended question related to whether the internship directors felt that their own educational organization could help in making any challenges reported, less challenging. While a few participants had no opinion on the matter or commented that there was nothing that the organization could do, many internship directors identified strategies that could potentially be implemented to support efforts. The shared perceptions among the onsite (traditional) and distance internship directors were that strategies could continue to be implemented to meet competencies in-house through assignments, simulations and projects or by partnering with in-house departments to assist. Among the 15 comments made, five were made by onsite (traditional) internship directors and ten were given by the distance internship directors.

In Table 13 (See Appendix H), the directors of onsite (traditional) and distance internship programs shared their perceptions related to whether ACEND or AND could offer support for the efforts of making any reported challenges less challenging. One of the most obvious commonalities shared amongst the internship director participants from onsite (traditional) and

distance was the desire to have potential examples of activities to demonstrate how the internship directors can specifically plan out the competencies to be met. Changing the wording of some of the competencies was another shared opinion amongst the onsite (traditional) and distance internship directors. Having a virtual platform set up by ACEND or AND where internship directors from all programs can share examples of how their internships are meeting the competency requirements was also identified. It was noted that among the 15 comments provided, five came from onsite (traditional) internship directors and ten came from distance internship directors.

In Table 14 (See Appendix I), the directors of onsite (traditional) and distance internship programs shared their perceptions related to the materials ACEND or AND could provide to support for the efforts of making any reported challenges less challenging. One of the most shared opinions amongst the internship director participants from onsite (traditional) and distance was the desire to have potential examples of activities to demonstrate how the internship directors can specifically plan out the competencies to be met. Having a virtual platform set up by ACEND or AND where internship directors from all programs can share examples of how their internships are meeting the competency requirements was identified again in this question. It was noted that among the 11 comments provided, four came from onsite (traditional) internship directors and seven came from distance internship directors.

To address Research Question 3, data was analyzed from participants' responses to the third portion of the survey concerning their perceptions related to student learning of the ACEND Core Competencies and the influence on first-time pass rates on the national registration examination for dietitians. This portion of the survey included an open-ended question. The internship director participants perceptions were quoted as follows.

The open-ended survey questions and participant responses to each question are recorded in Table 15. Each director participant is designated by a number to maintain confidentiality of their responses.

RQ3. What are the perceptions of dietetic internship directors related to student learning of the ACEND Core Competencies and the influence on first-time pass rates on the national registration examination for dietitians for graduates of traditional onsite internships and/or distance internships?

The comments revealed in Table 15 (See Appendix J) has demonstrated the perceptions of the internship director participants from onsite (traditional) and distance internships. Among the 17 comments, six were made by onsite (traditional) internship directors and 11 were made by distance internship directors. One of the main shared themes among the two groups of director participants' comments were that there are no alignments between the core competencies and the national registration examination for dietitians. The other common theme between the onsite (traditional) and distance internship director participant comments was that the national registration examination questions are directed more at undergraduate knowledge than the core competencies.

CHAPTER 5

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

This chapter presents discussions and conclusions concerning the data analysis from the internship director participants' survey responses based on each of the three research questions. This chapter will also provide implications for action as well as recommendations for future research.

Study Summary

The purpose of this study was to determine the perceptions of the dietetic internship directors of onsite (traditional) and distance internships regarding any challenges they may face in implementing strategies to meet core competencies. This study was based on a non-experimental quantitative and qualitative data collection design utilizing descriptive survey research. The study targeted 70 internship directors from around the United States. There were 35 onsite (traditional) internship directors and 35 distance internship directors. There was usable data from 19 participants in the study. The 19 participants included seven onsite (traditional) internship directors and twelve distance internship directors. The study involved sending an electronic survey link to the 70 internship directors. The 35 distance internship directors were chosen without sampling methods due to the fact there were only 35 distance internship programs around the country during time of this study. Simple random sampling using a number generator was utilized to select the 35 onsite (traditional) internships.

Research Question 1 Conclusions

Research Question 1: Is there a significant difference in perceptions of dietetic internship directors from onsite and distance internships related to challenges in implementing competencies for dietetic internships? This question targeted each of the 41 core competencies

developed and mandated by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) for all dietetic internships. These 41 core competencies are considered professional entry level skillsets that each dietetic intern is required to show competence in before being able to complete an internship. The 41 core competencies are found in the survey that was distributed to the internship director participants (See Appendix B).

A Chi-Square test was utilized to analyze the data for Research Question 1. Statistical analysis revealed there were no statistical significances between the two groups of internship directors on 38 of the 41 Competencies for the Registered Dietitian Nutritionist (CRDNs). Among the 41 core competencies, there were three CRDNs that showed significant differences ($p \leq 0.05$) between the onsite (traditional) directors' perceptions from that of the distance internship directors. The three CRDNs that were revealed to have significant differences were CRDN 1.3, CRDN 2.4 and CRDN 4.8. The following paragraphs provide information related to why these three CRDNs resulted in significant differences.

In Domain 1, which focuses on the integration of scientific information and translation of research into practice, it was CRDN 1.3 that showed significant differences between the perceptions of the directors from onsite (traditional) and distance internships. CRDN 1.3 relates to justifying programs, products, services and care using appropriate evidence or data. There were more onsite (traditional) directors who reported challenges than the distance internship directors. The themes revealed from the qualitative portion of the survey as reported by the onsite (traditional) internship directors were that CRDN 1.3 uses vague wording which causes confusion in interpretation. The directors also reported that it is often challenging for interns to observe possible collected survey information relating to programs, services or products provided by the preceptor or the facility during the interns' rotations. This may be due to the fact

that the facility nor the preceptor collects survey information related to products, services or programs. It could also be related to the fact that the preceptor does not have access to this information and thus, the interns would not have access to such information. Another common theme reported was that some internship directors are forced to use class time to accomplish this competency because there is no way for the preceptor to help in meeting this core competency.

In Domain 2, which focuses on beliefs, values, attitudes and behaviors for the professional dietitian nutritionist level of practice, it was CRDN 2.4 that showed significant differences. CRDN 2.4 relates to the intern functioning as a member of the interprofessional team. It was the majority of the onsite directors who reported challenges with this competency. The study results from the qualitative portion revealed that the major challenge reported was that many of the preceptors in rotations have a lack of opportunity for inclusion in interprofessional teams. It should be noted that it was mentioned that this has especially been the case in the last year with the COVID-19 pandemic.

In Domain 3, which focuses on development and delivery of information, products and services to individuals, groups and populations had no CRDNs which showed significant differences between the perceptions of the directors of onsite (traditional) or distance internships.

In Domain 4, which focuses on the strategic application of principles of management and systems while providing services to individuals and organizations, it was CRDN 4.8 that showed significant differences between the directors of the two types of internships. CRDN 4.8 relates to developing a plan to provide or develop a product, program or service that includes a budget, staffing needs, equipment and supplies. The major challenge reported by the onsite (traditional) internship directors in the qualitative portion of the study was that there is simply not enough time in rotations to complete such a list of tasks. Participants also noted the lack of opportunities

for interns to have similar experiences because every facility that an intern may contract with or is assigned, varies in their capacity to make it possible for the intern to engage in such a task. Some facilities may be able to offer an opportunity for the intern to design a new program or test a product and be able to be a part of all the core competency expectations while other facilities have limited budgets or rules that would prevent the intern from completing such a task. This type of challenge will often lead to this core competency being met during class time. As stated by a few internship directors, when competencies are accomplished in class rather than in rotation experiences, there is an effect of stepping away from "hands on" experiences that the interns should be receiving.

Although this study set out to find if there were significant differences between the directors' perceptions of challenges regarding the CRDNs, there was no clearly defined question as to determine why these perceptions may be significantly different. Therefore, there is no way of defining these significant differences between the perceptions of the directors of onsite (traditional) and distance internship other than referencing the stated challenges that were reported by the onsite internship directors. It is suspected however, that because of the number of years of the existence of onsite (traditional) internships over that of the distance internships, there is likely more historical evidence and possible years of experience to reflect on by onsite (traditional) internship directors to report challenges than those directing distance internships.

Overall, the results of this portion of the research study complemented many of the past research studies who compared distance and onsite (traditional) internship programs. Quantitatively, this study revealed that there were no significant differences between challenges that distance internship directors face versus the challenges faced by the directors of onsite (traditional) internships. For many of the competencies, this study demonstrated that it didn't

matter whether it was an onsite (traditional) or distance internship that these directors are overseeing because they are all quite proficient in developing strategies to help the intern gain experience and thus meet the core competency standards.

There have been no studies to date that have particularly focused on the perceptions of the directors of dietetic internship programs relating to the challenges that may be faced when designing strategies for meeting competencies but there have been a few studies that have compared onsite (traditional) and distance dietetic internships by other means. These studies mainly examined whether there were any differences in the outcomes of interns completing one internship over the other. For instance, the study conducted by Post, Casper, Wrobleski and Kock (2006) was conducted to determine whether distance internships are as successful in preparing entry level dietitians as traditional onsite internships are when examining for knowledge and skill gain. Post et al. (2006) ultimately discovered that both type of internship programs had similar successes. Another study that was completed by Pool, Bodzio, Minkoff, and DellaValle, (2016) from Marywood University's DI program, shared similar related results in which they compared student-intern graduate outcomes on the national registration examination for dietitians between those completing the traditional onsite internship track and those completing the distance internship track. Pool et al. (2016) showed no significant differences in outcomes on the national registration examination for dietitians between the fact that a graduate student-intern completed an onsite (traditional) or distance internship.

Although there is no mention of director perceptions of challenges related to competencies in these studies conducted by Post et al. (2006) and Pool et al. (2016), this research study generally showed that onsite (traditional) and distance internships are not only similar in

the successes of the graduates but also in the directors' perception of challenges related to CRDNs.

It should be noted that although there were not many core competencies that showed significant differentiation between the perceptions of the onsite (traditional) and distance internship directors quantitatively, there were very rich comments made pertaining to the challenges that both groups face in implementing strategies to meet many of the core competencies.

For instance, there were 42 challenges reported in total by the onsite (traditional) internship directors and 56 challenges reported in total by the distance internship directors throughout this study. To break this down further, out of the 41 ACEND core competencies, there were 27 core competencies reported with challenges for either the onsite (traditional) and distance internship directors. Among the 27 reported core competency challenges, there were 13 core competencies that were either a reported challenge by only the onsite (traditional) internship directors or a reported challenge only by the distance internship directors. This means that 14 of the CRDNs were reported as being challenging by both the onsite (traditional) and distance internship directors.

The following will describe challenges related to CRDNs that did not show significant differences between the directors of the two groups but are rather the CRDNs with identified challenges by either an onsite (traditional) internship director or a distance internship director.

Among the 13 CRDNs that had reported challenges by either the onsite (traditional) internship director or the distance internship director, there were two CRDNs from Domain 1 reported as challenging by only the distance internship directors and one CRDN from Domain 1 reported as challenging by only the onsite (traditional) internship directors. CRDN 1.1 was

identified as challenging by a distance internship director. CRDN 1.1 requires that the intern be able to identify indicators of program quality or customer service as well as be able to measure achievement of the program's objectives. It was stated that the competency is vague and there is difficulty choosing activities to meet this competency. CRDN 1.3, which requires that the intern justify programs, products and services utilizing up-to-date evidence, was identified as challenging by onsite (traditional) internship directors. These onsite (traditional) internship directors reported that the competency wording was vague and that there are often no opportunities at the rotation sites to complete this competency. Distance internship directors identified CRDN 1.5 as challenging. CRDN 1.5 requires the intern to be able to conduct projects utilizing evidence-based research methods, ethical procedures and data analysis. These distance internship directors indicated that the wording of the competency is vague and there are not many preceptors who are involved in research thus making this competency a challenge to meet.

These CRDNs mentioned above are a challenge for the internship directors because of two main issues. The first issue noted is that the wording of the core competencies are vague thus leading to challenges in interpretation and devising strategies to meet the core competencies. The second issue is the reliance on the facility to have the resources to achieve the core competencies or the preceptor to engage in such a task. If the facility does not have the resources needed to complete the task nor is the preceptor experienced in engaging in the task or has opportunity to engage in the task, then there are limitations on the ability for the intern to achieve the core competency in that specific rotation site. Rotation sites and preceptors are vital to both distance and onsite (traditional) internships because without either, hands-on field experiences for the interns would not be possible. It is recognized by internship directors that there are validation studies that ACEND conducts prior to establishing core competencies. There is, however, no

previous research available that identifies the challenges that dietetics internship directors face when attempting to interpret or implement strategies to meet core competencies. The research studies conducted by Post et al. (2006) and Pool et al. (2016) showed that the outcomes of interns completing distance or onsite (traditional) internships are both successful. The studies validated that it does not matter which program a student chooses to do an internship at as the student has the potential to be successful as an intern and graduate of the internship. There is however a lack of distinction of the challenges that the internship directors of these programs face daily to ensure that core competencies are met by each intern. It is great to know that graduates will be successful upon completion of both types of internships but there is now evidence of challenges reported by the internship director participants in this study of the struggles that they each face to ensure the intern will meet all of the core competencies.

In Domain 2 there were three CRDNs reported as challenging by only the onsite (traditional) internship directors and two CRDNs from Domain 2 that was reported as challenging by only the distance internship directors. CRDN 2.1 which requires that the intern practices nutrition services in compliance with current federal guidelines and state statutes and rules as well as in accordance with accreditation standards and Code of Ethics for the Profession of Nutrition and Dietetics was identified as challenging for an onsite (traditional) internship director. This onsite (traditional) internship director reported that preceptors are not always aware of the regulations that must be followed thus making it difficult to meet the competency requirements. CRDN 2.4 was identified as challenging for onsite internship directors. CRDN 2.4 requires that the intern should be a participating member of the interprofessional team. These onsite (traditional) internship directors perceive this core competency as challenging primarily because being involved as a member of an interprofessional team is often coordinated by the

preceptor and not all preceptors are a part of the interprofessional teams in the facility. CRDN 2.7 which requires that the intern be able to apply leadership skills and thereby achieve desired outcomes was considered a challenge by onsite (traditional) internship directors. These onsite (traditional) internship directors report that an intern is not yet at the stage to show leadership skills. A distance internship director reported CRDN 2.10 to be challenging which requires that the intern be able to demonstrate professional skillsets in all areas of practice. This distance internship director indicated that the challenge with this core competency stems from the vague wording of the core competency. CRDN 2.13 which requires the intern to prepare a plan for professional development utilizing guidelines of the Commission on Dietetic Registration (CDR) that can be carried out once in practice as an RDN was reported as challenging by distance internship directors. These distance internship directors indicated that some interns are not aware of the field of practice that they want to pursue therefore it is a challenge to meet this competency.

There are many CRDN challenges reported by the internship directors for Domain 2. These challenges vary from vague wording of the competencies to the perceived readiness of an intern to carry out such task to the capacity of interns to know what they want to do in the future. Many of the challenges in Domain 2 related to wording of the core competencies. Having what is perceived as “vague wording” is an issue for internship directors. This wording is left to interpretation which can cause confusion not only by the internship director but the intern as well as the preceptor. Another example of wording issues that is perceived by the internship directors is when competencies are worded in such a way that an intern will show “leadership skills.” Leadership is a broad category and defined in many different ways by many different individuals. One particular internship director challenged this competency as to whether interns

are at a point in their experience to display leadership skills. This is of course, dependent on how the internship director defines leadership skills. It all comes back to wording or clarification necessary for interpretation.

The other related example that falls in this category is CRDN 2.13. Upon entering the career as an RDN, a professional plan is required by CDR that signifies the individual's professional goals and continuing education or learning strategies necessary to meet the professional goals. The challenge identified with CRDN 2.13 is related to the fact that many interns are not aware of the area of practice in which they will pursue once the internship is completed. When meeting this core competency, the objective is to prepare the intern for the process of this professional plan development and in a best-case scenario, perhaps have the intern ready with the first professional plan already developed. This way, once the intern has completed the internship and has passed the national registration examination for dietitians and is ready for their career, the plan has already been developed and can easily be submitted to CDR. The wording of this competency could perhaps be changed to "Prepare a draft plan for professional development…" and this identified challenge could possibly be resolved. The wording of a core competency can cause confusion and challenges and Domain 2 is a prime example. There is no research evidence that demonstrates that changing the wording of competencies can reduce the number of challenges identified. It would behoove ACEND or any other accrediting agency who works with competency-based education to poll the entire population of directors who will carry out these competencies to ensure that there is a reduced incidence of confusion or challenges in interpretation. As indicated prior all previous related research regarding the comparisons between distance and onsite (traditional) internships focuses on outcomes of the interns completing the respective internship but there is no data gathered that

relates to the internship director and all of the work that went into ensuring the interns completed the internships. Turner, Eliot, Kent, Rusnak, and Landers (2017) indicated that research and efforts should be made to determine any difference between course learning and experiential learning so that best practices can be identified. It is vital to understand these differences because in many of the challenges reported interns are meeting competencies through course education assignments rather than in the field through experiential learning. If experiential learning is indeed a far more effective strategy for mastering core competencies, then these challenges reported by these onsite (traditional) and distance internship directors bring an even greater concern that needs to be addressed.

In Domain 3, there was only one reported challenge from onsite (traditional) internship directors and one CRDN reported as challenging by the distance internship directors. CRDN 3.8 was reported as challenging by a distance internship director. CRDN 3.8 requires the intern to be able to deliver respectful science-based answers to questions that are asked concerning any emerging trends in nutrition. The distance internship director indicated that the right circumstances do not always occur for the intern to meet such a competency meaning that it requires client interaction as well as the client to ask a specific question in order for the intern to be able to answer in such a manner. CRDN 3.9 was reported as challenging by an onsite internship director. CRDN 3.9 requires the intern to engage in several tasks such as coordinate procurement, production, distribution and service while demonstrating and promoting responsible use of resources. The challenge with CRDN 3.9 was that interns are not fully aware of managerial responsibilities to carry out such a task.

These challenges reported in Domain 3 are few, but they do give indication of how challenging it can be as an internship director to ensure that core competencies are met. It is

indeed a challenge when a core competency is based on situational criteria. For example, CRDN 3.8 requires the intern to have client interaction and for the client to ask specific questions so that the intern can provide science-based information regarding emerging trends. If an intern is not met with such an opportunity in a rotation, then it is another competency that must be accomplished outside of the field experience and instead in the classroom. The challenge related to CRDN 3.9 puts the internship director in a position of ensuring that every intern has the knowledge and skills to carry out the tasks required. This instruction may come in the form of the preceptor educating the intern or the internship director using class time to cover these responsibilities. There is no previous research that has been done to collect challenges that internship directors face in carrying out these competencies therefore, there is not one answer to how these challenges can be resolved. Although these are reported challenges throughout this study, these internship directors from onsite (traditional) and distance internship are facing these challenges on their own with their best-known strategies for meeting each of the core competencies.

Only one person found each of these competencies challenging in Domain 3 but that is still an issue that needs to be addressed. The one internship director that found either of these competencies challenging could be overseeing 70 interns. That is 70 interns that the internship director will need to find alternative means for accomplishing either of these competencies.

In Domain 4, there were two CRDNs reported as challenging by distance internship directors and one CRDN reported as challenging from the onsite (traditional) internship directors. CRDN 4.4 was reported challenging by distance internship directors which requires the intern to apply up-to-date nutrition informatics to develop, store, retrieve and disseminate information of data. The challenge reported for CRDN 4.4 is primarily due to a lack of

opportunity in the facility for the intern to complete such a task or there is confusion regarding the competency by the intern and preceptor. CRDN 4.6 was not actually reported as a challenge but rather a suggestion was given from the distance internship participant. CRDN 4.6 requires the intern to propose and utilize procedures to promote sustainability, reduce waste and protect the environment. The distance internship director suggested that financial hardships should also be a part of this competency. CRDN 4.8 which requires the intern to develop a plan to provide or develop a product, program or service that includes a budget, the staffing needs as well as the equipment and supplies needed to carry out the plan. was reported as challenging by onsite (traditional) internship directors. These onsite (traditional) internship directors reported that this competency is dependent on whether the opportunity is available to complete such as task. It was also stated that there is not enough time to fully complete such a task in a rotation and it requires alternative strategies to meet this core competency.

The challenges related to CRDN 4.4 and CRDN 4.8 in Domain 4 have to do with the issue of the internship having reliance on the facility or preceptor to make the scenario or task available for the intern. When faced with such a challenge, the internship director has two options. The first option is to possibly work with the preceptor to find alternative means to meet the competency. The second option is that class time is used to create simulations or assignments so that the interns can meet the competencies. Core competencies are requirements that the interns must meet so there is no option for just looking over them, the internship director must find a strategy to meet all the competencies.

These challenges reported in Domains 1, 2, 3, and 4 are all valid and no one can take away from what one internship director reports as a challenge because every internship program is going to be slightly different in the rotation sites they have available, the preceptors they have,

the experience of every preceptor they have as well as the educational background and skillset of every intern that is accepted in their respective programs. There are so many variables that could lead to challenges even outside of the interpretation of the core competencies. Mentioned later are ideas that these same internship directors identified that would help to possibly resolve some of the challenges that are faced. It would be of great benefit to all internship directors, ACEND, AND as well as CDR to come together to build on the education, field experiences and competency building efforts for future interns. A joint meeting was held in 2013 by the Council for Education in Nutrition and Dietetics, CDR, the Council on Future Practice, Education Committee and the Nutrition and Dietetics Educators and Preceptors Dietetics Program Group. During this meeting, it was stated that the Council on Future Practice, CDR, and ACEND have been working together and will continue to work together to address future education needs. Granted this was over seven years ago but it is inspirational to know that these groups have worked together before and perhaps given the challenges reported in this research study, all groups can meet again to address internship director challenges with devising strategies to meet the core competencies.

The following provides information related to CRDN challenges that are faced by internship directors from both the distance and onsite (traditional) internship programs.

Among the 14 CRDNs that had reported challenges by directors from both onsite (traditional) and distance internships, there were none shared in Domain 1 that were challenging, seven CRDNs from Domain 2 that were challenging, two CRDNs from Domain 3 that were challenging and five CRDNs from Domain 4 that were considered challenging. The information that follows, discusses these shared CRDN-related challenges among both the distance and onsite (traditional) internship directors.

In Domain 1, although there were challenges reported by directors from either the onsite (traditional) or the distance internships, there were no CRDNs with shared reported challenges by both onsite (traditional) and distance internship directors.

In Domain 2, there were seven CRDNs with reported challenges among both onsite (traditional) and distance internship directors. CRDN 2.5 requires the intern be able to assign duties to a Nutrition and Dietetic Technician, Registered (NDTR) or support personnel as appropriate. The comments related to CRDN 2.5 on the qualitative portion of the study revealed that the biggest challenge is due to not every facility having an NDTR on staff in which the intern can refer to for needs of a patient. This fact alone makes the competency very difficult to accomplish within the rotation regardless of whether the intern is in an onsite (traditional) or distance internship.

CRDN 2.6 requires the intern to be able to refer clients or patients to other professionals and services that are needed when beyond the scope of practice for the intern. The comments related to CRDN 2.6 revealed that the biggest challenge among both groups was again, related to the fact that not every facility has the availability of each intern being able to make referrals. Each internship program, whether onsite (traditional) or distance is at the mercy of the facilities that will contract with their respective programs. Therefore, one facility may have opportunities for the intern(s) placed there to accomplish each competency and another facility may not have those same opportunities. This is the challenge that the directors face with this CRDN.

CRDN 2.8 requires the intern to be able to demonstrate negotiation skills. The comments related to CRDN 2.8 centered around the issue that many interns are often not in positions of directly negotiating but rather observing their preceptor engaging in this task. Many of the director participants who identified this as a challenge also shared a common challenge which

was confusion on where to specifically place this competency in a rotation within their respective programs. They stated that it could potentially fall under a clinical rotation task or food service management task or even a community nutrition rotation task. Another shared challenge among the onsite and distance directors was that this is another competency that is dependent on opportunities provided by the preceptor's facility as it would depend on whether the opportunity presented itself during that intern's rotation day.

CRDN 2.9 requires the intern to participate in professional and community organizations. This was another core competency that had shared challenges by both distance and onsite (traditional) internship directors. Those that provided comments indicated that there are not always opportunities for the interns to network. Interns are very busy with graduate work and completing tasks for rotation requirements and while they do have registered dietitian nutritionist preceptors throughout their internship, networking with registered dietitian nutritionists outside this capacity is challenging to coordinate. One internship director stated this challenge is rather met by alternative means of requiring interns to become student members of the National Academy of Nutrition and Dietetics (AND) in order to attend or participate in state AND affiliate board/educational meetings or in their state licensure meetings.

CRDN 2.11 requires the intern to be able to show cultural competence and sensitivity when interacting with clients, colleagues and staff. The comments related to CRDN 2.11 focused primarily on the aspect of cultural diversity and indicating that this is a challenge in many areas across the country. Many internships across the country are not located in an area with a culturally diverse population. This was the challenge reported by some of the internship director participants.

CRDN 2.14 requires that the intern be able to demonstrate advocacy skillsets on a local, state or national level regarding issues or policies that would impact the nutrition and dietetics profession. The main challenge reported by the internship director participants related to CRDN 2.14. included the fact that there is reliance on rotation sites to provide the opportunity for interns to engage in such advocacy. This is a competency that is often completed by other alternative means by the internship director participants who reported challenges.

Among all of the CRDNs, CRDN 2.15 had one of the greatest reported challenges by the internship director participants. CRDN 2.15 requires the intern to be able to practice or role play mentoring and precepting others. The challenges reported for this CRDN centered on the point that interns are not at a level of experience in the field where they should be expected to be mentors or preceptors. Many of the internship director participants stated that this competency is poorly worded and thus confusing to those trying to implement it in their internship.

Domain 3 had two CRDNs with reported challenges among both onsite (traditional) and distance internship directors. CRDN 3.2 also had one of the greatest numbers of reported challenges by the internship director participants. CRDN 3.2 requires the intern to demonstrate competence in conducting nutrition focused physical exams. The undeniable issue with this challenge that many internship directors agreed upon was that many preceptors in rotations do not engage in this activity therefore, there is no opportunity for the intern to actively learn this skillset in the rotation. This is a competency that requires face to face contact and touching the patient or client and COVID-19 has made this a challenge for the internship director participants as well. Having partnered rotation sites for internship programs is something that is valued by internship directors across the country because without rotation sites, there would not be the possibility for internships to function as they do currently. With that said, the comments related

to CRDN 3.6 are like that of many of the previous CRDN challenges and those to follow. CRDN 3.6 requires the intern be able to use effective education and counseling skills to promote behavior change. Every rotation site is bound by what it can actually offer internship program directors in terms of being able to meet specific tasks for meeting the CRDNs. CRDN 3.6 is a challenge for many of the internship director participants because there is not always an opportunity for interns to engage in counseling services in these contracted rotation sites.

Domain 4 was not without its reported challenges by both onsite (traditional) and distance internship director participants. There were five CRDNs with shared challenges by both groups of internship directors.

CRDN 4.1 requires the intern be able to participate in the management of human resources. The common challenge identified regarding CRDN 4.1 was concerning the interns' ability to engage in human resource management functions. It was identified that many preceptors are not involved in human resource activities and therefore are unable to provide an opportunity to meet such a competency. This is likely due to many confidentiality rights within the human resource office responsibilities.

CRDN 4.5 requires the intern to be able to analyze the quality, financial and productivity data that is utilized in planning. The comments related to CRDN 4.5 focused on the inability of the interns to view financial or productivity data when working in each rotation. This information is held by key stakeholders and is not information that is often shared with the public. As a result, internship directors are faced with developing alternative strategies to meet such a competency.

CRDN 4.7 requires the intern to conduct feasibility studies for the rotation site for products, programs or services being offered with consideration given to costs and benefits.

Challenges related to CRDN 4.7 centered around the fact that there are many steps to conducting a feasibility study and that the challenge for these internship directors lies within the short timeframe that the interns have in the rotations. The internship director participants expressed this as the main challenge in developing strategies to accomplish this core competency.

Among all the Domain 4 challenges, CRDN 4.9 had the most reported challenges by the internship director participants. CRDN 4.9 requires the intern to be able to explain the process for coding and billing for nutrition and dietetics services to obtain reimbursement from public or private payers and other systems. The challenge that every director participant reported on this competency was that many RDN preceptors do not conduct coding and billing which makes this competency difficult to design strategies to accomplish within the internship rotations. This is a role that is often carried out by financial claims offices within the organization and the Registered Dietitian Nutritionist (RDN) has no activity in this process.

CRDN 4.10 requires the intern to analyze risks in the nutrition and dietetics profession. The most common challenge reported for CRDN 4.10 was that this competency is poorly worded and vague. Many of the director participants reported that there is confusion on how this competency is to be interpreted. When there is such confusion on the interpretation of such a competency it would be understandable that there would be challenges to develop strategies in which to accomplish this competency.

Even though the quantitative results of this study showed that there are many CRDNs in which there are no significant differences between the director participants' perceptions of challenges among the two groups, it should be noted that this study found that there are challenges, nonetheless. Every challenge reported by each director participant of distance and onsite (traditional) internships in this study should be noted not only by other internship directors

from onsite (traditional) and distance internships across the country but by accrediting agencies such as ACEND as well as the Academy of Nutrition and Dietetics (AND). It is imperative that support be given to internship directors to ensure consistency in opportunities in educating future interns.

Obviously, 19 director participants do not reflect the majority of the dietetic internships around the country here in this research. The 19 participants were, however, representatives among the many who did not have a voice in this research study or who were unable to participate in the study. The concern is that there are perhaps many other dietetic internship directors struggling with finding strategies to meet competencies as well.

Sheehan-Smith and Poe (2016) noted that designing innovative strategies that help the student-interns not only meet the ACEND competencies but also possess the competent skill level to implement or practice them as they move into entry level positions is a major undertaking. They also noted that this undertaking takes a lot of planning and consideration depending on the rotation, preceptor and facility capabilities. These statements summarize the many challenges that are reported by the distance and onsite (traditional) internship directors regarding perceptions of challenges related to the CRDNs in this study. The director participants of both types of internships did not self-report or indicate how much of an "undertaking" and "planning" and "consideration" it takes on their own part to meet each competency. It was noted however, in many of the domains, that the challenges reported did vary and was often dependent on the type of rotation, the facility capabilities and the roles and responsibilities of the preceptor just as Sheehan-Smith and Poe (2016) indicated in their work.

To further address Research Question 1, the internship director participants were given the opportunity to answer the 3 following survey questions: *Given your experience, is there*

anything your organization could do to make the CRDNs you listed as "challenging" less challenging? Is there anything ACEND or the Academy of Nutrition and Dietetics could do to make the CRDNs you listed as "challenging" less challenging? Are there any resources or materials that the Academy of Nutrition and Dietetics could provide to make the CRDNs you listed as "challenging" less challenging?"

Many of the director participants provided a response to each of these questions. The common theme among the distance and onsite (traditional) internship directors when asked about what they could do as an organization to handle the challenges were that they could possibly find and use internal and community resources to develop strategies to meet these competencies. They identified meeting these competencies outside of the rotations by completing tasks during orientation or during class assignments through developing simulations. One director discussed partnering with other university departments to network strategies to meet competencies.

Considering whether there is anything ACEND or the Academy of Nutrition and Dietetics (AND) could do or provide, there were two main themes that the internship directors identified among their suggestions. The first theme identified among the suggestions made by the onsite (traditional) and distance internship directors were the need for resources to be provided by ACEND or AND in the form of training materials, a list of example tasks to accomplish each CRDN or a virtual platform of some sort in which directors can share their strategies for meeting each CRDN. The other main theme identified among the suggestions by the onsite (traditional) and distance internship directors was that ACEND reword or adjust competencies so that they are understandable and can be interpreted by every internship director in the same manner.

One of the major takeaways of this study is that even one challenge or many challenges reported by the director participants are likely shared by other dietetic internship directors around

the country and as research continues, regarding the subject of dietetic internships, it would be of benefit for accrediting agencies to take note of the challenges that internship directors face in implementing competency standards.

Research Question 2 Conclusions

Research Question 2: Is there a significant difference in first-time pass rates on the national registration examination for dietitians between graduates of distance dietetic internships and onsite (traditional) dietetic internships? ACEND defines the first-year pass rate as the percentage of graduates for a dietetic internship who are successful in passing the national registration examination for dietitians within one year of the first attempt. This means that if a graduate finishes an internship in June and the first attempt to pass the national registration examination for dietitians takes place in October of that same year, the intern has until October of the following year to pass the national registration examination for dietitians. The first-year pass rate on the national registration examination for dietitians is a measure in which dietetic internship programs are held to a specific standard by their accrediting agency (Academy of Nutrition and Dietetics, 2018). It should be noted that dietetic interns are encouraged by their internship directors to pass their national registration examination for dietitians on the first attempt for a few reasons.

Many internship directors would agree that the first reason interns are encouraged to pass the national registration examination for dietitians is to see each graduate achieve the goals of becoming an RDN. Additionally, passing the exam on the first attempt saves the graduate money in not having to take the exam again and avoids undue stress that may follow if the graduate would fail the national registration examination for dietitians. Another reason that directors would encourage first attempt pass rates is because the higher number of graduates who pass the

national registration examination on the first attempt ensures these internship programs are helping graduates move towards their career goals in a timely manner.

Program goals and outcomes are important to every dietetics director in both distance and onsite (traditional) internships across the country. There are specific accreditation standards set by ACEND and these are measures by which every dietetic internship uses for the expected program outcomes and goals. These measures of outcomes and goals can be located on every dietetic internship website. One of these specific ACEND accreditation standards that are of primary focus for this study is that dietetics internships' one-year pass rate on the CDR credentialing national registration examination for dietitians is 80% or greater. Every dietetic internship wants to meet ACEND standards of having 80% or better in first-year pass rates however, it is out of all directors' hands because there are many factors involved in graduates' first-time pass rates or first-year pass rates on the national registration examination for dietitians. No dietetic internship wants to fall within the 60%-79% or 40%-59% or even lower because this can put the internship program at risk for probationary issues and accreditation. As can be expected, every internship director will do all that can be done to improve these first-year pass rate percentages but optimally, an internship director can only do so much to influence better pass rates.

The Chi-Square analysis of this research study indicated no significant differences in the national registration examination for dietitians pass rates between distance and onsite (traditional) internships. This was a favorable finding in that it demonstrates the quality of experiences gained by distance internship interns were the same as the experiences gained by the onsite (traditional) internship interns. Given that the quality of experiences gained by both groups of interns are the same, it would also stand to reason that graduates from distance

internships and onsite (traditional) internships are as equally prepared for the national registration examination for dietitians and are able to pass it on the first attempt. First-time pass rates are achieved because of the major undertaking, planning, and resourcefulness of the many dietetic internship directors and the partnered facilities and preceptors around the country (Sheehan-Smith & Poe 2016). It is enlightening to see that even after several years since Post et al. (2006) who compared the outcomes of distance internships with that of onsite (traditional) internships, there is reportedly still no significant differences between the success of the graduates from either an onsite (traditional) or distance internship on the national registration examination for dietitians.

This research study showed that 42% of the onsite (traditional) internships and 45% of the distance internships represented had met ACEND requirements by having 80% or better first-year pass rates on the national registration examination for dietitians during 2019 to 2020. However, while some of the director participants indicated successful 80% or higher first-time pass rates, other directors from this study indicated first-time pass rates that were not as successful. For the next percent ranges there were 29% of the onsite (traditional) internships and 45% of the distance internships represented that fell short of meeting the ACEND required 80% first-year pass rates with a first-year pass rates falling between 60%-79% during this same time period. There were 2% of the representative onsite (traditional) internships and 9% of the representative distance internships who also failed to meet ACEND 80% requirement as the respective internship programs had a first-year pass rate falling between 40%-59% during this same time period. There were no internships represented from distance or onsite (traditional) that had a first-year pass rate below 40%.

Research Question 3 Conclusions

Research Question 3: What are the perceptions of dietetic internship directors related to student learning of the ACEND Core Competencies and the influence on first-time pass rates on the national registration examination for dietitians for graduates of traditional onsite internships and/or distance internships?

To determine the answer to this question, the internship directors were instructed to do the following: "*Please provide your thoughts related to ACEND Core Competencies and their influence on first-time pass rates on the national registration examination for dietitians for graduates of traditional onsite internships and/or distance internships*." There were many rich statements provided in relation to this question, but the most common theme shared between many internship directors of the two groups was that the national registration examination for dietitians does not correlate with the core competencies that are achieved during the internship programs but rather tests students on knowledge obtained at an undergraduate level. This common theme indicated that the national registration examination for dietitians tests graduates' knowledge on nutrition-related information and nutrition principles acquired in their courses during the four-year dietetics bachelor's program. One onsite internship director not only agreed with this common theme but made another powerful statement. The director suggested that if the national registration examination for dietitians is more along the lines of undergraduate knowledge, meaning that the information tested is from knowledge gained during the undergraduate course curriculum, then perhaps, the exam should be taken following the student graduating from the undergraduate dietetics program prior to entering a dietetics internship.

Mastering ACEND core competencies during internships are seen as preparing the graduate for entry level jobs within the field of dietetics. However, to practice as an RDN, the

graduate of the distance or onsite (traditional) dietetics internship must successfully pass the national registration examination for dietitians. The vital importance of such statements that were made concerning the relationship between the ACEND core competency requirements and its' influence on first-time pass rates is that there is indeed a perceived disconnect between achieving the required core competencies that is considered appropriate for preparing the graduate for RDN entry level jobs and passing the national registration examination for dietitians which is also required for these same entry level jobs.

Implications

While there were not many significant differences found between the distance and onsite (traditional) internships, there were many challenges identified by the directors of both internships. There is no simple answer to how these challenges can be resolved other than internship directors, preceptors, ACEND and the Academy of Nutrition and Dietetics (AND) working together to find ways to support those who are having challenges and finding ways that these core competencies can be met in the field rather than by alternative means in the classroom.

Some of the biggest implications here are centered around the common themes of the statements mentioned by the onsite (traditional) and distance internship director participants regarding the challenges of designing strategies for meeting CRDNs throughout this research.

Facilities and Preceptor Roles. One of the most common themes of the challenges presented by the internship directors was related to the fact that internship programs are bound by the capabilities of facilities and the roles and responsibilities of the preceptors. Some of the facilities may have a number of resources available in which could prove beneficial to an internship director in developing strategies to meet core competencies. Other facilities may have

very little resources and can only assist in meeting a few of the core competencies. It should be noted that all facility partnerships and preceptors are valuable and appreciated by every internship director no matter how many competencies they can help fulfil. It is just a fact that some facilities and preceptors are limited to what they can do and what experiences they can provide, and it is at this time, many internship directors are faced with challenges of finding alternative strategies to meet these competencies.

Many internship directors reported that they are often faced with the challenge that many preceptors do not engage in certain tasks that are listed in the ACEND core competencies. Examples of such tasks include, but are not limited to, billing and coding activities, implementing nutrition focused physical examinations (NFPE) or engaging in human resource activities. Some preceptors may engage in such tasks but not have the opportunity to do so on a consistent basis. Many RDNs do not work in facilities that hire NDTRs and therefore, it is impossible to meet the competency requirement of referring services to an NDTR during a rotation. These are true challenges, but many internship directors identified that strategies have been implemented in order to accomplish these competencies through alternative means by completing in-class projects or assignments, conducting simulations or having the preceptor to discuss how such a service would be conducted with the intern. Internship directors are doing what they can and strategizing as best they can with the resources that they have to develop strategies to meet these challenging competencies. It would be of benefit for accrediting agencies and internship directors across the country to take notice and begin devising some type of platform where strategies can be shared so that there is as much a commonality in meeting the core competencies as possible. As indicated by many internship directors, this platform could be

a virtual platform link that could be sent out to a listserv or ACEND could provide a list of examples of how competencies can be met by interns.

Vague Wording of Competencies. This is another issue that many internship directors identified throughout the research study. The unfortunate circumstance here is that there is no way to change the wording and the internship director is left to their own interpretation of what the competency is and then develop strategies to accomplish it. Granted, there are opportunities for internship directors to develop professional relationships in the field and they can use each other as a resource. However, as identified earlier, it would be very helpful for there to be some type of virtual platform where all internship directors can access and share their strategies for meeting competencies. Perhaps it will take one internship director getting such a platform started and sharing it with a listserv of other internship directors around the country. Another idea that was identified by a few internship director participants was that ACEND could provide examples of how the internship programs can best accomplish these competencies. Vague wording can lead to confusion and miscommunication but if examples are given, it could provide a better idea of what is intended.

National Registration Examination for Dietitians. The most noted perceptions of the internship directors in reference to the national registration examination for dietitians is the fact that the exam does not align with the competencies. Many of the internship director participants noted that the exam does not test the graduates on competencies but rather on education principles that they learn in undergraduate programs. It was noted by one internship director that perhaps the exam should be given to a graduate after they have completed the undergraduate program and then they would be eligible for completing an internship. One internship director stated frustration in the fact that some of their best student intern graduates fail the national

examination for dietitians on their first attempt and then repetitive attempts. The question was also made as to why the exam is getting more difficult and thus more people failing to pass the exam when the exam is supposed to test entry level education. A suggestion made by many of the internship directors was that ACEND and the Commission on Dietetic Registration (CDR) should be aligning themselves more. By doing so, the skills and education that is needed to meet the core competencies in internships are aligned with the expected knowledge needed to pass the national registration examination for dietitians.

COVID-19. COVID-19 has been identified as causing many challenges for internship directors to be able to carry out strategies to meet competencies. Such challenges identified in this research study included the lack of ability for the interns to have physical contact with patients to conduct the NFPE or to engage in counseling or provide education services. COVID-19 has made it difficult for networking and internship directors have been forced to find alternative strategies for this competency. Not mentioned but certainly a known issue related to COVID-19 is the removal of many interns from the facilities due to safety concerns of the staff and patients. COVID-19 has certainly created its own challenges for internship directors. A couple internship directors related COVID-19 to the fact that their respective graduates are failing the national registration examination for dietitians because the typical internship experiences have been disrupted by COVID-19 issues.

COVID-19 has been an unprecedented event and with it, many challenges but it is vital that internship directors work together across the country as well as with ACEND and AND to continue to find ways together to overcome these challenges for the betterment of intern experiences and outcomes of internship programs.

Recommendations For Further Study

After giving considerable thought to the emergent themes in this study, the following are recommendations for further study:

1. An internship director in this study mentioned that the success of graduates of internship programs comes from that of their preceptors who are a key stakeholder within the educational framework of the intern. With this in mind, I would recommend that a study focused on obtaining information comparing onsite and distance preceptor perceptions of success in preparing an intern for success in readiness for the national registration examination for dietitians
2. Graduates of internship programs whether onsite or distance would hold valuable information on what made them successful having a first-time passing score on the national registration examination for dietitians. This study would gather information from intern graduates who have successfully passed the national registration examination on first attempt and compare success strategies of onsite versus distance internship graduates.
3. Conversely, as mentioned by some of the internship directors, many amazing and successful graduates of the internship programs have difficulty passing the national registration examination for dietitians on the first attempt and struggle from that point on trying to attempt to pass the exam. A study focusing on the perceptions of graduates of onsite and distance internships who have implemented several strategies to pass the national registration examination for dietitians but have failed to do so and why that is would give valuable information to the dietetic education community.

4. Many of the internship directors identified that having a database of some sort provided by ACEND or AND showing how other programs are utilizing strategies to meet competency standards would be quite helpful. A recommended study would be comparing how these strategies differ from onsite internship versus distance internship by gathering information from internship directors on strategies they implement to achieve each individual core competency.
5. Interprofessional collaboration and education is something that is not specifically touched in this research study but during the literature review, it was noted that the dietetic educational steps follow that of many other health care fields. Understanding that many of the duties of the dietitian in the field include interprofessional collaboration and many of the experiences in the internship programs include interprofessional education, a study focusing on whether there are competency gains involved in the participation of interprofessional collaboration and education set up by preceptors in their facilities for student interns in distance and traditional onsite internship programs.
6. If the national registration examination for dietitians truly does place more focus on knowledge and skills acquired in the undergraduate programs, it may be beneficial to survey graduates of internship programs (onsite and distance) about their experiences with the national registration examination for dietitians to determine factors perceived for success or failure.
7. If there was another study to compare director perceptions of onsite and distance internships and utilize the same methods of this research study, it would possibly benefit the study results to also have an additional question that asks each director their number of years of experience as a director.

Conclusion

There is limited research in the dietetic field related to perceptions of internship directors. This study provided a voice to the internship director participants for other internship directors whether they are directing onsite (traditional) or distance internship programs. This study gave indication to the challenges that these directors face daily in their positions. It was noted that there were not many significant statistical differences between the two groups, but directors of each program identified specific challenges related to implementing strategies for many competencies. This study also concluded with providing not only the challenges that directors are facing but also constructive means by which educational leaders in dietetic internship programs could benefit by way of support from ACEND and AND. There is also the potential for this study to be helpful to these leaders in ACEND and AND to hear the voice of the internship directors represented in this study and the challenges that are faced.

Competency-based education has been implemented increasingly over the last decade among many healthcare education programs (Frank, Snell, Cate, Holmboe, Carraccio, Swing, Harris, Glasgo, Cambell, Dath, Harden, Iobst, Long, Mungroo, Richardson, Sherbino, Silver, Taber, Talbot & Harris, 2010). Perhaps, this study could benefit other healthcare education programs who are weighing in on the challenges in meeting required competence standards by their respective accrediting agencies. This study could also spark interest for future researchers to build upon this study to determine the influences of intern success on the national registration examination for dietitians and to resolve the challenges that so many directors face in meeting required standards.

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Personal Interviews

Gould, Mary Kathryn EdD, RDN, LD, *Personal communication.* October 16, 2020.

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Figure References

Figure 1: Charney, P. & Peterson, S. (2013). *Critical thinking skills in nutrition assessment and diagnosis. Academy of Nutrition and Dietetics.* https://eatrightpro.org/practice/position-and-practice-papers/practice-papers/practice-paper-critical-thinking-skills

APPENDIX A: IRB LETTER

MARSHALL UNIVERSITY
www.marshall.edu

Office of Research Integrity
Institutional Review Board
One John Marshall Drive
Huntington, WV 25755

FWA 00002704

IRB1 #00002205
IRB2 #00003206

August 24, 2021

Charles Bethel, Ed.D.
Leadership Studies

RE: IRBNet ID# 1783349-1
At: Marshall University Institutional Review Board #2 (Social/Behavioral)

Dear Dr. Bethel:

Protocol Title:	[1783349-1] Perceptions of Competency in Distance Dietetic Internships Versus Traditional Onsite Dietetic Internships: Are Internship Graduates Prepared For The National Registration Examination For Dietitians?
Site Location:	MUGC
Submission Type:	New Project APPROVED
Review Type:	Exempt Review

In accordance with 45CFR46.104(d)(2), the above study was granted Exempted approval today by the Marshall University Institutional Review Board #2 (Social/Behavioral) Designee. No further submission (or closure) is required for an Exempt study **unless** there is an amendment to the study. All amendments must be submitted and approved by the IRB Chair/Designee.

This study is for student Tim Bender.

If you have any questions, please contact the Marshall University Institutional Review Board #2 (Social/Behavioral) Coordinator Anna Robinson at (304) 696-2477 or robinsonn1@marshall.edu. Please include your study title and reference number in all correspondence with this office.

Sincerely,

Bruce F. Day, ThD, CIP
Director, Office of Research Integrity

APPENDIX B: SURVEY

Internship Director Survey - Perceptions of Competency Challenges: Distance versus Onsite Internships

Start of Block: Default Question Block

Q1 What type of dietetic supervised practice internship do you direct?

- Traditional Onsite Internship (1)
- Distance Internship (2)
- Both Traditional Onsite and Distance Internship (3)

Q2 How many student interns does your internship program currently accept?

_____

Page Break

Q3 The following portion of the survey is based upon the Accreditation Council for Education in Nutrition and Dietetics (ACEND) Core Competencies for the Registered Dietitian Nutritionist that students of a dietetic internship program should achieve. This section targets Domain 1. Scientific and Evidence Base of Practice: Integration of scientific information and translation of research into practice.

Based on your perceptions, do you find any of the following competencies to be challenging to devise strategies to meet. (Yes or No)

Q4 CRDN 1.1: Select indicators of program quality and/or customer service and measure achievement of objectives.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q5 CRDN 1.2: Apply evidence-based guidelines, systematic reviews, and scientific literature.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q6 CRDN 1.3: Justify programs, products, services, and care using appropriate evidence or data.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q7 CRDN 1.4: Evaluate emerging research for application in nutrition and dietetics practice.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q8 CRDN 1.5: Conduct projects using appropriate research methods, ethical procedures, and data analysis.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q9 CRDN 1.6: Incorporate critical thinking skills in overall practice.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Page Break

Q10 The following portion of the survey is based upon the Accreditation Council for Education in Nutrition and Dietetics (ACEND) Core Competencies for the Registered Dietitian Nutritionist that students of a dietetic internship program should achieve. This section targets Domain 2. Professional Practice Expectations: Beliefs, values, attitudes and behaviors for the professional

dietitian nutritionist level of practice.

Based on your perceptions, do you find any of the following competencies to be challenging to devise strategies to meet. (Yes or No)

Q10 CRDN 2.1: Practice in compliance with current federal regulations and state statutes and rules, as applicable and in accordance with accreditation standards and the Scope of Nutrition and Dietetics Practice and Code of Ethics for the Profession of Nutrition and Dietetics.

- ○ Yes (If "YES": Please state what you find most challenging) (1) _____
- ○ No (2)

Q11 CRDN 2.2: Demonstrate professional writing skills in preparing professional communications.

- ○ Yes (If "YES": Please state what you find most challenging) (1) _____
- ○ No (2)

Q12 CRDN 2.3: Demonstrate active participation, teamwork, and contributions in group settings.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q13 CRDN 2.4: Function as a member of interprofessional teams.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q14 CRDN 2.5: Assign patient care activities to NDRs and/or support personnel as appropriate.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q15 CRDN 2.6: Refer clients and patients to other professionals and services when needs are beyond individual scope of practice.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q16 CRDN 2.7: Apply leadership skills to achieve desired outcomes

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q17 CRDN 2.8: Demonstrate negotiation skills.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q18 CRDN 2.9: Participate in professional and community organizations.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q19 CRDN 2.10: Demonstrate professional attributes in all areas of practice.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q20 CRDN 2.11: Show cultural competence/sensitivity in interactions with clients, colleagues, and staff.

- ○ Yes (If "YES": Please state what you find most challenging) (1) _____
- ○ No (2)

Q21 CRDN 2.12: Perform self-assessment and develop goals for self-improvement throughout the program.

- ○ Yes (If "YES": Please state what you find most challenging) (1) _____
- ○ No (2)

Q22 CRDN 2.13: Prepare a plan for professional development according to Commission on Dietetic Registration guidelines. CRDN 2.14: Demonstrate advocacy on local, state or national legislative and regulatory issues or policies impacting the nutrition and dietetics profession.

- ○ Yes (If "YES": Please state what you find most challenging) (1) _____
- ○ No (2)

Q23 • CRDN 2.14 Demonstrate advocacy on local, state or national legislative and regulatory issues or policies impacting the nutrition and dietetics profession.

- ○ Yes (If "YES": Please state what you find most challenging) (1) _____
- ○ No (2)

Q24 CRDN 2.15: Practice and/or role play mentoring and precepting others.

- ○ Yes (If "YES": Please state what you find most challenging) (1) _____
- ○ No (2)

Q25 The following portion of the survey is based upon the Accreditation Council for Education in Nutrition and Dietetics (ACEND) Core Competencies for the Registered Dietitian Nutritionist that students of a dietetic internship program should achieve. This section targets Domain 3. Clinical and Customer Services: Development and delivery of information, products and services to individuals, groups and populations.

Based on your perceptions, do you find any of the following competencies to be challenging to devise strategies to meet. (Yes or No)

Q26 CRDN 3.1: Perform the Nutrition Care Process and use standardized nutrition language for individuals, groups, and populations of differing ages and health status, in a variety of settings.

- ○ Yes (If "YES": Please state what you find most challenging) (1) _____
- ○ No (2)

Q27 CRDN 3.2: Conduct nutrition focused physical assessment.

- ○ Yes (If "YES": Please state what you find most challenging) (1) _____
- ○ No (2)

Q28 CRDN 3.3: Demonstrate effective communication skills for clinical and customer services in a variety of formats and settings.

- ○ Yes (If "YES": Please state what you find most challenging) (1) _____
- ○ No (2)

Q29 CRDN 3.4: Design, implement, and evaluate presentations to a target audience.

○ Yes (If "YES": Please state what you find most challenging) (1)
_____

○ No (2)

Q30 CRDN 3.5: Develop nutrition education materials that are culturally and age appropriate and designed for the educational level of the audience.

○ Yes (If "YES": Please state what you find most challenging) (1)
_____

○ No (2)

Q31 CRDN 3.6: Use effective education and counseling skills to facilitate behavior change.

○ Yes (If "YES": Please state what you find most challenging) (1)
_____

○ No (2)

Q32 CRDN 3.7: Develop and deliver products, programs, or services that promote consumer health, wellness, and lifestyle management.

○ Yes (If "YES": Please state what you find most challenging) (1)
_____

○ No (2)

Q33 CRDN 3.8: Deliver respectful, science-based answers to client questions concerning emerging trends.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q34 CRDN 3.9: Coordinate procurement, production, distribution, and service of goods and services, demonstrating and promoting responsible use of resources.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q35 CRDN 3.10: Develop and evaluate recipes, formulas, and menus for acceptability and affordability that accommodate the cultural diversity and health needs of various populations, groups, and individuals.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q36

The following portion of the survey is based upon the Accreditation Council for Education in

Nutrition and Dietetics (ACEND) Core Competencies for the Registered Dietitian Nutritionist that students of a dietetic internship program should achieve. This section targets Domain 4. Practice Management and Use of Resources: Strategic application of principles of management and systems in the provision of services to individuals and organizations.

Based on your perceptions, do you find any of the following competencies to be challenging to devise strategies to meet. (Yes or No)

Q37 CRDN 4.1: Participate in management of human resources.

- ○ Yes (If "YES": Please state what you find most challenging) (1) _____
- ○ No (2)

Q38 CRDN 4.2: Perform management functions related to safety, security, and sanitation that affect employees, customers, patients, facilities, and food.

- ○ Yes (If "YES": Please state what you find most challenging) (1) _____
- ○ No (2)

Q39 CRDN 4.3: Conduct clinical and customer service quality management activities

○ Yes (If "YES": Please state what you find most challenging) (1)
_____

○ No (2)

Q40 CRDN 4.4: Apply current nutrition informatics to develop, store, retrieve, and disseminate information and data.

○ Yes (If "YES": Please state what you find most challenging) (1)
_____

○ No (2)

Q41 CRDN 4.5: Apply quality, financial, and productivity data for use in planning.

○ Yes (If "YES": Please state what you find most challenging) (1)
_____

○ No (2)

Q42 CRDN 4.6: Propose and use procedures as appropriate to the practice setting to promote sustainability, reduce waste, and protect the environment.

○ Yes (If "YES": Please state what you find most challenging) (1)
_____

○ No (2)

Q43 CRDN 4.7: Conduct feasibility studies for products, programs, or services with consideration of costs and benefits.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q44 CRDN 4.8: Develop a plan to provide or develop a product, program, or service that includes a budget, staffing needs, equipment, and supplies.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q45 CRDN 4.9: Explain the process for coding and billing for nutrition and dietetics services to obtain reimbursement from public or private payers, fee-for-service and value-based payment systems.

- ○ Yes (If "YES": Please state what you find most challenging) (1)
  _____
- ○ No (2)

Q46 CRDN 4.10: Analyze risk in nutrition and dietetics practice

- ○ Yes (If "YES": Please state what you find most challenging) (1) _____
- ○ No (2)

Q47 Given your experience, is there anything your organization could do to make the CRDNs you listed as “challenging” less challenging?

_____

Q48 Is there anything ACEND or the Academy of Nutrition and Dietetics could do to make the CRDNs you listed as “challenging” less challenging?

_____

Q49 Are there any resources or materials that the Academy of Nutrition and Dietetics could provide to make the CRNDs you listed as “challenging” less challenging?

_____

Q50 What is the approximate first-time pass rate for the national registration examination for dietitians for your graduates within the past year?

- ○ 80% - 100% (1)
- ○ 60% - 79% (2)
- ○ 40% - 59% (3)
- ○ 20% - 39% (4)
- ○ 0% - 19% (5)

Q51 Please provide your thoughts related to ACEND Core Competencies and their influence on first-time pass rates on the national registration examination for dietitians for graduates of traditional onsite internships and/or distance internships.

_____

End of Block: Default Question Block

APPENDIX C: TABLE 8

Table 8: This section targets Domain 1. Scientific and Evidence Base of Practice: Integration of scientific information and translation of research into practice.

Perception of Challenges						
	Onsite (Traditional) Program Responses				Distance Program Responses	
CRDN	NO	YES	YES COMMENTS	NO	YES	Yes Comments
1.1	7	0		11	1	Participant #5: It is vague and as the program directors we need to pick a specific learning activity to go with each CRDN picking a learning activity that all interns can do at their site is hard.
1.2	7	0		12	0	
1.3	5	2	Participant #6: For students to actually get to see data Participant #18: I think the word "justify" is odd and is confusing to preceptors who had difficulty evaluating. They would often mark N/A on the evaluation because of the strange wording. We had to accomplish this competency through a written assignment to be sure every intern was evaluated on it.	12	0	
1.4	7	0		12	0	
1.5	7	0		10	2	Participant #3: Very few RDs are involved in research. This is a poorly worded competency. Participant #9: Lack of time.
1.6	7	0		12	0	

APPENDIX D: TABLE 9

Table 9: This section targets Domain 2. Professional Practice Expectations: Beliefs, values, attitudes and behaviors for the professional dietitian nutritionist level of practice.

Perception of Challenges						
Onsite (Traditional) Program Responses				Distance Program Responses		
CRDN	NO	YES	YES COMMENTS	NO	YES	Yes Comments
2.1	6	1	Participant #6: Preceptors don't always know what regulations they have to follow.	12	0	
2.2	7	0		12	0	
2.3	7	0		12	0	
2.4	5	2	Participant #4: Interns have had a hard time being a member of interprofessional teams Participant #17: Some of the hospitals we send interns to do not have RDs that participate in patient rounds or IP team meetings.	12	0	
2.5	3	4	Participant #4: Sometimes depending on the situation Participant #6: Students are often not given the privilege nor trained on it. Many sites do not have staff that RDs assign work to. Participant #16: There is not always the opportunity for the interns to assign	5	7	Participant #1: DTRs aren't always available. Participant #3: We use diet aides for this one. Participant #5: This one is hard. Not all preceptors assign patient care activities to support personnel or they don't see what they do as assigning care so this is hard for interns to do. Participant #8: This varies by location. NDTRs are

			patient care activities. Very challenging. Participant #18: This is difficult in my internship because there are very few NDTRs in the area. I had to expand this to include dietary aides but this was often difficult for interns to complete due to the structure of various facilities.			not in many locations and the other support personnel would be hourly food service workers so limited in time in that area. Participant #9: I don't think it is appropriate for interns to do this Participant #13: Sometimes not in scope of RDN at a facility. Participants #15: Not all facilities that my interns rotate have NDTRs.
2.6	6	1	Participant #16: There is not always the opportunity for the interns to refer to other professionals. Very challenging.	9	3	Participant #5: Can be hard. There is no guarantee that in a particular rotation a student will see a patient who has needs that require a referral. Participant #8: Depends. Often the DC nurse takes care of much of this and the intern may not be involved. Participant #14: This is a bit harder to measure. Interns do not always recognize when they have done a referral.
2.7	5	2	Participant #4: It is difficult to apply leadership skills as an intern. Managerial skills yes…but not always leadership Participant #6: The leadership definition is being watered down	12	0	Participant #1: Pretty vague

			tremendously by this competency			
2.8	4	3	Participant #4: Lack of clarity and opportunity of this CRDN Participant #17: This is hard to demonstrate. Interns take part in HR functions but mostly observe. But they do "negotiate" somewhat during patient educations. Not sure if this is what ACEND means. Participant #18: This is challenging because you never know when a situation is going to present itself for an intern to participate in the activity. I had to really think about how to interpret this competency and decided that each time you work with a patient/client to make behavior changes you are essentially negotiating so I changed the evaluation of this competency from FSM to MNT.	10	2	Participant #1: Interns aren't in negotiating situations Participant #5: Can be hard. Not sure whether to put this in FSM rotation or clinical or community. They all may need negotiation but again there is no guarantee that negotiation skills will be needed in any particular time period with a preceptor in a particular rotation.
2.9	5	2	Participant #6: While important, hard to achieve Participant #20: Finding opportunities for both. Defining	9	3	Participant #8: With COVID it has been much harder for them to participate in networking with professionals. We require it is an opportunity with networking.

			how much time should be committed to them.			Participant #14: COVID has made this CRDN more challenging. Hopefully this year will be easier. I want them to have the networking! Participant #19: In the past we have found this challenging but we are now requiring students to be members of the academy and take part in academy or licensure events/meetings. This will be beneficial to students in the future as they become members of these professional organizations as RDNs. Most challenging another cost for the students.
2.10	7	0			11	1	Participant #5: This is awkward only because it says "all" and usually my interns meet a CRDN once and call it good. We are asked to put this CRDN in ONE specific rotation but it say "all" which doesn't make sense to me.
2.11	6	1	Participant #18: This can be difficult due to the location of the internship. We do not live in a culturally diverse area. So this competency is more difficult to meet.		11	1	Participant #2: Some areas of the U.S. have more options for working with diverse groups than others.
2.12	6	0			12	0	
2.13	7	0			9	3	Participant #1: Interns don't yet know what they want to do as an RD

						Participant #3: They complete the Wizard but it makes no sense to them. Participant #5: We are using tools on the CDR website that disappeared mid-year making our original plan unworkable.
2.14	5	1	Participant #6: Students are often unaware and don't want to speak up in environments where they are professionally the youngest	9	3	Participant #1: Seems like a DPD project Participant #12: Yes…this can be hard to meet depending on which sites the interns select to do their rotations. Participant #15: This competency is assigned to our community rotation therefore being a distance program, some of the community sites chosen by our interns don't have a focus on policies therefore a separate project needs to be created to fulfill this competency.
2.15	5	2	Participant #18: This has been very challenging and I still don't understand why this has been a competency. Interns are not ready to be mentors or preceptors. We have incorporated an assignment with undergraduate students but I do not think interns are experienced enough to act in either of these capacities.	7	5	Participant #1: Not sure what they are going for with this one. Participant #3: Again, poorly worded. Participant #9: Interns cannot be mentors. They do not have the life experience Participant #13: This is hard to meet from a distance or non-RDN preceptor

	Participant #20: Mentoring is challenging. We match new interns with current interns but neither side are interested so we are struggling how to make this a better experience.		Participant #19: This is very difficult to meet. Most challenging I feel interns don't have enough experience to be able to provide adequate feedback as "preceptor". We have had students mentor undergraduate students and provide feedback on case studies to meet this competency. It seems to work okay but is always changing to enhance their experience.

APPENDIX E: TABLE 10

Table 10: This section targets Domain 3. Clinical and Customer Services: Development and delivery of information, products and services to individuals, groups and populations.

Perception of Challenges						
Onsite (Traditional) Program Responses				Distance Program Responses		
CRDN	NO	YES	YES COMMENTS	NO	YES	Yes Comments
3.1	7	0		12	0	
3.2	3	3	Participant #4: Sometimes, this is still not common practice among dietitians Participant #6: Some places don't do this so they can't train students on it. Gradually getting better. Participant #18: This had to be incorporated into a didactic assignment because it is not possible to guarantee that all interns would experience conducting the nutrition focused physical exam since not all dietitians do this.	6	6	Participant #1: Not a lot of practicing RDs are doing this. Participant #3: We find very few preceptors actually do this. We simulate this in orientation. Participant #5: COVID has made it hard for students to get in clinical setting and especially difficult to touch patients. It is hard for them to find a person in their "pod" to practice this with. Participant #13: Some facilities are still not conducting NFPE Participant #14: Again, COVID has made this challenging for the past year and half. Even many of the RDs are not conducting NFPA. Participant #19: Many of our healthcare facilities do not perform these so we must meet them in the didactic setting and hope that interns will see them again in clinical rotations.
3.3	7	0		12	0	
3.4	7	0		12	0	
3.5	6	0		12	0	

3.6	5	2	Participant #4: Education no issue Counseling – yes. This skill is difficult Participant #6: Students are often permitted to actually do counseling.		10	2	Participant #5: Not all community or clinical rotations have opportunities to practice this under supervision. Participant #8: They provide a counseling but hard to evaluate in the hospital setting. We have two weeks of OP but this isn't long enough to see the change.
3.7	7	0			11	1	
3.8	6	0			12	0	Participant #5: It is hard to assume that a client will come up with a question like this during a rotation so we do "role plays" "case studies" instead
3.9	6	1	Participant #6: Students often don't gain enough insight into the managerial aspects		12	0	
3.10	7	0			12	0	

APPENDIX F: TABLE 11

Table 11: This section targets Domain 4. Practice Management and Use of Resources: Strategic application of principles of management and systems in the provision of services to individuals and organizations.

Perception of Challenges						
Onsite (Traditional) Program Responses				Distance Program Responses		
CRDN	NO	YES	YES COMMENTS	NO	YES	Yes Comments
4.1	4	3	Participant #4: Really difficult to really experience the management of human resources as an intern Participant #6: Students are most kept away from HR issues. At best they are being told how it is done. And given the confidentiality of actual situations that is how it has to be in practice. Accordingly, it can't be "participate" it can only be "get trained on". Participant #18: I think this is difficult to meet in supervised practice because interns are not experienced enough to manage employees. We have been able to meet this competency with theme meals but it can be challenging depending on the facilities that are used for supervised practice.	9	3	Participant #1: Interns often aren't allowed to participate in this. Participant #3: We consider training of employees to meet this competency Participant #5: Most preceptors don't do this so finding some way to do this is hard.
4.2	7	0		12	0	
4.3	7	0		12	0	
4.4	7	0		10	2	Participant #12: Yes this can also be challenging

						based on where the interns do their rotation Participant #15: Interns and preceptors have difficulty in interpreting what this competency requires so it takes a little more effort on our end to ensure the project/experience assigned to the intern is appropriate.
4.5	5	2	Participant #6: Students are not always allowed to see financial and productivity data. Participant #18: Most facilities don't or cannot share their financial data with interns so this can be challenging to meet. We decided to evaluate this in a classroom assignment to make sure all interns were about to complete.		11	1	Participant #12: Oftentimes we have to review this during our class day instruction.
4.6	7	0			11	1	Participant #3: How about identifying financial hardships with this.
4.7	5	2	Participant #6: Conducting a study takes too much time for one rotation. Students can design but not implement or vice versa. Participant #18: This can be very challenging depending on the length of time the intern is in the facility. To properly complete a feasible		11	1	Participant #9: Too many competencies/Lack of time

			study you would need several weeks and many of our rotations don't last long enough to do this well.			
4.8	5	2	Participant #4: Can be achieved on a basic level Participant #18: This is also difficult to accomplish in a short time span and also very difficult to ensure interns are having similar experiences in their rotations. Ideally we would be able to meet this competency in supervised practice but to evaluate we have created a classroom assignment to cover this competency. My concern with some of the competencies is that they are too difficult to meet in supervised practice which is going away from the purpose from hands on experience. If the competencies are so unusual we have to do them in class…defeating the purpose.	12	0	
4.9	4	3	Participant #6: Still difficult. It changes very fast and can really only be learned by doing. Not enough sites train students on this.	6	6	Participant #1: RDs are not doing this Participant #3: Again, very few preceptors do this. Participant #5: Many RDs aren't involved in this so it

			Participant #16: This is a very complicated topic that many RDs do not have a grasp on so expecting the interns to explain is a challenge. Participant #18: We have a limited number of dietitians in our area who do this so it is hard to make sure that the interns get a good understanding. This is also a very complex concept. We have an assignment but this one is very challenging.			is hard for preceptors to help interns learn this. Participant #13: Not many opportunities to review and understanding billing and coding especially in certain settings like inpatient Participant #15: Not all preceptors are involved in the coding and billing so it is suggested that they allow the intern to shadow a person at their facility in that department so that they are able to fulfill that competency. Participant #19: Some facilities have billing departments that take care of this of the RDN. Students meet this competency in the didactic setting in an assignment and we hope they see it again in rotations.
4.10	4	3	Participant #4: This is an area often not experienced, just discussed. Participant #6: This is still poorly defined. Nutrition risk – no problem. Business risk – not enough background knowledge for students and most faculty and preceptors. Participant #18: It would be nice ACEND would provide examples of how they	10	2	Participant #1: Not sure what they are going for here. Participant #13: This is too vague

	think that competencies could be met. When I first read this competency my thoughts were in the financial realm and that this competency would need to be met in food service management. After thinking more about it in MNT, dietitians are trying to determine the nutritional risk of their patients so the evaluation shifted to MNT.		

APPENDIX G: TABLE 12

Table 12: Given your experience, is there anything your organization could do to make the CRDNs you listed as "challenging" less challenging?

Onsite (Traditional) Responses	Distance Responses
Participant #4: I think realistic needs to be considered. Yes. Those are skills that are desired but can competency be achieved through an internship. Participant #6: Doing what we can. Participant #7: N/A Participant #16: No Participant #17: Left Blank Participant #18: I don't think the university could do anything to make the competencies less challenging. Participant #20: Identify consistent methods for interns to connect with professional/community organizations.	Participant #1: Left Blank Participant #2: I don't so. We only one competency challenging to meet. They are actually quite easy. Participant #3: Cover in orientation Participant #5: We could move all of the challenging ones into case studies or simulations that interns do with us instead of preceptors. Much more class time but it is a way. Participant #8: We have worked on this for years and I put challenging because COVID has impacted some and we have given more attention to the areas because they are harder to achieve. Participant #9: I have strong support within my institution. When the leadership competency was added I approached … to develop training for our interns and they willingly obliged. Participant #10: Left Blank Participant #11: Left Blank Participant #12: As a distance DI we allow for our interns to select their own rotations. If we decided to mandate certain rotations we could assure that all CRDNs would be easily met. Participant #13: We provide more detailed examples or projects Participant #14: Not with 2017 standards. 2022 is going to be a huge challenge on some of the CRDNs because even the practicing

	RDs are not trained on the activity. We will find alternative learning but UHG! Participant #15: We could try to incorporate possible sessions during orientation or redesign our curriculum so that they would help to fulfill these competencies. Participant #19: We continue to try new things and adapt them. I think this is how we are working to make them "less challenging". Participant #21: Left Blank

APPENDIX H: TABLE 13

Table 13: Is there anything ACEND or the Academy of Nutrition and Dietetics could do to make the CRDNs you listed as "challenging" less challenging?

Onsite (Traditional) Responses	Distance Responses
Participant #4: Left Blank Participant #6: Provide alternative means of training. That is something the pandemic was actually good for. Participant #7: N/A Participant #16: Adjusting the wording to adjust the expectations of the interns. Participant #17: Yes. They have already changed some of these for 2022 standards. Participant #18: I think it would be helpful to have a list of potential activities that could be used to meet competencies. Participant #20: Share examples of how competencies are met.	Participant #1: Use less vague wording. Give examples of activities that would meet competencies. Participant #2: ACEND could provide a virtual platform of ideas of how others are meeting the competencies. Participant #3: Word these differently Participant #5: Allow us to get "credit" when interns meet CRDNs in any rotation. Right now I have to grade myself as 9/10 or 8/10 because though all students meet the CRNDs not all meet it with the original learning activity in the rotation where it was supposed to happen. When I don't meet 100% I need to assess that CRDN yearly. It is always something that I can fix because the right client might not show up in that rotation. I also find it challenging that we must create specific learning activities for each CRDN even if the CRDN is very generic like "professionalism" or "critical thinking". Participant #8: Some of it needs to be adjusted for how healthcare is today such as very limited employment of NDTRs so hard to meet standards. Participant #9: Eliminate them!!!! Too many too redundant. Participant #10: Left Blank Participant #11: Left Blank Participant #12: It would be great to reduce the number of CRDNs.

	Participant #13: Reword the CRDNs Participant #14: No our current challenges are COVID related. Participant #15: Left Blank Participant #19: Give assignments/ways interns can meet the competencies when they are not able to be met in rotations. There is a lot of work that goes into developing assignments/alternative learning experiences. It is just going to get worse with the new 2022 standards! Participant #21: Left Blank

APPENDIX I: TABLE 14

Table 14: Are there any resources or materials that the Academy of Nutrition and Dietetics could provide to make the CRDNs you listed as "challenging" less challenging?

Onsite (Traditional) Responses	Distance Responses
Participant #4: Left Blank	Participant #1: Left Blank
Participant #6: Keep providing good training materials. They don't replace practice experience but prepare well for it so that students know enough to be trusted by preceptors.	Participant #2: ACEND could provide a virtual platform for how others are meeting the competencies
Participant #7: N/A	Participant #3: AND has the resources but this is supervised practice not didactics. AND has the resources but this is supervised practice not didactics.
Participant #16: Provide a "menu" of sorts for each standard	Participant #5: Left Blank
Participant #17: ACEND has announced new webinars, videos, etc. that should help achieve some competencies.	Participant #8: Left Blank
Participant #18: Examples would be helpful. Rubrics could also be helpful	Participant #9: The listserv is a great resource.
Participant #20: Left Blank	Participant #10: Left Blank
	Participant #11: Left Blank
	Participant #12: Have sample projects and assignments per CRDNs that preceptors could reference.
	Participant #13: Examples of how to meet them in certain settings
	Participant #14: No
	Participant #15: Left Blank
	Participant #19: See comment in question 48.
	Participant #21: Left Blank

APPENDIX J: TABLE 15

Table 15: Please provide your thoughts related to ACEND Core Competencies and their influence on first-time pass rates on the national registration examination for dietitians for graduates of traditional onsite internships and/or distance internships.

Onsite (Traditional) Responses	Distance Responses
Participant #4: My impression the exam keeps getting more difficult so is the exam truly measuring entry level competency? It should not be hard just to be hard. It is to measure an individual's ability to be competent as an RDN. Participant #6: Without a better analysis of the results our students achieve, this question can not be answered meaningfully. Participant #7: I have issues with the 2022 standards Participant #16: I think they contribute to framing the education of the interns. The quality of the preceptors is key to success Participant #17: Left Blank Participant #18: I honestly don't know how much the competencies actually assist in passing the national exam. I think the exam is more didactic in nature and should probably be taken after the undergraduate degree. In an internship, interns are not focusing on food science or basic nutrition which are both areas assessed on the exam. Critical thinking is important to pass the exam and I think supervised practice does help interns see the importance of looking at the big picture and using multiple sources of information to create a plan. In this regard, competencies leading to critical thinking skills may be influential to passing.	Participant #1: The competencies are not closely aligned with the test questions. Participant #2: I don't think the ACEND competencies align specifically with the CDR practice audit. I think most people think the RD exam is written from the what is required to reach by ACEND but that is not exactly true. Participant #3: The test and the competencies do not align. However most of the test comes from didactics. Participant #5: I am not sure how the CRDNs are related to CDR exam…to me they are very different. There isn't that much overlap. That is okay what student needs to pass the CDR exam is usually didactic material so it is lots of extra studying beyond just showing competencies. Participant #8: I think the first time pass rate is more to undergrad knowledge and test taking abilities than the competencies in an internship. Have definitely seen a decline in first time pass rate over the past five years and with COVID and students almost not having their last semester of college it's been huge. Participant #9: I do not see a direct connection between the competencies and the exam. I also do not see a connection between passing the NDTR exam, prior work experience, and academic performance. I have had excellent interns with high academic performance not pass the first time around. In some cases there were extenuating circumstances but in others it is just baffling.

Participant #20: The competencies generally help the interns do well on the exam. We had a seriously OFF year and the first time pass rate dropped significantly for us. COVID hit the cohort hard and that probably contributed.	I think for some their prior experience may actually be a hinderance as the exam goes "by the book" and that may not be what they have experienced in the real world. Participant #10: Left Blank Participant #11: Left Blank Participant #12: We are in our first so I guessed on the pass rate so I can't comment yet. Participant #13: ACEND looks at first year pass rate not first time pass rates. But I believe that the competencies do not align well with what is actually asked on the test. The domains/sections would be re-evaluated to align with the CRDNs or vice versa. CDR does not seem to align with ACEND's goals in education and are basing the test questions more on practice in dietetics settings. Participant #14: I think ACEND and CDR need to work closer together for the competencies to match the RD exam. Participant #15: I think it fulfilled correctly and thoroughly the ACEND core competencies have a strong correlation to an intern passing the exam on the first try. Participant #19: I don't think the competencies align well at all with the examination. If that was the case our pass rates would be much better. There is so much more that goes into exam preparation than checking a box that a competency was completed. Participant #21: Left Blank