Career Readiness of Recently Credentialed Registered Dietitian Nutritionists

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CAREER READINESS OF RECENTLY CREDENTIALED REGISTERED DIETITIAN NUTRITIONISTS

By

Maegan Perrault

B.S. University of Maine Orono, 2020

A Thesis
Submitted in Partial Fulfillment of the
Requirements for the Degree of
Master of Science
(in Food Science and Human Nutrition)

The Graduate School
The University of Maine
August 2022

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CAREER PREPAREDNESS OF RECENTLY CREDENTIALED REGISTERED DIETITIAN NUTRITIONISTS

By Maegan Perrault

Thesis Advisor: Dr. Mona Therrien

An Abstract of the Thesis Presented in Partial Fulfillment of the Requirements for the Degree of Master of Science (in Food Science and Human Nutrition) August 2022

This study assessed the perceptions of career preparedness of recently credentialed Registered Dietitian Nutritionists (RDNs) (≤ 5 years/post credential) and their experiences in undergraduate, supervised practice, and/or graduate programs. All participants were recruited from a randomized sample from the databank of the Commission on Dietetic Registration (CDR). Participants were recently credentialed RDNs (≤ 5 years) from the United States (U.S).

A survey was designed to evaluate the RDNs perceived ability to perform the 2017 Accreditation Standards for Nutrition and Dietetics Internship Program competencies as a working RDN. Participants were also invited to share their insights by answering open-ended questions regarding their experiences as a student in undergraduate, supervised practice, and/or graduate programs. Survey responses were analyzed overall and were grouped into six domains of practice, corresponding to the Standards of Professional Practice (SOPP) domains of the Academy of Nutrition and Dietetics. The level of education, type of undergraduate degree and type of dietetic internship were evaluated for their impact on perceived career preparedness overall and within the domains of the SOPPs.

Respondents agreed that they felt prepared overall to practice as an RDN in the work setting as indicated by a mean score of 2.05 (SD=0.63). Respondents felt least prepared in the
competency of “analyzing quality financial and productivity data for use in planning” M= 3.16 (SD=1.66). Conversely, respondents strongly agreed that they were able to “incorporate critical thinking in overall practice” M=1.48 (SD=.60) and “practice according to the Code of Ethics” M=1.48 (SD=.64). The domain rated strongest among respondents was Domain 2: Competence and Accountability, M=1.72 (SD = 0.56). The domain with the weakest score was Domain 6: Utilization and Management of Resources M=2.93 (SD = 1.31). There were no significant differences in perceived career preparedness overall, or by domains of practice in regard to the level of education, type of undergraduate degree, and type of dietetic internship. Knowledge gaps were identified in clinical experiences and business management.

In conclusion, recently credentialed RDNs in the US who have completed ACEND® programs feel ready to practice. The type of dietetic internship, level of education, and type of undergraduate degree were not significant factors in their perceived career preparedness overall or by domain of practice. The domain of management of resources and the theme of business management were consistently the areas identified as knowledge gaps. These areas should be improved upon within dietetic programs at all levels to ensure students continue to feel prepared to work in the dynamic field of healthcare.
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CHAPTER ONE: INTRODUCTION

Registered Dietitian Nutritionists (RDNs) are the food and nutrition experts, who can translate nutrition science into practical terms for patients, clients, and the general public. Nutrition practitioners play a fundamental role in preventative health measures to combat diseases such as obesity, hypertension, cardiovascular disease and diabetes. Dietitians practice in various settings. In the clinical setting, RDNs are valued professionals on the healthcare team who improve the care and outcomes of patients. The three most common work settings that RDNs are employed in are the inpatient acute-care facility (22%), ambulatory outpatient care facility (20%), followed by long-term care (9%). Other practice areas include social service organizations or community settings, colleges or universities, acute-outpatient care, private practice, and school nutrition.

In the United States, the Accreditation Council for Education in Nutrition and Dietetics (ACEND®) is an autonomous accrediting agency for education programs that prepare students to become RDNs or Nutrition and Dietetics Technicians Registered (NDTRs). ACEND® has specific standards that each educational program must meet in order to be considered accredited. The accreditation process is multifaceted. It includes self-analysis, preparation of a self-study report, and an on-site evaluation visit by a team of professional peers. There is a peer-review process to determine if a program is meeting its own objectives and the ACEND® standards. The full accreditation of a program is granted for seven years.

To become a credentialed RDN, there are five steps: 1) complete a bachelor’s degree and receive a verification statement from an ACEND®-accredited program. 2) complete an ACEND®-accredited supervised practice. 3) pass the Commission on Dietetic Registration’s (CDR) dietetic registration exam. 4) gain licensure in your state, if applicable 5)
and maintain continuing education. Within these five steps there are different pathways that lead towards attaining the RDN credential. In the first step, a bachelor's degree can be completed through one of four ways: completing a Didactic Program in Dietetics (DPD); a coordinated Program; a Future Education Model Program; or Foreign or International Dietitian Education Program. These criteria are effective until January 1, 2024, at which time a graduate degree will be required to be eligible to take the registration examination. In the second step, the supervised practice, can be completed through a dietetic internship (DI) program or Individual Supervised Practice Pathway (ISPP). Supervised practice is combined with the Coordinated Program, Future Education Model, and International Dietitian Education Program. Pathways to becoming an RDN are accredited by ACEND® and each have their own set of standards that programs must follow.®

Each program's set of standards contains core competencies that must be met by the curriculum and learning activities. These change depending on the type of program but are all focused on ensuring adequate knowledge and skills needed for entry-level practice as an RDN. An example of a competency in a DI program is: Apply evidence-based guidelines, systematic reviews and scientific literature. Through the application of theory learned during the undergraduate education program and the repetitive practice of competencies during the dietetic internship, students acquire the skills and confidence that are necessary to work in several environments.

The educational programs that prepare students to become RDNs have not been fully evaluated in the United States. Other countries such as Turkey, Australia, and Canada have used assessment tools to evaluate the effectiveness of their education models. It is critical that the educational programs in the U.S. are assessed to determine whether the profession of
dietetics is meeting the needs of graduates entering the workforce. The aim of this study was to determine RDN perceptions relating to their career readiness in dietetics. A survey, developed for this study, was used to assess newly credentialed RDNs (≤ 5 years/post credential) and their experiences in undergraduate, supervised practice, and/or graduate programs. The survey was designed to evaluate the RDNs perceived ability to perform the 2017 Accreditation Standards for Nutrition and Dietetics Internship Program competencies as a working RDN. Additionally, participants were invited to share their insights by answering open-ended questions regarding their experiences as a student in undergraduate, supervised practice, and/or graduate programs. The intent of this research was to provide valuable and relevant information to inform the profession, and to help guide undergraduate and graduate nutrition and dietetics’ program educators as well as DI program directors of future dietetics’ practitioners’ needs. To inform the profession regarding the perceived level of preparedness of recently credentialed RDNs, a research study was conducted. The study was proposed to address these problems.

**Problem Statement**

Among recently credentialed RDNs, what are their demographic characteristics? What are their perceptions of their career preparedness as it relates to all areas of practice for an entry-level practitioner? What are their perceptions of career preparedness in the domains of: a) quality in practice b) competence and accountability c) provision of services d) application of research e) communication and application of knowledge f) utilization and management of resources? What is the difference in perceived career preparedness based on respondents’ level of education, type of undergraduate program, and type of DI as it relates to all areas of practice and specified domains of practice? What gaps in education and preparation for entering the workforce are identified by RDNs as it relates to undergraduate, graduate, or supervised practice?
Sub-problems

Among recently credentialed RDNs in the United States:

Sub-Problem One: What are the demographic characteristics?

Sub-Problem Two: What are their perceptions of career preparedness as it relates to all areas of practice?

Sub-Problem Three: What are their perceptions of career preparedness as it relates to: a) quality in practice b) competence and accountability c) provision of services d) application of research e) communication and application of knowledge f) utilization and management of resources

Sub-Problem Four: What is the difference in perceived career preparedness based on respondents’ level of education, type of undergraduate program, and type of dietetic internship as it relates to all areas of practice and specified domains of practice?

Sub-problem Five: What gaps in education and preparation for entering the workforce are identified by RDNs as it relates to undergraduate, graduate, or supervised practice?

Hypothesis

Newly credentialed RDNs feel adequately prepared for their career after completion of undergraduate, dietetic internship and/or graduate level education.

Dependent Variables

Career preparedness of recently credentialed RDNs (≤5 years/post credential).

Independent Variables

Degree earned, type of undergraduate program, and type of DI.
CHAPTER 2: REVIEW OF THE LITERATURE

Defining the Registered Dietitian Nutritionist (RDN)

The world population is quickly increasing and by 2050, it estimated that the population will reach 9 billion globally.\textsuperscript{13} This increase in population directly affects the global food supply; overnutrition and undernutrition of individuals are possible consequences.\textsuperscript{13} Dietary consumption impacts the health of humans and the environment.\textsuperscript{13} The Academy of Nutrition and Dietetics (Academy) recognizes four primary overarching themes in which RDNs play a key role: 1) fostering global collaboration of government, scientists, industry, and humanitarian organizations, 2) strengthening educational opportunities for health professionals and the public, 3) identifying outcome measures and developing monitoring and evaluation standards, and 4) advocating for public policies that promote food and nutrition security.\textsuperscript{14} The areas that the Academy recognizes as four primary overarching themes in a RDNs career greatly impact global agriculture, nutrition, and health.

RDNs are employed in several different work settings. RDNs work in hospitals, acute care and outpatient settings, nursing homes, schools, public health clinics, fitness centers, food management, food industry, universities, research and private practice.\textsuperscript{3} According to the Academy’s Compensation and Benefits Survey of 2019, the three most common work environments are inpatient acute-care facility (22\%), followed by ambulatory or outpatient care (20\%), and long-term care (9\%).\textsuperscript{3} Depending on the RDN’s work setting, salaries can differ. The median wage as of April 1\textsuperscript{st}, 2019, was $68,600 per year. Highest degree held, work experience, and responsibility greatly affect compensation.\textsuperscript{3} The work settings with the highest median wages are food and nutrition management, consultation and business, and education and research. Compensation also varies depending on location in the US RDNs living in New
England, Middle Atlantic, and Pacific states earn wages higher than $34 per hour while in other areas earn median income was less than $33 per hour.³

At a minimum, RDNs must have completed an undergraduate degree, however, many of them hold a graduate degree. This education requirement will be changing to a minimum requirement of a graduate level degree on, January 1, 2024.¹⁵ As of 2019, and similar to the three surveys prior, over half of RDNs held a graduate degree (50% master’s, 3% doctoral).³,¹⁶,¹⁷,¹⁸ Undergraduate programs in nutrition are accredited by The Accreditation Council for Education in Dietetics (ACEND®) of the Academy. These programs, called Didactic Programs in Dietetics (DPD), are one of the pathways followed to become an RDN.

**Didactic Programs in Dietetics**

The focus of a DPD program is to prepare students to meet the knowledge requirements to practice in the field of dietetics.¹⁹ There are currently over 200 DPD programs in the US. All of the DPD programs grant at least a bachelor’s degree and a few include a master’s degree.²⁰ ACEND® oversees all DPD programs. DPD programs that apply for accreditation through ACEND® must meet requirements of maintaining quality-assurance standards, having an organizational structure that meets program needs, ensuring financial stability, and having sufficient resources to administer the program.⁹ There are 10 standards that a DPD program must meet to be recognized by ACEND® as an accredited DPD program. These standards are as follows: 1) Program Characteristics and Resources, 2) Consortia, 3) Program Mission, Goals and Objectives, 4) Program Evaluation and Improvement, 5) Curriculum and Learning Activities, 6) Student Learning Outcomes Assessment and Curriculum Improvement, 7) Faculty and Preceptors, 8) Supervised Practice/Experiential Learning Sites, 9) Information to Prospective Students and the Public, 10) Policies and Procedures.⁹
The required elements or knowledge requirements for dietetics students (KRDNs) are grouped under standards. DPD programs function to prepare students for supervised practice (DI), which lead them to eligibility to the CDR credentialing exam. There are four domains of KRDNs which are: 1) scientific and evidenced based practice, 2) professional practice expectations, 3) clinical and customer services, and 4) practice management and use of services. Within each domain, there are several KRDNs that must be met to complete the program. Instructors must base syllabi on these KRDNs. In Standard 6, Student Learning Outcomes (SLOs), Assessment and Curriculum Improvement are used to continuously offer improvement in a DPD program. Each program must define their assessment plan, which will serve to guide the faculty in program review annually. Another important aspect of DPD programs is the faculty. There are several requirements that faculty must meet in order for the program to maintain accreditation; they need to maintain competence, which can be achieved through continuing education, conducting research, and obtaining experiential professional work.

A strong DPD program provides career readiness among graduates. The standards that each program must meet ensure that there is consistency among all DPD graduates. When a student has completed the requirements of a DPD program, the student earns a verification statement which provides evidence that all of the requirements have been met to allow the students to apply and be matched with a DI program.

**Dietetic Internship Programs**

The DI program is a post-baccalaureate program that prepares students to become competent entry-level RDNs. Each program must meet 10 overarching standards that guide the program to be aligned with the ACEND® requirements. These standards are the same as the DPD program.
The standards are listed out and defined by ACEND®, in addition to the following components: Standards 5; The Curriculum and Learning Activities are made up of the required elements that students must meet for program completion. This standard consists of four domains, and core competencies (CRDNs) within each domain. The domains are 1) Scientific and evidence base of practice: integration of scientific information and translation of research into practice, 2) Professional practice expectations: beliefs, values, attitudes, and behaviors for the professional dietitian nutritionist level of practice, 3) Clinical and customer services: development and delivery of information, products and services to individuals groups and populations, and 4) Practice management and use of resources: strategic application of principles of management systems in the provision of services to individuals and organizations. The function of each domain is to outline how the program directors will implement the competencies into the DI curriculum. The domains allow for the students to assess their own knowledge and career readiness for the profession as well as the faculty to assess the readiness of the students.

The faculty must include at least two competencies that are specific to the program with the learning activities. To outline the curriculum of a DI in a comprehensive way, a curriculum map is created to identify all the supervised practice experiences and to give an organized progression of didactic courses. The map displays the competencies and pathway that a student will take throughout the DI program.

ACEND® also gives guidelines for continuously evaluating several areas of the program such as the concentration, learning objectives, and supervised practice rotations. This evaluation is known as the Student Learning Outcome (SLO) assessment plan. DI programs review the
SLO annually and update it as needed. This allows for continuous improvement of the program and student experiences.

Supervised practice is the cornerstone part of the DI program. By participating in a DI program, a student is placed in varying work environments and utilize experiential learning to acquire the necessary skillset to practice as an RDN. The DI program requires students to complete 1,000 hours supervised practice to be exam eligible. Supervised practice is overseen by preceptors who are currently working in the field. Preceptors are current RDNs who meet all of the state and federal regulations and are able to supervise dietetic interns. As of January 2024, all nutrition and dietetics graduates who wish to take the RDN exam will need to have a master’s level degree or higher to be eligible to sit for the exam. Prior to January 2024, students may complete a supervised practice program without having to complete a graduate degree.

Experiential Learning

Experiential learning is a complex process that incorporates the trial-and-error method to learn a skill and perform it. This type of learning includes a cycle of thinking, planning, testing, and reflecting. Wurdinger and Allison examined the perceptions of faculty members and their views of experiential learning. The researchers used an eighteen-question survey to determine their beliefs about this type of learning. The areas that were assessed on the survey included critical thinking, problem solving, creativity, communication, collaboration, time management, responsibility, perseverance, work ethic, and self-direction. Experiential learning was referred to as collaborative learning, problem-based learning, project-based learning, service learning, and place-based learning. There were 295 survey respondents made up of assistant professors, associate professors, and full professors. Most respondents were professors in the field of social sciences (52%), followed by humanities (23%), natural sciences (16%), and formal sciences.
(9%). The researchers found that 91% of respondents used lecture-based learning in the classroom versus only 27% using place-based learning. The reasons for not using experiential learning were cited as time, money, assessment procedures, university bureaucracy, and departmental policies and procedures. Although there was a shortage of respondents using experiential learning, it was well regarded by respondents. Respondents identified several life skills that were enhanced by experiential learning. The top three were cited as critical thinking, problem solving, and communication. Respondents also cited the reasoning for these life skills being developed through experiential learning as being due to the cognitive process being more complex than memorizing information, because it involves a problem-solving process, and because students often work on projects in real-world settings. Experiential learning provides several benefits to students in preparing them for the real-world setting. Oftentimes it is unable to be provided because of the time and organization it takes to develop ways to carry out these experiences.

The use of experiential learning has been successfully implemented in ACEND® DI programs. Barr and colleagues assessed the four areas of a dietetic students’ preparation to determine perceptions about the value of each education component. These areas were the DPD program, supervised practice or DI program, work experience, and continuing education. A survey was completed by 882 RDNs who were considered entry-level (≤3 years) and took the registration exam between 1996 and 1999. Respondents reported their perceived value of professional preparation for the four different education components. Professional preparation was identified as the knowledge, skills, competency, ability, and confidence. The area that rated most highly among respondents for professional preparation was the DI. The area of professional development that contributed most highly to the mean rating of the DI was skill development...
(44.8%), followed by knowledge for didactic (31.3%), and continuing education (8.6%) and confidence (32.5%) for work experience. The DI allowed students to apply knowledge and practice skills in various work environments which increased their knowledge and skillset using the experiential learning process. Barr and colleagues also reported that the majority of RDNs felt adequately prepared (56.5%) or very prepared (37.8%) for their first job as a RDN. There appeared to be no significant relationship between the highest degree achieved and perceived career preparedness. Those with a graduate degree did not feel more prepared than those with a bachelor’s degree. However, the researchers did report that through a higher degree, a RDN does become prepared for a more specific area of practice. Researchers explained that this result was due to the DPD and DI programs preparing students adequately for entry-level positions.

**Future Education Model Programs**

In 2017, the Future Education Model (FEM), was released as a new program to prepare students to become eligible for the RDN exam. In 2018, the ACEND® board of directors began offering accreditation to the FEM demonstration programs in the US. The focus of these programs was to act as a graduate-level program that integrates 1,000 hours of supervised experiential learning in order to become RDN exam eligible. The FEM standards are structured differently than the traditional DPD and DI programs. The 9 standards are as follows: 1) Program characteristics and resources, 2) Program mission, goals, and objectives, 3) Program evaluation and improvement, 4) Curriculum and learning activities, 5) Competency assessment and curriculum improvement, 5) Faculty and preceptors, 7) Supervised experiential learning sites, 8) Information to prospective students and the public, and 9) Policies and procedures. Unlike the DPD and DI, KRDNs and CRDNs are not part of the FEM. Rather, FEMs use
competencies and performance indicators. The competencies are structured into 7 different units, 1) Foundational knowledge, 2) Client/patient services, 3) Food systems management 4) Community and population health nutrition 5) Leadership, business, management and organization, 6) Critical thinking, research and evidence-informed practice and 7) Core professional behaviors. The performance indicators are listed as examples of how students would meet the required competency, such as, the performance indicator, ability to identify the influence food consumption has on the development of disease (1.1.5) and the corresponding competency, “Applies an understanding of environmental, molecular factors and food in the development and management of disease.” (1.1).

Through a combination of completing a DPD and DI or FEM, students are eligible to take the national RDN exam to become a credentialed practitioner. These various pathways all prepare students for future practice in the field. Defining career preparedness is an important concept to ensure that RDNs feel confident to practice competently.

**Defining Career Readiness**

Career readiness encompasses a broad range of competencies students developed as they progress through their education. Depending on the field, career readiness competencies will differ. However, the National Association of Colleges and Employers (NACE) is a professional association that focuses on the advancement of professional development for the employment of all college-educated individuals. NACE serves as a source of research and data for career readiness of new college graduates in most fields. This professional association provides general competencies that can be used by employers. These competencies are also used in more than 50% of all 4-year colleges in the United States and in 98% of research universities. NACE defines career readiness as “attainment and demonstration of requisite competencies that broadly
prepare college graduates for a successful transition into the workplace. Competency skills are used as a universal measurement for employers to assess an individual’s employability. NACE defines a list of eight competencies, (1) critical thinking/problem solving, (2) oral/written communications, (3) teamwork/collaboration, (4) digital technology, (5) leadership, (6) professionalism/work ethic, (7) career management, and (8) global/intercultural fluency. All of these competencies offer a framework of preparation for a college student entering the workforce and have been backed by several years of research with NACE having obtained surveys from employers in 606 different industries to make the initial list of competencies. Each year, NACE conducts a job outlook survey and makes revisions based on the results. The NACE competencies are highly regarded and provide diverse insight about employability for several different fields.

For educational programs to be strengthened, incorporation of the NACE competencies is important. These align well with the ACEND® competencies, however according to the Academy, there are two that should be strengthened in the ACEND® curriculum. These are (4) digital technology and (7) career management. Koemel and colleagues compared the DPD and DI KRDN and CRDN to the eight NACE competencies. Gaps in career readiness were found in the areas of digital technology and career management. The digital technology competency is limited in the curriculum of DPD and DI programs, with only one KRDN addressing digital technology in the DPD and no CRDNs addressing this competency in the DI curriculum. Similarly, there is minimal focus on the competency of career management, in both the DPD and DI programs, only one KRDN and one CRDN are identified in the DPD and DI programs respectively, showing that there is a lack of career management preparation in the ACEND® curriculum in comparison to NACE.
Career readiness is an essential measurement to show success of an academic program. For students to reflect and improve upon their skills, they must be given insight into what employers are seeking in job applicants. Similarly, job applicants need defined measurements of competence to ensure that they can perform according to job specifications once they enter the job market. Newly credentialed RDNs, entering the job market, must have acquired the knowledge and skills necessary to practice competently. Defining competence in dietetics practice becomes critical to ensuring career preparedness.

**Defining Competent Practice for the RDN**

Competence in practice is defined as “a principle of professional practice, identifying the ability of the provider to administer safe and reliable services on a consistent basis.” According to the Academy, a competent RDN is continuously acquiring knowledge, skills, experience, and judgement to provide quality services in a safe environment. RDNs may serve differing roles depending on the work environment they are in.

RDNs must follow the Commission on Dietetic Registration (CDR) standards to maintain their credentialing. CDR requires 75 hours of continuing education every 5 years, which is documented in the CDR Professional Development Portfolio (PDP). Each RDN prepares a PDP, according to a 3-step process specified by CDR. Step-1 identifies practice areas specific to the RDNs focus environment through an online Goal Wizard. Step-2 asks the RDN to log all activity relating to continuing education over the 5-year period. Step-3 includes a guided self-reflection and assessment of learning. This process assists the RDN to further develop career goals and education in their unique focus area. This tool also contributes to the RDNs commitment to lifelong learning and competent practice.
Practitioners must also meet the standards for RDNs according to the Essential Practice Competencies for CDR Credentialed Nutrition and Dietetics Practitioners. These competencies define the knowledge, skill, judgement, and attitude requirements throughout a practitioner’s career. This list of competencies helps to evaluate the behaviors that are necessary for continued competent practice for an RDN throughout their career. CDR validated this list through a national study, which consisted of a survey that was sent out to 90,677 credentialed RDNs and Nutrition and Dietetic Technician Registered (NDTR). There was a 21% response rate to the survey, which resulted in strong reliability estimates, concluding that the Essential Practice Competencies are relevant to practitioners. The range of Essential Practice Competencies consists of 14 spheres and 55 practice competencies. However, there are nine core essential practice competencies, which apply to all RDNs regardless of work environment. The competencies are as follows: (1) Ethics and Professionalism, (2) Communications, (3) Leadership and Advocacy, (4) Critical Thinking and Decision Making, (5) Informatics, (6) Research, Evidence-Informed Practice and Quality Improvement, (7) Safety and Risk Management, (8) Food, Nutrition and Dietetics and Physical Activity, and (9) Education and Counseling. The spheres act as a guide for RDNs to develop and progress in their individual careers. They also serve in communicating competence of the nutrition professional to outsiders who may not be in the field, such as employers or the general public.

In other healthcare professions, competent practice is also defined in a similar way. The American College of Clinical Pharmacy (ACCP) states that a clinical pharmacist is considered competent when they possess the knowledge, skills, and attitudes required to provide direct care to patients and to ensure rational medication use. Competence is acquired through continual work over an extended period of time in both pharmacy and nutrition professions. To gain
competency in the work environment, one must encounter challenges within their field to broaden their knowledge, skills, attitudes, judgements, and experiences. Another factor that contributes to growth in competence, is continuing education. Both RDNs and pharmacists must stay current with literature in order to make evidence-based decisions and are both committed to lifelong learning.\textsuperscript{34,35} For RDNs and pharmacists in the clinical setting, they must both be exposed to various medical problems in order to become proficient and develop their individual scope of practice. This is an example of how an extended amount of time in a certain setting strengthens the practitioner to gain a deeper understanding in a specific facet of their field.

In the field of nursing, a similar framework of assessment exists. The Magnet Recognition Program from the American Nurses Credentialing Center (ANCC), is considered the highest distinction that a healthcare organization can receive for nursing excellence.\textsuperscript{36} Haller and colleagues\textsuperscript{36} described the program, which was put into place to improve an organization’s culture and nursing practice. The Magnet model is made up of five components: transformational leadership; structural empowerment; exemplary professional practice; new knowledge, innovations, and improvements; and empirical outcomes.\textsuperscript{36} This model was created using the 14 previously recognized, “forces of magnetism”, which consist of varying themes such as, quality of nursing leadership, organizational structure, and quality improvement.\textsuperscript{36} In 2008, the 14 forces of magnetism were consolidated into the five components. This new framework outlines professional practice in nursing and how to obtain excellence within a workplace. Organizations who apply and receive this credential have more favorable work environments and in turn, better patient outcomes.\textsuperscript{36} There are currently 460 hospitals (8.9\%) in the US that are recognized as a Magnet facility.\textsuperscript{37} The profession of nursing uses these five components as a measurement of competency within the profession. The Magnet Program credential recognizes organizations that
place great attention to ensuring quality nursing practice and patient care. It also communicates to other members of the healthcare team, patients, and the public, of the quality of nursing services that a healthcare organization provides. This program has been influential for nutrition professionals and has served as an example for RDNs who created the Standards of Excellence in Nutrition.

**Standards of Excellence**

Similar to the nursing profession, RDNs use standards of excellence as a guide to establish merit within the organizations in which they are working. In 2009, the Academy’s quality management committee established a group made up of RDNs from several work environments to implement standards of excellence; the group was titled the Center of Excellence Award Workgroup (Workgroup). The Workgroup created the standards in several steps. Initially, the group researched the parts of nutrition and dietetics that promote quality care. To do this, Workgroup members used several resources such as the Scope of Practice in Nutrition and Dietetics, the Standards of Practice (SOP) and Standards of Professional Performance (SOPP), evidence-based practice and guidelines, the Nutrition Care Process Terminology (NCPT), and other measurements of standards for practice.

After a thorough review of resources, the Workgroup used the Magnet Recognition Program to act as a guide. Through analyzing this information, other programs of excellence, and criteria that is used to assess organizational quality, the Workgroup was able to create the four standards of excellence for the field of nutrition and dietetics in January of 2014. The standards are as follows, 1) Quality in Leadership, 2) Quality of Organization, 3) Quality of Practice, 4) Quality of Outcomes. Within the standards of excellence, standard 3 quality of
practice, uses the SOPP as one source for measuring how a RDN is providing quality practice on an individual level.38

Standards of Professional Practice (SOPP)

The SOPPs are an evaluation tool created by the Academy to help guide RDNs in multiple areas of care.32 There are several different SOPP versions that apply to specific working environments such as: diabetes care, integrative and functional medicine, clinical nutrition management, oncology nutrition, among many others.39 The version that is applicable to all areas of practice is the 2017 Revised SOPPs for RDNs.32 These standards are made up of six core areas/domains that guide practitioners to follow certain recommendations for professional practice in the field, 1) quality in practice, 2) competence and accountability, 3) provision of services, 4) application of research, 5) communication and application of knowledge, and 6) utilization and management of resources. The six domains provide comprehensive definitions of how RDNs should be performing, regardless of working environment. By following the standards, nutrition professionals in all areas of practice can ensure they are meeting the basic requirements to fulfill their role as a RDN.32 SOPPs are further defined below.

Quality in Practice

Quality in practice is defined by the Academy as the RDN having a systematic process to provide quality service using acquired skills in leadership, being accountable, practicing ethically, and managing resources.32 This SOPP is developed through the RDNs undergraduate and/or graduate and supervised practice education experiences. It consists of an understanding of several areas of care such as customer-centered services, ethical business practices, laws and regulations that apply to RDNs, workplace efficiency, and applying leadership and knowledge from education experiences to the workplace.32
**Competence and Accountability**

The second domain, competence and accountability, is defined by the Academy as the RDN being accountable for safe practice. This domain is focused on the RDN being an adaptable and self-confident professional, who understands health equity among diverse populations. The RDN should be able to prepare a professional development portfolio guide (PDP) and self-assess for continuous improvement, practice according to the Code of Ethics, and follow evidence-based guidelines. Competence and accountability take time to fully develop, especially when it comes to becoming a self-confident professional.

**Defining Provision of Services**

The third domain, which is the provision of services, is defined by the Academy as the RDN providing customer-oriented quality service keeping in mind the mission and vision of the employer. RDNs who successfully practice this standard, thoroughly understand their working environment. In this domain, RDNs should be able to measure the achievement of objectives and select indicators of program quality. They should also be able to develop and deliver programs and services; perform the nutrition care process (NCP) for various populations and health statuses; function within interdisciplinary teams; plan a budget for a program; determine staffing and supply needs; and conduct nutrition focused physical exams.

**Application of Research**

The fourth domain, application of research, is defined by the Academy as the RDN using research to enhance practice. In this domain, the RDN is expected to provide services that are evidenced-based. This includes staying current with recent research being conducted and understanding how to apply new research to current practice.
Communication & Application of Knowledge

The fifth domain is communication and application of knowledge. RDNs should be able to integrate and share their nutrition expertise to individuals, groups, and stakeholders in an effective way. It is important that RDNs understand various forms of communication to reach the necessary audiences. Information could be communicated through various methods such as oral, electronic, print, social media, visual, group, etc. and knowledge should be shared based on the relevance to the person, group, or population.

Utilization & Management of Resources

The final domain is the utilization and management of resources. This domain encompasses a range of leadership qualities the RDN should develop for practice, such as, ensuring performance aligns with the organization’s mission, tracking outcomes and trends, planning and delivering products and services, and using a systematic approach to manage resources and make improvements in the organization. The six domains of the SOPPs are fundamental in an RDNs practice. Additionally, it is important for educational programs to evaluate whether graduates feel they can meet these standards as they enter the workforce. Measuring how recently credentialed RDNs feel they have acquired these skills, is important to ensure the ACEND® curriculum aligns with the SOPPs.

Studies Conducted to Assess Dietetic Programs

Evaluation of dietetic programs is critical to continued growth in the field of nutrition. In 2014, Brissette and colleagues conducted an assessment of a Canadian DI program. The graduates surveyed (2007-2011) were from the St. Michael’s Combined MS/DI. The survey was developed using the competencies for entry-level dietetic practice and featured a 5-point Likert
scale. The survey consisted of 40 questions and two additional sections, information on past and current employment, and overall perception of career preparedness. A total of 23 of 38 graduates returned the survey and most respondents (95%) were employed as RDNs. The overall perception of graduate’s preparedness for practice was positive as indicated by the average rating of greater than 4 on the 5-point Likert scale (between the rating of well prepared to very well prepared). The competencies which were rated lowest among graduates were in research-related tasks, whereas the strongest among graduates were in maintaining privacy and confidentiality, evaluating the care plan, and learning and working independently. Despite the positive perception overall, 32% of respondents did identify perceived gaps in training. These were in the areas of community nutrition, management, and leadership. Additionally, respondents were able to offer qualitative suggestions for program improvement. The suggestions made were to offer more in-depth training sessions on nutritional assessment and planning, provide greater options for electives, create a community and public health rotation, and provide more exposure to long-term care and community settings.

Education gaps in community nutrition and management were also identified by respondents of another Canadian study conducted in 1999-2000 by Rose and colleagues. The researchers administered a survey that consisted of the 45 competencies and 100 sub-competencies for entry-level dietetics practice. The students and faculty were asked to rate the students’ level of career preparedness for practice based on a 5-point Likert scale, 0 (not at all) to 5 (very well prepared). Another aspect of the survey was to indicate the depth (type of activity) and breadth (variety of activities) of learning opportunities that students were exposed to for each of the competencies and sub-competencies in the categories of assessment, planning, implementation, and evaluation. This section of the survey was also answered through a 5-point
Likert scale 1 (none) to 5 (very many). There were 168 of 313 dietetic students who responded to the survey. There were 70 (43%) of 164 students from integrated programs and 98 (66%) of 149 from internship programs. There were 23 (72%) of the 32 program coordinators who responded from internship programs and three (50%) of the six from integrated programs. The small number of integrated program coordinators was a limitation of this research.

The general perception of career preparedness among all respondents was positive. In 25 (56%) of the 45 competencies, the rating was a 4.00 indicating the students and program coordinators felt that students were well prepared or better. In the other 20 (44%) competencies the rating was less than 4. The competencies that were rated lower among all respondents were in the areas of assessment, planning, implementation, evaluation, professional practice, and communication. In the two groups of respondents, graduates and program coordinators from integrated programs had higher levels of perceived preparedness than internship program respondents. However, due to the small number of respondents in the integrated programs, compared to internship, the researchers noted that results should be assessed with caution. The depth and breadth of learning opportunities measured by researchers, was indicated to be sufficient by over 70% of the respondents. In the qualitative data collected by researchers, the most common statement from all respondents was that there were more opportunities to gain experience in clinical nutrition than in food service and community nutrition. Additionally, a small percentage of respondents (6%), indicated that there were advantages to an integrated program versus an internship program. These advantages were perceived to be due to the opportunity to practice the theory being taught in the classroom, throughout the program. Rose and colleagues identified four areas of concern from the survey: management, communication, monitoring and evaluation, and research skills. These were identified through one or more of the
respondent groups rating less than 4.00 for preparedness, in addition to a low percentage of students identifying sufficient depth and/or breadth in that competency or sub-competency. Overall, respondents felt that there was a greater emphasis on the clinical setting versus food service or community in training, pointing out that in these settings, students would be strengthened in the management competency.40

Dietetic programs across the globe have been evaluated in different ways. In a 2013 Australian study, Lawrence and colleagues11 assessed the level of knowledge of students in an accredited nutrition and dietetics program (ND). Researchers then further determined the variation in knowledge of the students enrolled in the ND based on their socio-demographics, sources of nutrition information, and self-reported dietary behaviors. The knowledge level of students increased with each year of school. Students in the 3rd and 4th years of the ND had significantly higher knowledge scores based on the General Nutrition Knowledge Questionnaire (GNKQ). Despite the increased knowledge, there was evidence of misinformation about the diet-disease relationship by students in all levels of education.11 The authors identified this as an area of concern because it is important for student’s to have knowledge clarity in order to provide quality, evidence-based nutrition services.11 Lawrence and colleagues11 also reported that level of education was the strongest predictor of nutrition knowledge. This demonstrates that the curriculum of nutrition and dietetics programs is important in expanding the knowledge and skills of students.11

Students’ educational experiences are a major contributor in the development of knowledge for practice as an RDN. However, for students to acquire knowledge successfully during their time in training programs, they must feel supported by educators.41 Lordly and colleagues41 surveyed 3rd and 4th year Canadian dietetic students assessing various stressors in
educational environments. The survey had three quantitative sections that asked about demographic information and situations that caused stress, and a final section, which consisted of two open-ended questions asking what important changes educators made that addressed their needs as students and what educators did not understand about being a student. The students who were asked to take the survey were in their final rotations and/or obtaining their master’s degree. The researchers were exploring how stressors in educational environments impacted students’ ability to perform. Students identified six areas in which educators lacked understanding of their barriers. These were as follows: 1) finances 2) evaluation process 3) inflexible undergraduate and internship structures 4) competition among students 5) ineffective communication and 6) finding a balance between academics and competing interests. These gaps are important to address for educators, in order to ensure continued satisfaction and retention of students completing programs. It is also important for educators to recognize these barriers to help students be successful in their program.

In Turkey, Aksoydan and Mizikaci surveyed students, dietitians, and instructors regarding their perceptions of dietetics programs. Instructors weighed theory courses heavier than students and dietitians. When asked whether the education they received was sufficient for them to deal with hardships of the work environment, the dietitians responded by suggesting the implementation of a skill-based program with more practical course work. Dietitians felt that the theory courses were not as useful in the workplace. They also emphasized that the following elements should be included in a dietetic program: taking responsibility, decision making, problem solving, work discipline, teamwork, communication and interpersonal relationships, and legal arrangements and employee rights.
The perspectives of dietitians regarding their education experiences as students are important insights to take into consideration when assessing dietetic programs. Dietitians can relate their own experiences in the workplace to their skills obtained during their undergraduate and/or graduate studies. In addition to this important point of view, is the outlook of the employer. An employer’s opinion of the competency of a dietitian is another critical aspect that should be taken into consideration.

**Evaluating RDN Career Readiness in the Practice Setting**

Aksoydan and Mizikaci\(^1\) also interviewed employers, employees that worked closely with dietitians, as well as patients. The researchers developed an interview form and qualitative data was collected through open-ended questions regarding their expectations of dietitians.\(^1\) Employers felt that dietitians needed to improve in the areas of teamwork, communication, problem-solving, empathy, and taking responsibility. Employers also stated that the main problem faced by dietitians who were newly graduated was interpersonal skills.\(^1\) Employers expressed an appreciation of academic theory, however, they questioned the minimal attention put on practice and skill development in preparation programs.\(^1\)

Supervised practice programs aid in the application of theory learned in the classroom to developing the skill in the workplace. In 2018, Bawadi and colleagues\(^42\) conducted a survey at Qatar University in the human nutrition program, one of five ACEND\(^\circledR\) accredited international programs. Researchers held 30–40-minute interviews with 15 preceptors to obtain their insights, experiences, and opinions about employability of nutrition graduates from the program. There were several takeaways from the interviews, including four main themes: 1) experiences in International Dietetics Accreditation Standards (IDAS) 2) perspectives on supervised practice and skills developed by graduate students 3) perspectives of supervised practice and
employability 4) factors that impact employability. Preceptors indicated many positive responses in their interviews about their experiences in the role. The supervised practice setting using IDAS, promoted communication between preceptors and students, leading students to grow professionally through constant feedback and guidance. Furthermore, preceptors gained valuable insights about their own weaknesses and strengths through their training and leadership roles. In the second theme identified by preceptors, they felt the exposure to a broad array of patient cases, allowed for theoretical knowledge to be put into practice. In turn, this helped students to grow in areas of self-confidence, critical-thinking skills, communication, interviewing, and becoming culturally competent. This additional practice time, before being hired as RDNs, was said to contribute to a smooth transition to working independently in many work settings. Bawadi and colleagues also described how participants in the survey agreed that supervised practice improved students’ employability. The other factors cited by preceptors which contributed to employability, were prior experience in a health profession, performance evaluations during supervised practice, and grade point average. Overall, researchers determined that following IDAS guided supervised practice enhances students’ competence in nutrition and dietetics and improves their employability as RDNs.

Similarly in the US, Gaba and colleagues conducted research to assess what employers were seeing in nutrition and dietetics professionals. The researchers identified job postings from various listing websites for nutrition and dietetics in the New York metropolitan area from 2010 to 2013. The position announcements found during the search were separated into categories and further assessed for what employers were seeking in nutrition and dietetics professionals. The top four skills requested by employers were as follows: being able to communicate effectively (39%, n=162), having computer/Microsoft office skills (30%, n=122), flexibility to
travel (24%, n=98), and being detail oriented (20%, n=83). Management positions were the second most cited job category for nutrition professionals (26%, n=109), after RD staff (34%, n=139). Most management positions required having the RDN credential along with one to three years of work experience (14%, n=8).

The skills required for the field of dietetics are continuously evolving. In the UK, Hickson and colleagues conducted a three-phase research project, to determine how dietitians can strengthen their role in the future. The three phases of the study design were an environmental scan, online conversation, and an appreciative inquiry event. In the environmental scan, general data about the field of nutrition were collected to define dietitians’ role in healthcare and to generate questions for the following two phases. The researchers then invited 8653 members of the British Dietetic Association to take part in the online conversation. In total, 835 people participated, 109 individuals were stakeholders and 726 were dietitians. This valuable communication method used a platform called, “Clever Together” and allowed participants to take part in several discussions at their leisure. Participants were asked to answer questions such as, “How can dietitians strengthen their future role, influence, and impact?” In the third phase the researchers created four stages for the appreciative inquiry event. The four stages were named define, discover, dream, and design. There were 93 dietitians invited to the event and 54 dietitians from varying roles and regions participated. The event allowed for participants to work in groups and promoted critical thinking. There were five notable themes which resulted: 1) professional identity, 2) strong foundational knowledge 3) amplifying visibility and influence 4) embracing advances in sciences and technology, and 5) career advancement and emerging opportunities. The second theme, creating strong foundations, was discussed with a design that would educate all layers of the workforce. This theme was viewed
as fundamental by dietitians. In order to prepare dietitians for the varying opportunities beyond the traditional scope of nutrition, a creative and dynamic curriculum was considered necessary.\textsuperscript{44} At the conclusion of the study, Hickson and colleagues\textsuperscript{44} recommendations included: increasing the visibility of the profession, building a career framework, supporting graduate education, augmenting technological skills, providing opportunities for interdisciplinary education and training, and enhancing diversity and inclusion within the profession. These recommendations are beneficial takeaways for all healthcare professionals to further understand and make improvements to the field of dietetics in the future.

**Need for the Study**

The education of RDNs serves the essential purpose to build confident and knowledgeable practitioners who can adapt in a dynamic healthcare field. The goals of accredited undergraduate and/or graduate degree and supervised practice programs are to establish a foundation of knowledge and practice for students to pursue a career as an RDN. However, the competency-based approach to educating RDNs in the US by ACEND\textsuperscript{®} has not been fully evaluated to determine whether RDNs feel ready to practice in the field or not. Education programs should be assessed to determine their effectiveness and any changes that should be made moving forward. Through surveying recently credentialed RDNs, perceptions of career readiness and insight on educational effectiveness of dietetic education programs will be identified.
CHAPTER 3: METHODOLOGY

This study explored the perception of recently credentialed RDNs (≤5 years) on their career preparedness, as it relates to the standards of professional practice.

Study Sample

All participants were recruited from a randomized sample from the databank of the Commission on Dietetic Registration (CDR) after Institutional Review Board (IRB) approval was granted. Participants were recently credentialed RDNs (≤5 years) from the United States (U.S.). The Principal Investigator (PI) received a list of five thousand emails from the registry.

Study Design

This was a descriptive qualitative/quantitative study. The electronic survey was generated using Qualtrics software, Version January 2021 of Qualtrics. Copyright © 2021 Qualtrics®. The survey was electronically mailed to study participants three times over an 18-day period, from January 14 – 31, 2021.

Participant Recruitment

The randomized email list of RDNs was obtained from the CDR after application approval on December 18, 2020. IRB approval from the University of Maine was granted on January 5, 2021. The list of RDNs was then obtained from the CDR on January 7, 2021. An email script (Appendix I) was developed to be sent to the list of RDNs which included consent by participation in the survey. Participants who completed the survey were entered into a raffle to win 1 of 2 $25 Amazon gift cards.

Survey Tool Development
A Qualtrics® survey was developed specifically for this study (Appendix II). The survey questions were created utilizing the 2017 Accreditations Standards for Nutrition and Dietetics Internship Program competencies.\(^1\) The questions were based on the competencies for the DI as an indication of entry-level preparedness for the profession. The survey was validated by six RDNs that were not eligible for the survey but could provide content expertise.

The electronic survey consisted of 39 questions and took approximately 10-15 minutes to complete. The survey used a 7-point Likert scale and consisted of five different sections. Section 1 included initial exclusion question to indicate the RDN had been credentialed for \(\leq 5\) years; the answer choices were yes or no. If no was selected, the survey ended and the RDN was thanked for their participation. Section 2 consisted of seven demographic questions, which included age, gender, type of undergraduate program, highest level of education achieved, type of dietetic internship, length of RDN credential, and type of work environment. In section 3, the RDNs were asked to rate their perception of their career preparedness by responding to 27 questions relating to the following topics: quality in practice, competence and accountability, provision of services, research, communication, and utilization of resources. The answer choices were: Strongly Agree, Agree, Somewhat Agree, Neither Agree nor Disagree, Somewhat Disagree, Disagree, Strongly Disagree, and Not-applicable (N/A). Section 4 was made up of three qualitative questions that related to perceived RDN needs in their undergraduate, and/or graduate education as well as in their dietetic internship. Section 5 was the optional link to take part in the Amazon gift card raffle.

**Survey Implementation**

The RDNs from the list received by CDR were sent an initial email on January 14, 2021 (Appendix I). Two reminder emails were sent, one on January 21, 2021, and the other on January
28, 2021, to recruit the most participants. All participants who completed the survey were eligible to participate in the raffle. To be considered for the raffle, participants had to access the separate link and put in their email information. From the emails received, all were numbered, and two winners were chosen through a number randomization program. All the emails were destroyed after the gift cards were awarded.

**Data Collection and Statistical Analysis**

The Qualtrics® survey was closed on January 31, 2021. Data from the survey was downloaded onto a Microsoft Excel® (Version 16.48, Microsoft, Redmond, VA) spreadsheet and all variables were coded. Once data were coded, they were entered into Statistical Package for Social Sciences® (SPSS) (Version 25, International Business Machines Cooperation, Armonk, NY). All data were analyzed using SPSS.

**Analysis by Sub-Problem**

Among recently credentialed RDNs in the United States:

**Sub-Problem One:** What are their demographic characteristics?

For the categorical variables of age, gender, type of undergraduate program, highest level of education achieved, type of dietetic internship, length of RDN credential, and type of work environment, frequency distributions (n and %) were calculated. The demographics of the study sample were compared to the demographics of the CDR national registry using Chi-square and significance was established at \( p \leq 0.05 \).\(^4^5\)

**Sub-Problem Two:** What are their perceptions of career preparedness as it relates to all areas of practice?

The participants were asked 27 questions that assessed the career preparedness of RDN participants, these questions were a 7-point Likert scale as previously described. Responses to
each question were analyzed using descriptive statistics of mean and standard deviation. The mean and standard deviation of the entire set of question responses were calculated. The reliability of the survey questions was calculated using Cronbach’s alpha. Reliability was determined at the 0.7 level.46

**Sub-Problem Three:** What are their perceptions of career preparedness as it relates to: a) quality in practice b) competence and accountability c) provision of services d) application of research e) communication and application of knowledge f) utilization and management of resources.

The six domains of the SOPPs are quality in practice, competence and accountability, provision of services, application of research, communication and application of knowledge, and utilization and management of resources.32 The domains of professional performance help define minimal competence standards of practice for RDNs.32 The questions on the Qualtrics® survey were based on the competencies for the DI as an indication of entry-level preparedness for the profession. The questions on the survey were grouped into six scales or domains, representing the SOPPs to determine how participants viewed their career-preparedness in each domain measured. To determine internal consistency of the domains grouped in the survey, a Cronbach’s alpha was used on the 27 questions relating to the six domains. The reliability of the composite scales was determined at the 0.7 level.46 In order to determine the perceived career preparedness as it relates to each domain or scale, descriptive statistics of mean and standard deviation were calculated.

**Sub-Problem Four:** What is the difference in perceived career preparedness based on respondents’ level of education, type of undergraduate program, and type of dietetic internship (DI) as it relates to all areas of practice and specified domains of practice?
A one-way Analysis of Variance (ANOVA) was used to test for any significant differences between survey respondents based on their level of education, type of undergraduate program, and type of DI and their perceived career preparedness related to all areas of practice. Significance was set at ≤.05.

A Multivariate Analysis of Variance (MANOVA) was used to test for any significant differences between survey respondents perceived career preparedness on the domains (scales) of practice and their level of education, type of undergraduate program, and type of dietetic internship. Significance was set at ≤.05. To achieve normality, the levels of education of masters and doctoral were combined into graduate level of education to account for the fact that too few respondents were in the doctoral category. Additionally, type of undergraduate program was combined into two variables, DPD and other, due to the small number of participants who completed an undergraduate degree in nutrition from a non-accredited program, combined undergraduate DI program, international, or other.

**Sub-problem Five:** What gaps in education and preparation for entering the workforce are identified by RDNs as it relates to undergraduate, graduate, or supervised practice?

Survey respondents were asked to answer three open ended questions on their perceptions of additional experiential learning opportunities that were needed. A thematic analysis was conducted by the PI and a second coder. The responses were coded by the PI and placed into groups. The second coder confirmed the groups and responses were then reported as qualitative data.

**Institutional Review Board**

This research was approved as an exempt study by the University of Maine Institutional Review Board in an expedited review on January 5, 2021 (Appendix III). The study was
designed to be of minimal risk to participants. Participants were provided with the contact information of the PI, faculty advisor and the University of Maine office of Research Compliance should they have had any questions. The PI and co-investigators completed training on the protection and rights of human subjects in research through the Collaborative Training Initiative Program (CITI).
CHAPTER 4: RESULTS

The purpose of this study was to determine the career preparedness of recently credentialed Registered Dietitian Nutritionists (RDNs) (≤5 years). A survey was administered to newly credentialed RDNs January 14th-28th, 2021. The survey was sent to 5,000 RDNs across the US. Of the 5,000 RDNs contacted for this research, 388 participants responded to the survey via email (8% response rate). Data were cleaned and screened for missing responses and failure to meet inclusion criteria. Only complete surveys that met inclusion criteria were kept for data analysis, yielding 275 completed surveys (5.5%). Results are reported by sub-problem.

Among recently credentialed RDNs in the United States:

Sub-problem 1:

What are their demographic characteristics?

Demographic characteristics of the sample are reported in Table 1. The majority of survey respondents were between the ages of 25-34 years (61.8%; n=170). Fifteen percent (15.3%; n=42) were between the ages of 35-44 years. Most survey respondents were female (92.7%; n=255).

A majority of survey respondents completed a DPD program (66.2%; n=182), while (15.3%; n=42) completed a combined undergraduate/DI program. Another six percent (6.2%; n=17) completed an undergraduate degree in nutrition from a non-accredited program. Almost 11% of responses fell into the other category where respondents indicated the type of undergraduate program they had completed. Of the 30 participants in the other category, 70% (n=21) completed an undergraduate degree in a non-nutrition major, while the other 30% (n=7) were unclear in their responses to their undergraduate education.
In regard to level of education of survey respondents, almost 54% (53.8%; n=148) of respondents indicated that they had a master’s degree, followed by 42.9% (n=118) stating that they had an undergraduate degree, and finally, 3.3% (n=9) of respondents indicating that they had a doctoral degree.

Respondents were also asked to indicate the type of internship program completed. The most frequent response was the stand-alone internship (47.6%, n=131), followed by the combined master’s dietetic internship (MSDI) (37.5%; n=103), and the Individual Supervised Practice Pathway (ISPP) (5.8%; n=16). Nine percent (n=25) of respondents did not choose any of the specified pathways to the RDN credential, and instead indicated other for type of DI program. Data on the type of internship completed by respondents who chose other, was not captured in this survey.

Lastly, a majority of RDNs indicated that they held their credential for 4-5 years (42.9%; n=118), followed by 17.5%(n=48) for 0-1 year, 17.5%(n=48) for 1-2 years, 12%(n=33) for 2-3 years, and 10.2% (n=28) for 3-4 years.

Table 1: Demographic Profile of Survey Respondents (N=275)

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</tr>
<tr>
<td>25-34 years</td>
<td>170</td>
<td>61.8</td>
</tr>
<tr>
<td>35-44 years</td>
<td>42</td>
<td>15.3</td>
</tr>
<tr>
<td>45-54 years</td>
<td>20</td>
<td>7.3</td>
</tr>
<tr>
<td>55-64 years</td>
<td>17</td>
<td>6.2</td>
</tr>
<tr>
<td>65+</td>
<td>4</td>
<td>1.5</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>18</td>
<td>6.5</td>
</tr>
<tr>
<td>Female</td>
<td>255</td>
<td>92.7</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>0.7</td>
</tr>
</tbody>
</table>
Table 1 continued

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of Undergraduate Program</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPD</td>
<td>182</td>
<td>66.2</td>
</tr>
<tr>
<td>Undergraduate degree in nutrition (non-accredited program)</td>
<td>17</td>
<td>6.2</td>
</tr>
<tr>
<td>Combined undergraduate/DI program</td>
<td>42</td>
<td>15.3</td>
</tr>
<tr>
<td>International</td>
<td>4</td>
<td>1.5</td>
</tr>
<tr>
<td>Other</td>
<td>30</td>
<td>10.9</td>
</tr>
<tr>
<td><strong>Degree Earned</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor's degree</td>
<td>118</td>
<td>42.9</td>
</tr>
<tr>
<td>Master's degree</td>
<td>148</td>
<td>53.8</td>
</tr>
<tr>
<td>Doctoral degree</td>
<td>9</td>
<td>3.3</td>
</tr>
<tr>
<td><strong>Type of Dietetic Internship</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stand-alone internship</td>
<td>131</td>
<td>47.6</td>
</tr>
<tr>
<td>Combined MSDI</td>
<td>103</td>
<td>37.5</td>
</tr>
<tr>
<td>ISPP</td>
<td>16</td>
<td>5.8</td>
</tr>
<tr>
<td>Other</td>
<td>25</td>
<td>9.1</td>
</tr>
<tr>
<td><strong>Length of RDN Credential (Years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-1 year</td>
<td>48</td>
<td>17.5</td>
</tr>
<tr>
<td>1-2 years</td>
<td>48</td>
<td>17.5</td>
</tr>
<tr>
<td>2-3 years</td>
<td>33</td>
<td>12</td>
</tr>
<tr>
<td>3-4 years</td>
<td>28</td>
<td>10.2</td>
</tr>
<tr>
<td>4-5 years</td>
<td>118</td>
<td>42.9</td>
</tr>
</tbody>
</table>

The type of work environment reported by respondents is displayed in Table 2. The most frequently reported work environment was acute care/hospital setting (36.3%; n=74), followed by long-term care (12.74%, n=26), and community (6.4%; n=13). Respondents had the option to choose other as a category and write in a specific work environment. Over 31% chose the other
category (n=64). Work environments most listed by RDNs included outpatient settings, consulting, private practice, and searching for employment.

Table 2: Type of Work Environment (N=204)

<table>
<thead>
<tr>
<th>Type of Work Environment</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Care/Hospital Setting</td>
<td>74</td>
<td>36.3</td>
</tr>
<tr>
<td>Long-term care</td>
<td>26</td>
<td>12.74</td>
</tr>
<tr>
<td>Subacute</td>
<td>5</td>
<td>2.5</td>
</tr>
<tr>
<td>Foodservice Management/Corporate</td>
<td>2</td>
<td>0.98</td>
</tr>
<tr>
<td>Education/Academia</td>
<td>11</td>
<td>5.4</td>
</tr>
<tr>
<td>Community</td>
<td>13</td>
<td>6.4</td>
</tr>
<tr>
<td>Public Health</td>
<td>9</td>
<td>4.4</td>
</tr>
<tr>
<td>Other</td>
<td>64</td>
<td>31.4</td>
</tr>
</tbody>
</table>

1 Multiple responses permitted.

The results of the Chi-square analysis of the sample population compared to the expected population is reported in Table 3. The expected population was based on the CDR registry statistics and the Benefits and Compensation Survey completed by the Academy.\(^3\) Chi-square analysis indicated that there was a statistically significant difference between the genders of the national registry and the genders in the survey sample (p=0.019). This survey sample included more males than the registry’s sample (6.59% vs. 3.7%, p=0.019). However, there was no statistically significant difference between the levels of education of the survey sample and the levels of education of the national survey (p=0.397), indicating that this sample was comparable to the national population regarding their level of education.

Table 3: Chi-square analysis of Study Sample versus Expected Population\(^3,4,5\)

<table>
<thead>
<tr>
<th>Sample Population</th>
<th>273</th>
<th>Total RDNs CDR Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females</td>
<td>255 (93.4%)</td>
<td>Females</td>
</tr>
<tr>
<td></td>
<td></td>
<td>87,640 (93.9%)</td>
</tr>
<tr>
<td>Males</td>
<td>18 (6.59%)</td>
<td>Males</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3,486 (3.7%)</td>
</tr>
<tr>
<td>Unreported</td>
<td></td>
<td>Unreported</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2,194 (2.4%)</td>
</tr>
<tr>
<td>(X^2) value</td>
<td></td>
<td>p=0.019</td>
</tr>
</tbody>
</table>
Table 3 continued

<table>
<thead>
<tr>
<th>Sample Population</th>
<th>275</th>
<th>Total RDNs Compensation and Benefits Survey 2019</th>
<th>8,351</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Population</td>
<td>n (%)</td>
<td>RDNs Compensation and Benefits Survey 2019</td>
<td>n (%)</td>
</tr>
<tr>
<td>Bachelor's</td>
<td>118 (42.9%)</td>
<td>Bachelor’s</td>
<td>3,925 (47%)</td>
</tr>
<tr>
<td>Master’s</td>
<td>148 (53.8%)</td>
<td>Master’s</td>
<td>4,176 (50%)</td>
</tr>
<tr>
<td>Doctoral</td>
<td>9 (3.3%)</td>
<td>Doctoral</td>
<td>251 (3%)</td>
</tr>
<tr>
<td>X² value</td>
<td>p=.397</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sub-Problem Two:**

What are their perceptions of career preparedness as it relates to all areas of practice?

A lower mean score by respondents indicated they had a stronger perception of competence in the 27 competencies assessed. The 27 questions which assessed career preparedness demonstrated strong reliability by the Cronbach’s alpha factor (α=.928) and were further assessed. The mean ratings of each of the 27 competencies measured in the survey and the total mean score of perceived career preparedness from all the respondents were reported in Table 4. The mean total score was 2.05 (SD=0.63), indicating that respondents agreed with their perceived ability to perform the competencies. Respondents felt least prepared in the competency of “analyzing quality financial and productivity data for use in planning” as indicated by their response of somewhat agree M= 3.16 (SD=1.66). Conversely, respondents strongly agreed that they were able to “incorporate critical thinking in overall practice” M=1.48 (SD=.60) and “practice according to the Code of Ethics” M=1.48 (SD=.64).

Table 4: Mean Ratings of Career Preparedness (N=275)

<table>
<thead>
<tr>
<th>Competency</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apply evidenced-based guidelines in work environment</td>
<td>271</td>
<td>1.66</td>
<td>0.74</td>
</tr>
<tr>
<td>Competency</td>
<td>n</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>------</td>
<td>------</td>
<td>-----</td>
</tr>
<tr>
<td>Able to use effective education and counseling skills to facilitate behavior change</td>
<td>264</td>
<td>1.94</td>
<td>0.98</td>
</tr>
<tr>
<td>Able to select indicators of program quality and/or customer service and measure achievement of objectives</td>
<td>253</td>
<td>2.21</td>
<td>1.06</td>
</tr>
<tr>
<td>Justify programs, products, services, and care using appropriate evidence or data</td>
<td>267</td>
<td>1.97</td>
<td>0.85</td>
</tr>
<tr>
<td>Evaluate emerging research for application in nutrition and dietetics practice</td>
<td>267</td>
<td>1.96</td>
<td>0.90</td>
</tr>
<tr>
<td>Incorporate critical thinking in overall practice</td>
<td>272</td>
<td>1.48</td>
<td>0.60</td>
</tr>
<tr>
<td>Practice in compliance with current federal regulations and state statutes and rules</td>
<td>265</td>
<td>1.53</td>
<td>0.64</td>
</tr>
<tr>
<td>Familiar and able to practice according to the Code of Ethics for the profession of nutrition and dietetics</td>
<td>269</td>
<td>1.48</td>
<td>0.64</td>
</tr>
<tr>
<td>Function as a member of interprofessional teams</td>
<td>271</td>
<td>1.52</td>
<td>0.76</td>
</tr>
<tr>
<td>Apply leadership skills, learned during undergraduate, graduate, and/or supervised practice settings to achieve desired outcomes</td>
<td>271</td>
<td>1.79</td>
<td>1.01</td>
</tr>
<tr>
<td>Prioritize tasks and use time efficiently</td>
<td>272</td>
<td>1.57</td>
<td>0.79</td>
</tr>
<tr>
<td>Contribute professional attributes of maintaining composure, being adaptable to my work environment, and being self-assured</td>
<td>271</td>
<td>1.56</td>
<td>0.66</td>
</tr>
<tr>
<td>Show cultural competence, diversity and inclusion, in interactions with clients, colleagues, and staff</td>
<td>272</td>
<td>1.73</td>
<td>0.87</td>
</tr>
<tr>
<td>Perform self-assessment and develop goals for self-improvement in my work life</td>
<td>271</td>
<td>1.73</td>
<td>0.83</td>
</tr>
<tr>
<td>Competency</td>
<td>n</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----</td>
<td>------</td>
<td>-----</td>
</tr>
<tr>
<td>Prepare a plan for professional development according to the Commission on Dietetic Registration guidelines</td>
<td>270</td>
<td>2.17</td>
<td>1.22</td>
</tr>
<tr>
<td>Perform the NCP and use standardized language for individuals, groups and populations of differing ages and health status, in a variety of settings</td>
<td>253</td>
<td>1.86</td>
<td>0.95</td>
</tr>
<tr>
<td>Conduct nutrition focused physical exams</td>
<td>244</td>
<td>2.48</td>
<td>1.44</td>
</tr>
<tr>
<td>Demonstrate effective communication skills for clinical and customer services in a variety of formats and settings</td>
<td>270</td>
<td>1.62</td>
<td>0.64</td>
</tr>
<tr>
<td>Design, implement and evaluate presentations for a target audience</td>
<td>266</td>
<td>1.82</td>
<td>0.88</td>
</tr>
<tr>
<td>Develop and deliver products, programs or services that promote consumer health, wellness and lifestyle management</td>
<td>255</td>
<td>1.98</td>
<td>0.98</td>
</tr>
<tr>
<td>Coordinate procurement, production, distribution and service of goods and services, demonstrating and promoting responsible use of resources</td>
<td>241</td>
<td>2.7</td>
<td>1.34</td>
</tr>
<tr>
<td>Participate in the management of human resources</td>
<td>233</td>
<td>3.02</td>
<td>1.67</td>
</tr>
<tr>
<td>Conduct clinical and customer service quality management activities</td>
<td>249</td>
<td>2.42</td>
<td>1.32</td>
</tr>
<tr>
<td>Apply current nutrition informatics to develop, store, retrieve and disseminate information and data</td>
<td>249</td>
<td>2.36</td>
<td>1.26</td>
</tr>
<tr>
<td>Analyze quality financial and productivity data for use in planning</td>
<td>237</td>
<td>3.16</td>
<td>1.66</td>
</tr>
<tr>
<td>Propose and use procedures as appropriate in the practice setting to promote sustainability, reduce waste and protect the environment</td>
<td>249</td>
<td>2.92</td>
<td>1.52</td>
</tr>
</tbody>
</table>
Table 4 continued

<table>
<thead>
<tr>
<th>Competency</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop a plan to provide or develop a product, program or service that</td>
<td>245</td>
<td>3.04</td>
<td>1.63</td>
</tr>
<tr>
<td>includes a budget, staffing needs, equipment, and supplies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career preparedness of all areas of practice</td>
<td>186</td>
<td>2.05</td>
<td>0.63</td>
</tr>
</tbody>
</table>

Sub-Problem Three:

What are their perceptions of career preparedness as it relates to: a) quality in practice b) competence and accountability c) provision of services d) application of research e) communication and application of knowledge f) utilization and management of resources?

Individual competencies relating to career preparedness were grouped into 6 domains of practice (composite scales) based on the revised 2017 Standards of Professional Performance (SOPP). The reliability of the 6 scales was tested using Cronbach’s Alpha (Table 5). Reliability was determined at the 0.70 level.\textsuperscript{46} Domain 1: Quality in practice ($\alpha = 0.593$); Domain 2: Competence and accountability ($\alpha = 0.742$); Domain 3: Provision of services ($\alpha = 0.70$); Domain 4: Application of research ($\alpha = 0.603$); Domain 5: Application of knowledge ($\alpha = 0.671$); and Domain 6: Utilization and management of resources ($\alpha = 0.865$). Domains 2, 3, and 6 were all considered reliable ($\alpha = 0.742$, $\alpha = 0.70$, $\alpha = 0.865$).
Table 5: Reliability of 6 Domain Composite Scales

<table>
<thead>
<tr>
<th>Domain</th>
<th>Competencies</th>
<th>Cronbach’s Alpha Value</th>
</tr>
</thead>
</table>
| 1: Quality in Practice           | • Practice in compliance with current federal regulations and state statutes and rules  
                                 | • Prioritize tasks and use time efficiently                                   | 0.593                  |
|                                  | • Apply leadership skills, learned during undergraduate, graduate, and/or supervised practice settings to achieve desired outcomes |                        |
|                                  | • Conduct clinical and customer service quality management activities         |                        |
| 2: Competence & Accountability   | • Contribute professional attributes of maintaining composure, being adaptable to my work environment, and being self-assured  
                                 | • Show cultural competence, diversity, and inclusion, in interactions with clients, colleagues, and staff | 0.742*                 |
|                                  | • Prepare a plan for professional development according to the Commission on Dietetic Registration guidelines  
                                 | • Familiar and able to practice according to the Code of Ethics for the profession of nutrition and dietetics |                        |
|                                  | • Perform self-assessment and develop goals for self-improvement in my work life  
                                 | • Apply evidenced-based guidelines in work environment |                        |

*Indicates medium to high reliability ≥0.7
Table 5 continued

<table>
<thead>
<tr>
<th>Domain</th>
<th>Competencies</th>
<th>Cronbach’s Alpha Value</th>
</tr>
</thead>
</table>
| 3: Provision of Services | • Able to select indicators of program quality and/or customer service and measure achievement of objectives  
                          • Develop and deliver products, programs or services that promote consumer health, wellness and lifestyle management  
                          • Perform the NCP and use standardized language for individuals, groups and populations of differing ages and health status, in a variety of settings  
                          • Function as a member of interprofessional teams  
                          • Develop a plan to provide or develop a product, program or service that includes a budget, staffing needs, equipment and supplies  
                          • Conduct nutrition focused physical exams | 0.704* |
| 4: Application of Research | • Evaluate emerging research for application in nutrition and dietetics practice  
                          • Justify programs, products, services and care using appropriate evidence or data | 0.603 |

*Indicates medium to high reliability ≥0.7
<table>
<thead>
<tr>
<th>Domain</th>
<th>Competencies</th>
<th>Cronbach’s Alpha Value</th>
</tr>
</thead>
</table>
| 5: Application of Knowledge        | • Incorporate critical thinking in overall practice  
• Apply current nutrition informatics to develop, store, retrieve and disseminate information and data  
• Demonstrate effective communication skills for clinical and customer services in a variety of formats and settings  
• Design, implement and evaluate presentations for a target audience | 0.671                  |
| 6: Utilization & Management of Resources | • Propose and use procedures as appropriate in the practice setting to promote sustainability, reduce waste and protect the environment  
• Coordinate procurement, production, distribution and service of goods and services, demonstrating and promoting responsible use of resources  
• Participate in the management of human resources  
• Analyze quality financial and productivity data for use in planning | 0.865*                |

*Indicates medium to high reliability ≥0.7
The overall means and SD of each domain (composite scales) are listed in Table 6. The domain that was rated strongest among respondents was Domain 2: Competence and Accountability, $M=1.72$ ($SD = 0.56$). Responses fell between the strongly agree and agree. The domain with the weakest score was Domain 6: Utilization and Management of Resources; the mean was $M=2.93$ ($SD = 1.31$) which was associated most closely with somewhat agree. The weaker mean score indicated that respondents did not perceive they were prepared as well in the competencies within domain six, versus the five other domains.

Table 6: Perceived Career Preparedness as Grouped by Domain (Composite Scales) (N=275)

<table>
<thead>
<tr>
<th>Domain</th>
<th>n</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Quality in Practice</td>
<td>272</td>
<td>1.82 (0.65)</td>
</tr>
<tr>
<td>2: Competence &amp; Accountability</td>
<td>264</td>
<td>1.72 (0.56)</td>
</tr>
<tr>
<td>3: Provision of Services</td>
<td>207</td>
<td>2.15 (0.72)</td>
</tr>
<tr>
<td>4: Application of Research</td>
<td>262</td>
<td>1.96 (0.75)</td>
</tr>
<tr>
<td>5: Communication &amp; Application of Knowledge</td>
<td>247</td>
<td>1.82 (0.63)</td>
</tr>
<tr>
<td>6: Utilization &amp; Management of Resources</td>
<td>213</td>
<td>2.93 (1.31)</td>
</tr>
</tbody>
</table>

Sub-Problem Four:

What is the difference in perceived career preparedness based on respondents’ level of education, type of undergraduate program, and type of dietetic internship as it relates to all areas of practice (overall career preparedness) and specified domains of practice?

The mean and SD of overall career preparedness are listed by level of education. In Table 7, a one-way independent analysis of variance (ANOVA) was used to determine mean ratings of survey respondents. There were no statistically significant differences to report on perceived career preparedness as it relates to level of education ($F(184,1)=1.499, p=.222$).
Table 7: Difference in Mean Rating of Career Preparedness by Level of Education (N=186)

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>n</th>
<th>Mean (Std. Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor’s Degree</td>
<td>81</td>
<td>2.12(0.57)</td>
</tr>
<tr>
<td>Graduate Degree</td>
<td>105</td>
<td>2.00(0.67)</td>
</tr>
</tbody>
</table>

Significance $P=0.222$

The mean and SD of overall career preparedness are listed by type of undergraduate program. In Table 8 a one-way ANOVA was used to determine mean ratings of survey respondents. There were no statistically significant differences to report on perceived career preparedness as it relates to type of undergraduate program completed ($F(1,184)=.008, p=.927$).

Table 8: Difference in Mean Rating of Career Preparedness by Type of Undergraduate Program (N=186)

<table>
<thead>
<tr>
<th>Type of Undergraduate Program</th>
<th>n</th>
<th>Mean (Std. Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPD</td>
<td>60</td>
<td>2.05(0.62)</td>
</tr>
<tr>
<td>Other</td>
<td>58</td>
<td>2.06(0.66)</td>
</tr>
</tbody>
</table>

Significance $P=.927$

In Table 9, the mean overall scores of career preparedness are listed according to type of DI completed. As there were no respondents who indicated the future education model (FEM), this is not shown in the table. A one-way ANOVA was used to test the differences between overall mean ratings on the career preparedness survey by type of dietetic internship, with no statistically significant differences found ($F(3,182) = 1.970, p=.120$).
Table 9: Difference in Mean Rating of Career Preparedness by Type of Dietetic Internship (N=186)

<table>
<thead>
<tr>
<th>Type of DI Completed</th>
<th>n</th>
<th>Mean (Std. Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stand Alone Internship</td>
<td>91</td>
<td>2.03(0.56)</td>
</tr>
<tr>
<td>Combined MSDI</td>
<td>67</td>
<td>2.02(0.68)</td>
</tr>
<tr>
<td>ISPP</td>
<td>9</td>
<td>2.54(0.74)</td>
</tr>
<tr>
<td>Other</td>
<td>19</td>
<td>1.99(0.61)</td>
</tr>
</tbody>
</table>

Significance: $P=.120$

The mean scores, based on education levels of respondents, are presented as it relates to specified domains of practice. Those with a bachelor’s degree felt least prepared in domain 6, utilization and management of resources ($M=3.10$, $SD=1.22$) and most prepared in domain 2, competence and accountability ($M=1.73$, $SD=0.52$). Respondents with a graduate degree also felt least prepared in domain 6 ($M=2.82$, $SD=1.29$) although, they felt most prepared in domain 2, communication and application of resources ($M=1.74$, $SD=0.62$). In Table 10, a Multiple Analysis of Variance (MANOVA) was utilized to analyze results. There were no statistically significant differences found between the two levels of education in relation to the domains of practice $F(6,182)=1.016$, $p=.416$; Wilk’s $\Lambda = .968$, partial $n^2=.032$. 
### Table 10: Difference in Mean Rating of Domains as it Relates to Level of Education (N=189)

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Quality in Practice (mean ± SD)&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Competency &amp; Accountability (mean ± SD)&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Provision of Services (mean ± SD)&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Application of Research (mean ± SD)&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Communication &amp; Application of Knowledge (mean ± SD)&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Utilization &amp; Management of Resources (mean ± SD)&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor’s Degree</td>
<td>1.83±.6 1.73±.52</td>
<td>2.26±.69</td>
<td>1.97±.64</td>
<td>1.89±.61</td>
<td>3.10±1.22</td>
<td></td>
</tr>
<tr>
<td>n=81</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate Degree&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1.77±.64 1.77±.64</td>
<td>2.10±.76</td>
<td>1.94±.81</td>
<td>1.74±.62</td>
<td>2.82±1.29</td>
<td></td>
</tr>
<tr>
<td>n=108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> A lower mean score shows a stronger perception of career preparedness (1=Strongly Agree, 2=Agree, 3=Somewhat Agree, 4=Neither Agree nor Disagree, 5=Somewhat Disagree, 6=Strongly Disagree, 7=non-applicable).

<sup>b</sup> Graduate Degree= Master’s and/or Doctoral degree.

The mean scores, based on type of undergraduate program completed by respondents are presented as it related to specified domains of practice. Those who completed a DPD program felt least prepared in domain 6, utilization and management and resources (M=2.93, SD=1.27) and they felt most prepared in domain 2, competence and accountability (M=1.73, SD=.59). In respondents who pursued another route to become a RDN rather than a DPD program, they also felt least prepared in domain 6 (M=2.97, SD=1.27) and most prepared in domain 2 (M=1.69, SD=0.58). In Table 11, a MANOVA was utilized to analyze results. There were no statistically significant differences found between the different types of undergraduate programs as it relates to domains of practice F(24, 625.67) = .484, p=.982; Wilk’s Λ = .937, partial n²= .016.
Table 11: Difference in Mean Rating of Domains as it Relates to Type of Undergraduate Program (N=189)

<table>
<thead>
<tr>
<th>Type of Undergraduate Program</th>
<th>Quality in Practice (mean ± SD)a</th>
<th>Competency &amp; Accountability (mean ± SD)a</th>
<th>Provision of Services (mean ± SD)a</th>
<th>Application of Research (mean ± SD)a</th>
<th>Communication &amp; Application of Knowledge (mean ± SD)a</th>
<th>Utilization &amp; Management of Resources (mean ± SD)a</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPDb n=129</td>
<td>1.80±.6</td>
<td>1.73±.59</td>
<td>2.16±.71</td>
<td>1.96±.72</td>
<td>1.81±.58</td>
<td>2.93±1.27</td>
</tr>
<tr>
<td>Otherc n=60</td>
<td>1.78±.6</td>
<td>1.69±.58</td>
<td>2.18±.78</td>
<td>1.95±.74</td>
<td>1.79±.69</td>
<td>2.97±1.26</td>
</tr>
</tbody>
</table>

a A lower mean score shows a stronger perception of career preparedness (1=Strongly Agree, 2=Agree, 3=Somewhat Agree, 4=Neither Agree nor Disagree, 5=Somewhat Disagree, 6=Strongly Disagree, 7=non-applicable).

b DPD= Didactic Program in Dietetics

c Other= Undergraduate degree in nutrition (non-accredited program), Combined undergraduate/DI program, International, or “Other”.

The mean scores, based on type of DI completed by respondents, are presented as it relates to specified domains of practice. Those who completed a stand-alone internship felt least prepared in domain 6, utilization and management of resources (M=2.92, SD=1.16) and most prepared in domain 2, competence and accountability (M=1.69, SD=0.50). Respondents who completed a combined master’s and dietetic internship (MSDI) felt also felt least prepared in domain 6 (M=2.86, SD=1.16) and most prepared in domain 2 (M=1.72, SD=0.64). Those who participated in an individualized supervised practice pathway felt least prepared in domain 6 (M=3.37, SD=1.68) and most prepared in domain 5, communication and application of knowledge (M=2.08, SD=0.72). Lastly, respondents who took another route than those listed on the survey felt least prepared in domain 6 (M=3.12, SD=1.40) and most prepared in domain 1, quality in practice (M=1.53, SD=0.5). In Table 12, a MANOVA was utilized to analyze results. There were no statistically significant differences found between type of DI in relation to domains of practice F(18, 509.60) = 1.488, p=.089; Wilk’s Λ = .865, partial n²= .047.
Table 12: Difference in Mean Rating of Domains as it Relates to Type of Dietetic Internship (N=189)

<table>
<thead>
<tr>
<th>Type of Dietetic Internship</th>
<th>Quality in Practice (mean ± SD)a</th>
<th>Competency &amp; Accountability (mean ± SD)a</th>
<th>Provisio of Services (mean ± SD)a</th>
<th>Applicatio of Research (mean ± SD)a</th>
<th>Communication &amp; Application of Knowledge (mean ± SD)a</th>
<th>Utilization &amp; Manageme of Resources (mean ± SD)a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stand-alone internship n=91</td>
<td>1.83±.6 1.69±.50 2.15±.68 1.87±.66 1.82±.57 2.92±1.16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined MSDIb n=69</td>
<td>1.75±.6 1.72±.64 2.11±.74 1.99±.82 1.79±.62 2.86±1.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISPPc n=10</td>
<td>2.28±.6 2.20±.70 2.70±.95 2.45±.44 2.08±.72 3.37±1.68</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other n=19</td>
<td>1.53±.5 1.65±.64 2.14±.79 1.97±.84 1.63±.71 3.12±1.40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a A lower mean score shows a stronger perception of career preparedness (1=Strongly Agree, 2=Agree, 3=Somewhat Agree, 4=Neither Agree nor Disagree, 5=Somewhat Disagree, 6=Strongly Disagree, 7=non-applicable).
b Combined Master’s degree and dietetic internship program
c Individualized Supervised Practice Pathway

Sub-problem Five:

What gaps in education and preparation for entering the workforce are identified by RDNs as it relates to undergraduate, graduate, or supervised practice?

Responses on the survey relating to gaps in education and preparation were grouped into common themes. No common themes were identified in the perceived educational and experiential gaps in DI preparation. In Table 13 the respondents’ suggestions for undergraduate programs are listed.
Table 13: Educational and Experiential Gaps Identified at the Undergraduate Level (N=135)

<table>
<thead>
<tr>
<th>Theme</th>
<th>Gap Identified</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Experiences</td>
<td>• Observation/shadowing of clinical dietitians</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>• Clinical simulations and case studies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Nutrition focused physical exam</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• TPN and enteral nutrition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Advanced clinical nutrition</td>
<td></td>
</tr>
<tr>
<td>Business Management</td>
<td>• Billing/Insurance</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>• Management/leadership</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Entrepreneurship</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Human resources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Budgeting/finance</td>
<td></td>
</tr>
<tr>
<td>Experiential Learning</td>
<td>• Shadowing RDs working in the field</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>• Volunteer opportunities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Exposure to RDs working in different settings</td>
<td></td>
</tr>
<tr>
<td>Understanding of Career Preparedness</td>
<td>• More awareness of career preparedness for RDs</td>
<td>6</td>
</tr>
<tr>
<td>Counseling</td>
<td>• Motivational interviewing</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>• One-on-one counseling experiences</td>
<td></td>
</tr>
</tbody>
</table>

Table 14 lists the perceived educational and experiential gaps at the graduate level. Again, these were grouped by theme.

Table 14: Educational and Experiential Gaps Identified at the Graduate Student Level (N=58)

<table>
<thead>
<tr>
<th>Theme</th>
<th>Gap Identified</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Management</td>
<td>• Leadership and management training</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>• Private practice and business</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Insurance and billing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Building budgets</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Human resources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Marketing</td>
<td></td>
</tr>
<tr>
<td>Case Studies and Clinical Experiences</td>
<td>• More challenging case studies</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>• More clinical experiences</td>
<td></td>
</tr>
<tr>
<td>Theme</td>
<td>Gap Identified</td>
<td>n</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>----</td>
</tr>
<tr>
<td>Networking</td>
<td>• Connecting with more professionals in the field</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>• Working in interdisciplinary teams</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Involvement with other graduate students from other healthcare professions</td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td>• Critically evaluate journal articles</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>• Grant writing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Research process</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Translating research to clinical practice</td>
<td></td>
</tr>
<tr>
<td>Experiential Learning</td>
<td>• Hands-on projects and learning</td>
<td>13</td>
</tr>
</tbody>
</table>
CHAPTER 5: DISCUSSION

This study was conducted to evaluate the career preparedness of recently credentialed RDNs (≤5 years). The perception of career preparedness among newly credentialed RDNs is important to the advancement of professionals in the field of nutrition. Leaders and educators, who have a comprehensive understanding of the skills attributed to career preparedness, will be able to provide effective preparation, guidance, and direction as students transition to the workforce.

The demographic characteristics that were collected from this study were age, gender, type of undergraduate program, highest level of education achieved, type of dietetic internship (DI), length of RDN credential, and type of work environment. Career preparedness of RDNs was assessed overall and based on type of undergraduate program completed, highest level of education achieved, and type of dietetic internship (DI). By assessing career preparedness, as it relates to these demographic characteristics, conclusions could be drawn about the strengths and opportunities for improvement in programs that prepare RDNs.

Overall, respondents agreed they were well prepared and able to perform at a competent level in the workplace. The perception of competence and a sense of being prepared were common trends in studies that assessed career readiness of dietetic program graduates. Brissette and colleagues surveyed DI graduates of St. Michael’s DI and Combined MS internship program in Canada. The researchers found that the overall perception of a graduate's career preparedness was positive, indicated by a rating of greater than 4 on the 5-point Likert scale (between the rating of well prepared to very well prepared). Similarly, Rose and colleagues administered a survey to dietetic students and program coordinators in Canada. Likewise, respondents had a positive perception of career readiness. The perception was shown
by a 4.00 on the 5-point Likert scale showing participants felt well prepared or better in the 45 competencies for entry-level dietetics practice.\textsuperscript{40}

The Academy recognizes nine core essential competencies that apply to all RDNs regardless of work environment. The competencies are as follows: (1) Ethics and Professionalism, (2) Communications, (3) Leadership and Advocacy, (4) Critical Thinking and Decision Making, (5) Informatics, (6) Research, Evidenced-Informed Practice and Quality Improvement, (7) Safety and Risk Management, (8) Food, Nutrition and Dietetics and Physical Activity, and (9) Education and Counseling.\textsuperscript{34} In our study, the two individual competencies rated most highly among all respondents were “Incorporate critical thinking skills in overall practice” and “practice according to the Code of Ethics”.\textsuperscript{47} These two areas, in relation to the nine core essential competencies, indicate that RDNs feel most confident in the competencies of ethics and professionalism and critical thinking and decision making. In addition to the perceived confidence in these two areas, there is also evidence that contributes to the overall benefits of competency-based learning in places outside of the U.S.

At Qatar University, an Internationally ACEND®-accredited program, the use of competencies as a measurement of career readiness has contributed to positive feedback from preceptors and employers of program graduates.\textsuperscript{42} Bawadi and colleagues\textsuperscript{42} found that the International Dietetic Accreditation Standards (IDAS) corresponded positively with employability. In Turkey, through interviews of graduates from six non-accredited dietetics programs, researchers recognized the need for a skill-based approach to education.\textsuperscript{10} Aksoydan and Mizikaci\textsuperscript{10} interviewed employers that worked closely with dietitians. Employers expressed the need for dietitians to develop skills through practice in addition to the theory-based knowledge acquired by graduates.\textsuperscript{10} A skill-based approach to education is found in IDAS
programs through the use of supervised practice settings for students to acquire practice and apply theory-based knowledge.\textsuperscript{10} The impact of competency-based learning unifies programs in their approach to preparing the graduates for the workforce.\textsuperscript{12,40}

In our study, the type of undergraduate program did not make a difference in overall perceived career preparedness as well as perceived career preparedness in the domains of practice. Overwhelmingly, RDNs completed a DPD program, however, RDNs who had not completed a DPD did not feel any less prepared than their DPD-prepared colleagues. Since a DI program’s primary function is to prepare graduates for practice, it may be that RDNs received all the necessary skills to feel prepared for practice from the DI and type of undergraduate program was not a factor. More research would be needed to determine if the type of undergraduate program plays a significant role in RDNs’ perceived career readiness.

Similarly, there were no differences found between respondents who held a bachelor’s degree versus those who held a graduate level degree (master’s and/or doctoral) and their perception of career preparedness. In 2002, a similar result was found in a survey conducted by Barr and colleagues.\textsuperscript{25} Researchers assessed four areas of dietetic students’ preparation to determine the perceptions of each component. The area which rated most highly among respondents for professional preparation was the DI. Additionally, there appeared to be no significant relationship between highest degree achieved and perceived career preparedness.\textsuperscript{25} This finding may also suggest that the DI has the greatest influence on how a newly credentialed RDN perceives their career readiness.

There were also no perceived differences in overall career preparedness in respondents who completed a standalone DI versus a MS/DI or Individualized Supervised Practice Pathway (ISPP). This finding may be due to the DI having a specific set of standards and competencies
that all interns must meet before completion without regard for the type of DI. DI programs allow for valuable learning experiences to take place in the real-world setting. Despite the time and organization necessary to develop experiential learning opportunities for students, ACEND® has created a pathway for students to gain fundamental skills. The skills that are acquired prepare students to be confident and qualified RDNs.

Experiential learning is the primary focus of the DI. This model of learning is defined as a complex process that incorporates the trial-and-error method to learn a skill and perform it.24 Education that uses experiential learning has been shown to provide several benefits to students in preparing them for the workforce.24 Wurdinger and Allison24 surveyed faculty members on their views of experiential learning. Respondents identified several life skills that were enhanced by experiential learning and the top three included critical thinking, problem solving, and communication.24 The experiential learning that takes place during the DI likely contributes most to the RDNs perception of career readiness. The skills taught during the DI are practiced through a cognitive process more complex than memorizing information which is used in traditional academic settings. This may be a reason why overall career preparedness was not impacted by level of education, type of undergraduate program, or type of DI. All newly credentialed RDNs obtained many of their skills for the workplace through the DI.

The individual competencies assessed in the survey were grouped into six domains based on the revised 2017 Standards of Practice (SOP) in Nutrition Care and Standards of Professional Performance (SOPP) for RDNs.32 RDNs gained valuable skills through the DI that contributed to a strong feeling of career preparedness overall. In the domain of Utilization and Management of Resources, RDNs indicated that they did not feel as prepared as they did in the other domains assessed in the survey. This domain involves ensuring performance aligns with the
organization’s mission, tracking outcomes and trends, planning and delivering products and services, and using a systematic approach to manage resources and make improvements in the organization.\textsuperscript{32} Those with a bachelor’s degree felt least prepared in managing resources as well as those with a graduate level degree. At the undergraduate level, RDNs who identified completion of a DPD as well as those who completed programs other than the DPD, felt least prepared to manage resources. Lastly, all RDNs, regardless of type of DI completed, felt least prepared in managing resources. Despite the different routes of preparation in obtaining the RDN credential, overall, utilization and management of resources rated the weakest in RDNs perceptions of their career preparedness. One reason for these perceptions might be due to the RDNs being newly credentialed. Those who are recently employed may need more time in work environments to develop management skills. However, more opportunities in management throughout the course of undergraduate, graduate, and DI programs, may equip students to feel better prepared to take on the role of managing, leading, and utilizing resources in the workplace.

Additionally, the findings from our study are also consistent with other research results.\textsuperscript{12,40} Brissette and colleagues\textsuperscript{12} found that their respondents identified management and leadership as gaps in training. Additionally, in the survey conducted by Rose and colleagues,\textsuperscript{40} respondents identified management as one of their areas of concern, and felt that there was a greater emphasis in the clinical setting versus food service and community and pointed out that in the settings of food service and community nutrition, management training should be strengthened.

Based on the survey results from this study and similar results from other studies,\textsuperscript{12,29,40} it would appear that RDNs would benefit from management training at a greater level than what is
presently being provided. Opportunities for DPD students and dietetic interns to build skills in management and leadership should be reviewed and enhanced by DPD and DI directors to ensure there are adequate opportunities in the programs for students to strengthen those skills.

Although there were gaps identified by respondents in the domain of utilization and management of resources, RDNs felt strongly prepared in the domain of competence and accountability in our study. This domain is focused on the RDN being an adaptable and self-confident professional, who understands health equity among diverse populations and can self-assess for continuous improvement, practice according to the Code of Ethics, and follow evidence-based guidelines. This competency aligns closely with three of the National Association of Colleges and Employers (NACE) competencies, 1) professionalism and work ethic, 2) critical thinking and problem solving, and 3) global/intercultural fluency. Koemel and colleagues compared the skills and competencies acquired in the DPD and DI programs to the eight NACE competencies that act as a framework for career readiness in all industries. These competencies are listed as the following: 1) critical thinking/problem solving, 2) oral/written communications, 3) teamwork/collaboration, 4) digital technology, 5) leadership, 6) professionalism/work ethic, 7) career management, and 8) global/intercultural fluency. Undergraduate, graduate, and DI program curriculum contribute to these three competencies: 1) professionalism and work ethic, 2) critical thinking and problem solving, and 3) global/intercultural fluency that are recognized by NACE as being important in career readiness.

The domain of competence and accountability, rated most highly by our respondents, indicates that RDN training programs in the U.S. are successfully preparing RDNs in this area. Dietitians are fulfilling their role of advancing the profession through practice using the Code of Ethics and evidence-based guidelines. They also feel ready to self-assess themselves as
professionals and create new goals that will contribute to their professional development. This important finding reveals that the Academy competency-based approach to learning is advantageous to the development of RDNs and their transition from students to professionals practicing in the workplace.

In addition to looking at the impact of the level of education, type of undergraduate, and type of DI, we also queried respondents on the perceived gaps in their education and experiential learning at the undergraduate, graduate and DI level. Business management was identified in our study as an area of improvement at all levels of education and training. This feedback from respondents corroborates with our earlier finding of RDNs feeling less prepared in management skills and further emphasizes the need to strengthen curricula at the undergraduate, graduate and DI level regarding management competencies. Other gaps that were identified by respondents at the graduate level were networking and research. With this knowledge, program directors could evaluate graduate programs for missed opportunities in these two areas. Networking could be enhanced by having visits from local RDNs to talk with students during class. Educators can also actively communicate to students opportunities to enhance networking such as volunteer, shadow experiences, nutrition clubs and involvement with the Academy state affiliate boards. The importance of networking should be discussed at the graduate level and students should be encouraged to develop connections with RDNs at the local, state, and national levels. Research is also an important area for educators to assess within their programs. Programs could strengthen this area by increasing assignments and projects that incorporate the use of evidenced-based research. Seminar-style classes based on nutrition research may foster critical thinking and use of research in graduate education programs.
The results of this study show that RDNs do feel prepared to practice in the workplace and that there are no significant differences in perceived career preparedness of newly credentialed RDNs based on type of undergraduate program, level of education, or type of DI. The DI, as an experiential learning component, is a strong contributor in preparing students to transition to the workforce as an entry level RDN. It appears that there are some areas that should be improved upon within dietetic programs at all levels. Many of the results of this study can be used to inform curricula and learning experiences in dietetic programs.

Limitations and Strengths of the Study

There were limitations in this study. The survey answers were self-reported by respondents. The answers relied on the respondents’ memory of dietetic education programs. The perceptions of career readiness may differ among individual respondents depending on their own self-expectations. Another limitation of this study was that there was a significant difference in the demographics of the respondents regarding gender as compared to the national registry of RDNs. Our sample had significantly more males than indicated by the national registry.

Strengths of the study include that the survey tool used in this study was reviewed by RDNs before it was sent to our sample. Furthermore, the sample of RDNs was representative of the national population regarding level of education. This indicates that the results of this survey can be compared to the perception of career preparedness of recently credentialed RDNs in the US.

Implications for Practice

The results of this study demonstrate that there is a strong level of overall perceived career preparedness in recently credentialed RDNs practicing in the US. ACEND® programs prepare RDNs to be confident, knowledgeable, and effective professionals who adapt to the
demands in the field of nutrition. Competency-based education is effective in training nutrition professionals to feel career-ready. DPD and DI directors, as student and intern mentors, can set goals for curricular enhancement of their programs by providing opportunities to develop skills in the management of resources, including human resources as well as leadership and research skills.

Based on study results, there is a need for program evaluation at all levels of dietetics education. DPD and DI programs need to be assessed for their effectiveness in career preparation on a regular basis. As new standards are published by ACEND® and competencies change, so should education and experiential learning. In addition, surveying RDNs is an effective way to learn about perceived career-readiness as well as gaps in education and training. For the advancement of the dietetics’ profession to take place, the voices of RDNs need to be taken into consideration when building a framework for nutrition education. Further research, designed to explore RDNs perspectives on their education and training needs will continue to inform the profession, making for competent practitioners.
REFERENCES


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27. Adopted June 12 , 2017 ; Effective July 1 , 2017 Updated January 24 , 2019 ; Effective July 1 , 2019. Published online 2019:1-30.


34. Nutrition C, Practitioners D. Essential Practice Competencies Essential Practice Competencies. 2014;(October).


Dear RDN,

Hello! My name is Maegan Perrault, and I am a current Master’s student and junior dietetic intern at the University of Maine. We are asking you to participate in a one-time online survey about your perception of career preparedness of newly credentialed RDNs. This research is taking place under the guidance of my faculty advisor, Dr. Mona Therrien.

This survey will take ten minutes to complete and upon completion, you will have the opportunity to take part in a raffle to win one of two $25 Amazon gift cards. Your answers on this survey will remain anonymous and your email information will not be connected to any of your survey answers.

If you would like to participate, please click on this link ( ) This survey will close on ( ).

If you have any questions or concerns, please contact me at maegan.perrault@maine.edu or the faculty advisor of this study at mona.therrien@maine.edu. We appreciate your time and consideration. Your answers will help to improve the preparation of future nutrition and dietetic students entering the profession.

With gratitude,

Maegan Perrault
Graduate Student
Junior Dietetic Intern University of Maine maegan.perrault@maine.edu

Dr. Mona Therrien DCN, RD, LD
Dietetic Internship Director
Maine Academy of Nutrition and Dietetics President-Elect University of Maine
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Orono, ME 04469
(207)581-3130, mona.therrien@maine.edu
APPENDIX II QUALTRICS SURVEY

Exclusion Question

Are you a recently credentialed RDN? (within the past 5 years)

Yes
No

Demographic Questions

What is your age?

18 - 24 years
25 - 34 years
35 - 45 years
45 - 54 years
55 - 64 years
65+

What is your gender?

Male
Female
Trans-male/Trans-man
Trans-female/Trans-woman
Gender non-conforming

Different identity - please state:
Choose not to answer

**Identify the type of undergraduate program you completed.**

Didactic Program in Dietetics (DPD)

Undergraduate degree in nutrition (non-accredited program)

Combined undergraduate/dietetic internship program International

Other - please state:

**Identify the highest level of education achieved.**

Bachelor's Degree

Master's Degree

Doctoral Degree

**Identify the type of dietetic internship completed.**

Stand-alone internship

Combined MSDI (Master's Dietetic Internship)

FEM (Future Education Model)

ISPP (Individualized Supervised Practice Pathway)

Other
How long have you been credentialed as a RDN?

0-1 year
1-2 years
2-3 years
3-4 years
4-5 years

What is your type of work environment? (May choose more than one)

Acute Care/Hospital Setting Long-term care
Subacute
Foodservice Management/Corporate Education/Academia
Community
Public Health
Other - please state

Career Readiness for Profession

Rate your career preparedness by responding to the following statements.

I am able to apply evidence-based guidelines in my work environment.

Strongly agree
Agree
Somewhat agree
Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

**I am able to use effective education and counseling skills to facilitate behavior change.**

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

**I am able to select indicators of program quality and/or customer service and measure achievement of objectives.**
I am able to justify programs, products, services and care using appropriate evidence or data.

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree
I am able to evaluate emerging research for application in nutrition and dietetics practice.

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

I am able to incorporate critical-thinking skills in overall practice.

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree
Disagree

Strongly disagree

N/A

I am able to practice in compliance with current federal regulations and state statutes and rules.

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

I am familiar and able to practice according to the Code of Ethics for the profession of nutrition and dietetics.

Strongly agree

Agree

Somewhat agree
Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

**I am able to function as a member of interprofessional teams.**

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

**I am able to apply leadership skills, learned during undergraduate, graduate, and/or supervised practice settings to achieve desired outcomes.**

Strongly agree
I am able to prioritize tasks and use time efficiently.

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A
I am able to contribute professional attributes of maintaining composure, being adaptable to my work environment, and being self-assured.

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

I am able to show cultural competence, diversity and inclusion, in interactions with clients, colleagues, and staff.

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree
Strongly disagree

N/A

*I am able to perform self-assessment and develop goals for self-improvement in my work life.*

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

*I am able to prepare a plan for professional development according to the Commission on Dietetic Registration guidelines.*

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree
Somewhat disagree

Disagree

Strongly disagree

N/A

I am able to perform the NCP (Nutrition Care Process) and use standardized language for individuals, groups and populations of differing ages and health status, in a variety of settings.

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

I am able to conduct nutrition focused physical exams.

Strongly agree

Agree
Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

**I am able to demonstrate effective communication skills for clinical and customer services in a variety of formats and settings.**

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

**I am able to design, implement and evaluate presentations for a target audience.**
Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

I am able to develop and deliver products, programs or services that promote consumer health, wellness and lifestyle management.

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree
I am able to coordinate procurement, production, distribution and service of goods and services, demonstrating and promoting responsible use of resources.

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

I am able to participate in the management of human resources.

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree
Disagree

Strongly disagree

N/A

I am able to conduct clinical and customer service quality management activities.

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

I am able to apply current nutrition informatics to develop, store, retrieve and disseminate information and data.

Strongly agree

Agree

Somewhat agree
Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

I am able to analyze quality financial and productivity data for use in planning.

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

I am able to propose and use procedures as appropriate in the practice setting to promote sustainability, reduce waste and protect the environment.

Strongly agree
Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A

I am able to develop a plan to provide or develop a product, program or service that includes a budget, staffing needs, equipment and supplies.

Strongly agree

Agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

Disagree

Strongly disagree

N/A
Qualitative Questions

The following questions intend to collect more information about your experiences to create a more effective undergraduate program.

As an undergraduate student, what experiential learning opportunities could have helped you better prepare for your career?

As a graduate student what experiential learning opportunities could have helped you better prepare for your career? Please indicate no graduate degree if it has not been completed.

During your dietetic internship, what experiential learning opportunities could have helped better prepare you for your career?

Participation in Raffle

Do you wish to participate in a raffle to receive one of two $25 Amazon gift cards

Yes

No
APPENDIX III IRB APPROVAL

APPLICATION COVER PAGE
- KEEP THIS PAGE AS ONE PAGE – DO NOT CHANGE MARGINS/FONTS!!!!!!!!!
- PLEASE SUBMIT THIS PAGE AS WORD DOCUMENT

APPLICATION FOR APPROVAL OF RESEARCH WITH HUMAN SUBJECTS
Protection of Human Subjects Review Board, 400 Corbett Hall

(Type inside gray areas)
PRINCIPAL INVESTIGATOR: Maegan Perrault EMAIL: maegan.perrault@maine.edu
CO-INVESTIGATOR: EMAIL:
CO-INVESTIGATOR: EMAIL:
FACULTY SPONSOR: Dr. Mona Therrien EMAIL: mona.therrien@maine.edu
(Required if PI is a student):
TITLE OF PROJECT: Career Readiness of Newly Credentialed Registered Dietitian Nutritionists (RDN)
START DATE: 1/5/2021 PI DEPARTMENT: Food Science and Human Nutrition

STATUS OF PI: FACULTY/STAFF/GRADUATE/UNDERGRADUATE (F,S,G,U)

If PI is a student, is this research to be performed:
☐ for an honors thesis/senior thesis/capstone? ☑ for a master’s thesis?
☐ for a doctoral dissertation? ☐ for a course project?
☐ other (specify)

Submitting the application indicates the principal investigator’s agreement to abide by the responsibilities outlined in Section I.E. of the Policies and Procedures for the Protection of Human Subjects.

Faculty Sponsors are responsible for oversight of research conducted by their students. The Faculty Sponsor ensures that he/she has read the application and that the conduct of such research will be in accordance with the University of Maine’s Policies and Procedures for the Protection of Human Subjects of Research. REMINDER: if the principal investigator is an undergraduate student, the Faculty Sponsor MUST submit the application to the IRB.

Email this cover page and complete application to UMRIC@maine.edu

**********************************************************************************************
FOR IRB USE ONLY Application # 2020-12-13 Review (F/E): E Expedited Category:
ACTION TAKEN:
☑ Judged Exempt; category 2 Modifications required? Yes Accepted (date) 1/5/2021
☑ Approved as submitted. Date of next review: by Degree of Risk:
☑ Approved pending modifications. Date of next review: by Degree of Risk:
☐ Modifications accepted (date):
☐ Not approved (see attached statement)
☐ Judged not research with human subjects

FINAL APPROVAL TO BEGIN 1/5/2021
Date

10/2018
BIOGRAPHY OF THE AUTHOR

Maegan Perrault was born in Biddeford Maine on December 23rd, 1996. She was raised in Biddeford, Maine and graduated from Biddeford High School in 2015. She attended the University of Maine Orono and graduated in 2020 with a bachelor’s degree in Food Science and Human Nutrition. She will complete her dietetic internship at Maine Medical Center and Mercy Hospital in Portland Maine. Maegan values serving others especially through teaching people how to nourish and care for their bodies. Her passions for cooking a good-tasting meal, meaningful conversation, and living a healthy lifestyle have all inspired her to work as a Registered Dietitian Nutritionist. Maegan is a candidate for the Master of Science degree in Food Science and Human Nutrition from the University of Maine in August of 2022.