Registered dietitians in school nutrition leadership and dietetic students' consideration of school nutrition

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Registered dietitians in school nutrition leadership and dietetic
students’ consideration of school nutrition

by

Linette J. Dodson

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Hospitality Management

Program of Study Committee:
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Iowa State University
Ames, Iowa
2014

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DEDICATION

This dedicated goes to my amazing family who provided constant love, support and patience. Without them, this dissertation would never have been achieved.

Randal M. Dodson
Cortney R. Dodson
Taylor M. & Christy S. Dodson
Austin R. Dodson
Prince, Jack, Dooley & Molly
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ABSTRACT

School nutrition programs provide meals and snacks to nutritionally support students in their academic achievement. The importance of qualified leadership to maintain standards and provide quality these meals and snacks is important. Limited research has examined the benefits of registered dietitians providing school nutrition leadership. The purpose of this study was to evaluate the motivational aspects and job responsibilities influencing registered dietitians’ (RD) and senior dietetic students’ decision to pursue school nutrition leadership positions.

The Southeast Food and Nutrition Services (FNS) division of the United States Department of Agriculture (USDA) region was the focus of the research. Web-based questionnaires were used to collect responses from members of the School Nutrition Services Dietetic Practice Group (SNSDPG) members and senior dietetic students from 22 Academy of Nutrition and Dietetic accredited didactic programs in this area. Reasons RDs (N = 158) selected school nutrition leadership and reasons dietetic students (N = 129) would consider selecting a position in school nutrition were examined and compared. Motivational aspects and job responsibilities providing satisfaction for RDs were identified. The reasons students would not select school nutrition as a career option were also examined.

Key aspects influencing RD selection of school nutrition leadership positions were want to engage/work with people ($M = 4.55; SD = 0.68$) and achieved a positive outcome ($M = 4.53; SD = 0.64$). Employee opportunities and outcomes were identified as the aspects impacting RD selection. Student selection of potential school nutrition
leadership positions was influenced by *impact others’ health and well-being* ($M = 4.42; SD = 0.63$), *positive impact on preventing childhood obesity* ($M = 4.32; SD = 0.76$) and *influence others* ($M = 4.37; SD = 0.65$). Students not selecting a school nutrition position were influenced by intentions to *develop clinical dietetics knowledge* ($M = 3.51; SD = 1.10$) and *clinical skills* ($M = 3.36; SD = 1.11$). Comparisons between RD and student selection of school nutrition responses differences were significant ($p < 0.0001$) for aspects such as *foodservice leadership skills*, *work schedule preference*, *make a difference in the world* and *preventing childhood obesity*.

Based on the results of this research, aspects influencing current RDs to select school nutrition appear to be associated with working with others to achieve a positive outcome. While the senior dietetic students demonstrated interest in school nutrition for the opportunity to make a difference in the world, specifically with health. Consideration of these aspects may be beneficial to school districts seeking to recruit qualified individuals, specifically RDs, into school nutrition leadership positions.

*Keywords:* Leadership, job responsibilities, motivational aspects, school nutrition, registered dietitian.
CHAPTER 1: INTRODUCTION

National School Lunch and Breakfast Programs play an important role in school educational programs. In 2013, individual schools served federally supported lunches daily to more than 30.4 million children, and 13.02 million students were served breakfast (USDA, 2014a). Nationwide, the American Dietetic Association (ADA, currently known as the Academy of Nutrition and Dietetics) supports the 2010 Dietary Guidelines for Americans standard applied to foods and beverages sold daily to students. Registered dietitians (RDs) and dietetic technicians support policy-making, management, education, and community roles associated with nutritional integrity (ADA, 2010) and this nutrition integrity should also be applied in the school environment.

The leadership originating the first school lunch programs held RD credentials. The current leadership for nutrition programs is comprised of individuals with varied credentials, many of whom are RDs. The USDA has recommended that national credentials be established to require a standard competency level for state and local program leadership (USDA, 2014; USDA, 2010). Program management includes a range of challenges associated with safely providing nutritionally sound meals acceptable to students and that meet limited program budget parameters (ADA, 2010). RDs possess many skills to meet program requirements. Research has evaluated the competency level of RDs in foodservice management roles, particularly in hospital settings (Gregoire, Sames, Dowling, & Lafferty, 2005; Lee & Yoon, 2009; Halling & Hess, 1995). However, an analysis of RDs’ leadership roles in school nutrition programs has not been published. Additionally, evaluating dietetic students’ exposure to school nutrition, and whether exposure influences desires to pursue careers in school nutrition, could provide valuable insight for future program leadership development.
Purpose of the Study

The purpose of the research was to evaluate aspects influencing RDs currently in school nutrition leadership roles. Understanding what motivated current school nutrition leaders to select school nutrition as a profession may have implications for recruiting future dietitians into this career option. The application of this research may assist with strategies for the advancement of dietitians as effective leaders in school nutrition (Gregoire & Arendt, 2004). Also evaluating RDs present academic exposure to school foodservice management opportunities may determine the effectiveness of introducing management options to dietetics students. Dietetic students should be provided with an inclusive list of job opportunities including school nutrition program management (Puckett et al., 2009).

In total, there are seven FNS USDA regions which include the Northeast, Northwest, Mountain Plains, Western, Mid Atlantic, Southwest and Southeast regions. The Southeast FNS USDA region includes Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee (USDA, 2013a). Many states have credentialing requirements for school nutrition personnel in leadership roles (O’Toole, Anderson, Miller, & Guthrie, 2007). In 2012, there were 22 states with professional standards for school nutrition staff, and four of these states were in the Southeastern USDA region (USDA, 2012). The USDA proposed national professional credentials for school nutrition state and district directors as required by the 2010 Healthy Hunger Free Kids Act in Section 306 (USDA, 2014). Researchers suggested that nutrition training for registered dietitians focused on school nutrition may be an appropriate educational preparation for school foodservice directors (O’Toole et al.,
The purpose of this research was to determine motivational aspects and job responsibilities associated with current RDs in school nutrition working in leadership roles, at the state, local district and unit management levels and senior dietetic students’ consideration of school nutrition leadership as a career option.

**Research Objectives**

The research study evaluated motivational aspects and school nutrition job position responsibilities influencing RDs selection of school nutrition program leadership positions, and senior dietetic students’ decisions to pursue careers in school foodservice leadership. The research was conducted in the Southeast FNS USDA region and the primary objectives of the study were to:

1. Identify the perceived motivational aspects that prompted registered dietitians to select school nutrition leadership for their current career occupation;
2. Identify the job related responsibilities registered dietitians find satisfying in school nutrition leadership;
3. Determine the reasons why senior dietetic students consider school nutrition as a profession;
4. Identify perceived motivational aspects influencing current senior dietetic students to not consider school nutrition as a profession;
5. Compare survey responses by registered dietitians in school nutrition leadership with those of senior dietetic students on motivational aspects;
6. Compare survey responses by registered dietitians in school nutrition leadership with those of senior dietetic students on job responsibilities.
Significance of Study

Limited research has evaluated RDs’ leadership abilities in foodservice management (Gregoire, Sames, Dowling, & Lafferty, 2005; Lee & Yoon, 2009; Halling & Hess, 1995). Specifically, no known research has examined the aspects influencing RDs (current and future) to select a career in school nutrition. This research is potentially meaningful for school nutrition and dietetic educators, and dietetic students. Educators may use the study’s findings to further determine the best method to present registered dietitians options for careers in school nutrition. Thornton (2007) presented concern regarding the current school nutrition leadership pending retirement. Educators may use this information for continued development of effective district-level program management leadership, and better appeal to dietetic students considering this field as a leadership career opportunity.

The results of this research are beneficial for foodservice management professionals as well as educators and administrators at institutions focused on school nutrition and dietetics because it could contribute to the development of future school nutrition leadership. School nutrition professionals should also promote career opportunities for qualified individuals to ensure longevity of school nutrition program standard compliance, as well as continued development of the school nutrition program. This research promotes an understanding of the aspects that attracted current and future registered dietitians to the profession and potentially assists with dietitian recruitment.

Definition of Terms

Didactic program in dietetics: An educational program granting at least a bachelor’s degree and ensuring accredited, required dietetics coursework. After completing the didactic program requirements, a dietetic internship must be completed prior to passing
the national credentialing exam. The registered dietitian credential is earned upon completion of these requirements (Academy of Nutrition and Dietetics, 2013).

**Senior dietetic students:** Students participating in a four year bachelor degree dietetic program, with the student classification of senior, leading to a bachelor’s degree (Academy of Nutrition and Dietetics, 2013).

**Job responsibilities:** The functional areas that require knowledge, skills and abilities associated with specific competencies to complete tasks. Job responsibility examples in school nutrition leadership include food production management, sanitation, menu management and accountability (Nettles, Carr, & Asperin, 2010).

**Leadership:** The ability to guide and direct a group of people, utilizing available resources, toward a shared goal of excellence (Martin & Oakley, 2009).

**Leadership role:** Authority relationship that defines the leadership process and the dependency relationships (Smircich & Morgan, 1982).

**Motivational aspects:** Characteristics valued by individuals that influence decisions to work in certain environments. Examples of these aspects include Hertzberg’s hygiene factors such as job security, salary, work conditions and work appreciation (Kovach, 1987).

**Registered dietitian:** A food and nutrition expert meeting academic and professional requirements, including a bachelor’s degree and supervised practice completion, as well as successful completion of the national credentialing exam (Academy of Nutrition and Dietetics, 2013).
School nutrition directors/supervisors: An individual possessing appropriate qualifications who is responsible for the oversight of a school district’s school foodservice operation. School districts may have one or more district level school nutrition professionals depending upon their size (Nettles, Carr, & Asperin, 2010).

School nutrition leadership: Qualified individuals that work in roles within school nutrition programs to direct operational performance and achieve positive program outcomes (Oakley & Martin, 2009). For this study, individuals in school nutrition leadership will possess a bachelor’s degree and registered dietitian credentials. Individuals will be functioning as school managers, district coordinators, district program administrators or at the state department level in school nutrition program oversight. Examples of state department positions would include state directors, program specialists and area consultants.

School nutrition program: Public and private school meal and snack programs (prekindergarten through twelfth grade) provided to all students, with options to apply for income or category based eligibility for meal cost assistance from the USDA (ADA, 2010a).

Southeast USDA food distribution region: The southeast geographical region of the United States grouped by USDA for FNS program administration and food distribution which includes Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee (USDA, 2013).

USDA food distribution region: The United States is divided into geographical regions by the USDA. These regional states are grouped together for program administration...
purposes and the distribution of food and nutrition assistance to school children and
families (USDA, 2013).

Dissertation Organization

This dissertation uses the alternate format and consists of six chapters. The
literature review is presented in chapter two while chapter 3 provides the research
methodology. Chapter 4 is a journal article prepared for submission to *The Journal of
Child Nutrition and Management*. The chapter writing and reference format follows the
journal requirements. My involvement in every research phase includes: research plan,
data collection, data analysis and writing the manuscript. Dr. Arendt served as major
professor, contributing at each research stage including data analysis. Chapter five is
prepared as a journal article submission for the *Journal of the Academy of Nutrition and
Dietetics*. The chapter writing and reference format follows the journal requirements. My
involvement in each research phase includes: research plan, data collection, data analysis
and writing the manuscript. Dr. Arendt served as major professor, contributing at each
research phase and with data analysis. Statistical expertise and assistance with data
analysis was provided by Dr. Zheng. The final chapter provides the general conclusions.
References are provided at the end of each chapter. Appendices follow the final chapter.

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CHAPTER 2: REVIEW OF LITERATURE

The school nutrition program provides meal and snacks for students throughout the United States. The program has a strong history associated with RDs who were involved with the program’s initial development, and RDs continue to serve in leadership roles throughout the nation. Maintaining and recruiting qualified leadership is important to the program’s efficiency and further development, as the Healthy Hunger-Free Kids Act (2010) recommends national credentials for state and local program leadership members (USDA, 2014). RD’s possess skills that would allow them to continue to meet program leadership qualifications.

The first section of this review of literature provides the historical background and development of the school nutrition program. The second section defines the school nutrition program’s components and foundations. The third section presents the competencies and qualifications of registered dietitians, as well as qualifications for school nutrition leadership positions. The final section will highlight characteristics associated with leadership and career motivation.

Historical Background

Program Development

Understanding the foundation of the school nutrition program provides better insight of the program purpose and the association RDs have had in the development. The current school nutrition program was founded through a series of legislation. Martin and Oakley (2009) provided an extensive description of the program’s development, beginning with the charitable provision of school meals for underprivileged children.
The National School Lunch program developed in response to military service rejection of poorly nourished men enlisting for military service during World War I. This national security issue led to permanent funding being established for school meals through the passage of the School Nutrition Act of 1946, now called the Richard B. Russell National School Lunch Act (National School Lunch Act, 1946). Throughout the program’s evolution, the focus has remained on providing meals to meet the nutritional needs of school age children (Hinrichs, 2010).

Martin and Oakley (2009) present the need for establishing standards for administrative staff qualifications at the state, school system, and building levels. The American Dietetic Association (ADA), currently known as the Academy of Nutrition and Dietetics (AND), and the American Home Economics Association and the American School Foodservice Association (ASFSA), currently known as the School Nutrition Association (SNA), collectively recommended credentialing standards for state directors, system level supervisors, and managers (ADA, 2010a; ADA, 2003). However these recommendations have not been implemented except for the minimum qualifications for Women Infant Child (WIC) program nutritionists, as well as the short-term requirement of Master’s degrees for state directors.

School Nutrition Program Administration

A school nutrition practitioner is defined as an individual possessing a food and nutrition degree working in a school nutrition program; specific job titles include director, manager, supervisor and nutrition education specialist (ADA, 2010a). The financial challenges of operating a school nutrition program under current regulations have become considerable. The school nutrition program administration requires staff
supervision and compliance with local, state and federal regulations, while meeting the needs of a diverse student population with varied nutritional needs—including medical/nutritional requirements of students with disabilities and special needs. Maintaining food safety is another important responsibility of program administrators (ADA, 2010a).

The importance of well-trained leadership to direct the school nutrition program was an identified need from the program’s beginning (Martin & Oakley, 2009). The current Healthy Hunger Free Kids Act (HHFKA) of 2010 in Section 306 establishes educational, training and certification requirements for state agency and district directors (USDA, 2010). The HHFKA (2010) requires the Secretary of USDA mandate compliance deadlines for the food service managers and state directors associated with these requirements. The proposed credentialing rule has been released by USDA, establishing educational standards for district directors, managers and school nutrition staff effective July 1, 2015 (USDA, 2014).

**Founding Registered Dietitians**

As the school nutrition program developed, several registered dietitians became important pioneers in directing the meal program’s implementation (Martin & Oakley, 2009). Martin and Oakley highlight registered dietitians such as Emma Smedley, the Philadelphia school meal program’s first director responsible for initial program standard development with the publication, *The School Lunch: Its Organizations and Management in Philadelphia* (Smedley, 1920). Mary De Garmo Bryan, a World War I dietitian, observed the poor physical condition of the young men serving in the war resulting in her publishing a program reference training book, *The School Cafeteria* (Bryan, 1936).
Registered dietitian, Thelma Flanagan began her career in the late 1930’s working in the Work Progress Administration, and eventually served as the Florida Department of Education State Director for almost 30 years (Martin & Oakley, 2009).

In 1935, the Works Progress Administration was developed when President Franklin Delano Roosevelt wanted to provide work opportunities for women, and assisting with meal provisions in schools helped satisfy this mandate. The early supervisory staff of the Work Progress Administration, which included registered dietitians, was selected from individuals with special foodservice skills and knowledge (Gunderson, 1971). The movement eventually led to the passage of the School Nutrition Act of 1946.

These dietitians, as well as others, were important in developing the school nutrition program and the program’s professional association, SNA. As the program continued to expand beyond just providing meals for students, a greater focus on nutritional integrity developed. RDs and dietetic technicians supported policy making, management, education, and community roles associated with nutritional integrity. Supporting this initiative, the ADA (2010b) suggested current meal accommodations made for students with disabilities and food allergies/intolerances required the expertise of RDs to insure accuracy.

School Nutrition Program Management

Challenges of the school nutrition program. The child obesity epidemic has made school nutrition a current priority. In response, the prevention of child obesity and the provision of nutrition education to students has become a school nutrition program focus. Additional changes to the nutrition standards were implemented on July 1, 2012
and promoted the inclusion of whole grains, increased serving sizes of fruits and vegetables, elimination of trans fats, the reduction of sodium and more defined calories ranges for student grade groups (USDA, 2013b). These modifications have presented challenges with program costs and student acceptance.

O’Toole, Anderson, Miller, and Gutherie (2007) reported challenges associated with implementing healthier food preparation practice improvements in school kitchens including reducing total fat, saturated fat, sodium, and added sugar. Increasing consumption of fruits, vegetables, whole grains and nonfat or low-fat dairy products also presented a challenge in the school environment. These healthier meal standards require expertise to implement effectively to meet the needs of school children. School breakfast and lunch programs are not the only food options available to students at schools. Many schools provide vending or snack machine options to their students during the school day. O’Toole et al. (2007) examined the prevalence of vending or snack machines and stores in schools and reported that 32.7% of surveyed elementary schools, 71.3% of middle schools and 89.4% of high schools had one or more of these alternative food options. Further, the foods and beverages offered through these options typically did not meet meal program standards and were less nutritious than meal offerings. Current federal meal regulations only apply to food and beverages sold in a cafeteria; the items sold outside of the cafeteria are not required to meet these standards. Effective July 1, 2014, new USDA standards must be implemented for foods sold to students in the school environment during the school day (USDA, 2013c). As vending standards become comparable to the meal standards, directors could help the food industry develop foods
meeting school nutrition standards and responsibly sold in all school venues (ADA, 2010b).

The Center for Disease Control (CDC) 2012 School Health Policies and Practices Study demonstrated an improvement with 43.4% of school districts prohibited vended junk food availability, compared to 29.8% in 2006. In addition, 73.5% of surveyed school districts in 2012 maintained nutritional standards for food procurement outside of meal service compared with the previous 55.1% in 2006 (SHPPS, 2012). Once the USDA standards (USDA, 2013c) are implemented, continued improvements in this aspect of the school environment should expand.

**Wellness policy implementation.** Prior to the July 2012 nutritional standard changes, the Child Nutrition and WIC Reauthorization Act of 2004 mandated the implementation of local wellness policies by 2006 for local school districts participating in the national school meal programs (Child Nutrition and WIC Reauthorization Act of 2004). Development of wellness policies for establishing standards for the school health environment addressing aspects beyond the meal program was the purpose.

Longley and Sneed (2009) studied the wellness policy development process prior to 2004 compared to the wellness policy enactment after 2006. Of the 3924 school districts examined, 35% reported increases in wellness component development, 24.8% reported increases in nutrition curriculum integration, 23.8% reported increases with foodservice department providing nutrition education and finally 23.7% reported increases in professional standards for nutrition educators (Longley & Sneed, 2009).

Research studies have continued evaluating the effectiveness of the local wellness policies impact on school healthy environments. Turner and Chaloupka (2012) conducted
research comparing 2006-2007 U.S. elementary school environments, public \((n = 578)\) and private schools \((n = 259)\), with 2009-2010 U.S. elementary school environments, public \((n = 680)\) and private \((n = 313)\). Utilizing a sixteen item food environment component scale, public schools demonstrated an average score of 53.5 on a scale of 0 to 100 for 2009-2010, compared to an average score of 50.1 in 2006-2007. Private schools averaged scores of 42.2 in 2009-2010 compared to previous scores of 37.2 in 2006-2007. Turner and Chaloupka concluded that there had been minimal improvements in the school food environment resulting from the federal wellness policy implementation. Wenz, Thorius, Wendland, and Litchfield (2009) also observed large districts with weak wellness policies provided more unhealthy vending food options to their students. The school district’s commitment level to promoting a healthier school environment may influence the wellness policy implementation level.

**USDA competitive food regulations.** Continued concern for healthy school environments and the inconsistent local wellness policies created the need for further legislative guidance. Research conducted by Walls, Litchfield, Carriquiry, McDonnell, and Woodward-Lopez (2012) concluded that the wellness policy strength did not influence the policy implementation level, when they researched local wellness policies in California, Iowa and Pennsylvania. The necessity for more policy consistency led to USDA developing competitive food regulations as a result of the HHFKA (2010). The mandate of USDA competitive food rules by the HHFKA establishes minimum standards to improve the offerings of all foods provided outside of the national meal program. These USDA competitive food regulations should help establish consistent national
standards which were inconsistently set and enforced by the local wellness policies (USDA, 2013c).

**Benefits of the school nutrition program.** Students’ nutritional status, health and academic performance improved when nutritional services were integrated into school health programs. School nutrition services targeting kindergarten through 12th grade students should include nutrition education and promotion, campus food and nutrition programs, community partnerships and nutrition-health related services (ADA, 2010b). Nutrition education in the classroom, combined with availability of school-provided healthy food choices and support from outside the school environment, has positively impacted children’s eating habits. The CDC (2013) recommends eight components of coordinated school health which include physical and health education, counseling, nutrition and health services, psychological and social services, staff health promotion, safe and healthy school environment, and family/community involvement. The Institute of Medicine (2008) recommended that school authorities educate students about healthful diets and incorporate nutrition education into the school environment.

**School Nutrition Employee Credentials**

**Current credentials.** National professional standards founded on research were recommended by the School Nutrition Association (2009) for state agency directors, school nutrition directors, school cafeteria managers and school nutrition employees. These standards, in conjunction with the development of operating standards, would help strengthen school nutrition programs. The proposed credentials make recommendations for specific educational requirements for state agency directors, school nutrition directors, as well as managers and employees. These credentials take into consideration the district
student enrollment and provide education standards, along with continuing education
requirements for all of these personnel (USDA, 2014).

O’Toole et al. (2007) assessed program policy and responsibilities for nutrition
services supervisory staff. Only 37.3% of the states had a policy directing districts to
provide a supervisor or coordinator of the nutrition service program. However, 94.9% of
all districts had local responsibility for planning menus and 83.5% had procurement
contracts addressing food safety. Of the surveyed districts, 74.1% reported having
HACCP plans and 55.1% provided nutrition standards for a la carte foods; 83.4% of the
districts had responsibility for cooking foods at some of their schools. These study results
demonstrated meal and menu accountability improvement within the nutrition programs.
Unfortunately, 24.4% of the surveyed districts required no minimum educational
qualification for program directors and 56.6% required only a minimum high school
diploma or GED for directors to meet this increased level of accountability.

**Competencies and skills for school nutrition directors.** Nettles, Carr, and
Asperin (2009) developed the *Competencies, Knowledge, and Skills for District-Level
School Nutrition Professionals in the 21st Century* for the National Food Service
Management Institute. Nettles et al. (2009) provide ten functional categories for the job
responsibilities for district level school nutrition professionals. The ten categories
included management of facilities and equipment, financial management, operational
management including food production, food safety/security and sanitation, human
resource management, procurement and inventory management, management of menu
and nutrition, marketing and communication, program accountability and management,
as well as the technology and information system responsibilities (Nettles et al., 2009).
Further development of the specific responsibilities associated with each of these areas is defined in their publication.

Leadership responsibilities would include procurement, menu and nutrition management, food safety/security and sanitation, financial management, human resource management, technology management, marketing and facility management as identified by Nettles et al. (2009). These responsibilities would relate to the academic preparation offered in Accreditation Council for Education in Nutrition and Dietetics (ACEND) accredited didactic programs in dietetics (AND, 2013b). The ACEND identifies specific competencies that dietetic students must demonstrate for areas including procurement, production, recipe and menu development, human resource management, food safety management, and financial management (ACEND, 2012). Dietetic college coursework in an ACEND didactic program would prepare students to be proficient in these competencies. Iowa State University provides an ACEND didactic program. For an example, Iowa State University’s dietetic curriculum currently requires 40-41 credits of food science and human nutrition course work, and 11 hours of management coursework focused on quantity food production and foodservice systems management (Iowa State University, 2013). This academic preparation would potentially provide a beneficial knowledge base for working in a school nutrition leadership position.

School Nutrition Program Nutritional Requirements

Thomson, Tussing-Humphreys, Martin, LeBlanc, and Onufrak (2012) evaluated public and private schools participating in the federally funded school meal programs and USDA’s Team Nutrition to determine the characteristics of schools offering healthy versus unhealthy offerings. The researchers administered an 88 question survey and
analyzed responses to determine whether the offered items represented unhealthy or healthy offerings. Of the surveyed schools, 51.9% participated in Team Nutrition, with over 75% of the schools requiring at least a high school diploma for newly hired foodservice managers. The surveyed schools with the healthiest meal preparations had a college educated manager (Thomson et al., 2012).

In the Southeast USDA region, Thornton (2007) collected survey data from 304 school foodservice administrators whose districts were HUSSC recognized schools. Findings demonstrated there were more advanced mandated educational requirements for district foodservice directors in five southeastern states, and an 8% higher meal participation rate compared to the other USDA regions. Therefore, it appears that mandated educational requirements may have impact on overall program participation. Increasing the professional credentials of the individuals managing school nutrition programs will be challenging, but the Child Nutrition Reauthorization Act of 2010 required that the Secretary of Agriculture establish certification standards. These proposed credentialing standards have been released for review and comment, and the planned implementation date is July 1, 2105 (USDA, 2014).

**Program Director Competencies**

**Competency Requirements**

School nutrition directors in the United States do not currently have consistent competency requirements for their positions, as is evident when comparing states. Rushing, Nettles, and Johnson (2009) surveyed 931 school nutrition directors (38% response rate) assessing the qualities and characteristics associated with successful directors. The study was conducted in all the USDA regions. The demographic data
collected from 355 survey respondents demonstrated 74% had completed a bachelor’s degree or higher and 31% had received a master’s degree or higher.

The primary study area percentages were nutrition/dietetics (22.6%), food and nutrition (19.5%), foodservice management (17.7%), business (17.7%), other (13.7%) and child nutrition management (5.3%). Only 17.6% of the respondents identified themselves as registered dietitians. The researchers did not investigate the discrepancy between the percentages in the study areas versus the RD percentages. Based on this 2009 study, the majority of school nutrition directors had at least a bachelor degree and 42.1% of those degrees were in dietetics or food and nutrition (Rushing et al., 2009).

An earlier study by O’Toole et al. (2007) concluded that only 4.4% of school districts did not require school nutrition directors to have some minimum level of education, 56.6% required a minimum GED or high-school diploma; 5% required an associate’s degree in a nutrition related field, but 10.6% required an undergraduate degree in nutrition or a related field. The research results showed only 3.5% of school districts required a graduate degree in nutrition or a related field. However, 15.8% of the states required newly hired directors to have an endorsement, certification or license by the state. Only 18.6% of the surveyed districts required SNA certification; 11.6% required a School Nutrition Specialist credential, and 4.2% required a registered dietitian credential (O’Toole, 2007).

**Credentials for USDA Region Directors**

From the 50 U.S. states, representatives from only 38 states responded to a USDA survey assessing professional standards for supervisory school nutrition staff at the state, district and school levels, as well as other staff members. There were 22 states with
professional standards for school nutrition staff, and four of these states were in the Southeastern USDA region (USDA, 2012). In total, there are seven FNS USDA regions which include the Northeast, Northwest, Mountain Plains, Western, Mid Atlantic, Southwest and Southeast regions. The Southeast USDA region includes Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee (USDA, 2013a).

Georgia maintains the highest requirement for district school nutrition directors in the Southeastern USDA region. Georgia requires a director certificate, equating to an educational requirement of a master’s degree, from an approved accredited institution in an approved school nutrition related field (Georgia Professional Standards Commission, 2012). Mississippi requires a certificate issued by the Mississippi Department of Education, Office of Child Nutrition. Mississippi’s Food Service Administrator I level requires a high-school diploma and six college level hours, the Administrator II level requires a bachelor degree from an accredited college, and the Administrator III requires a master’s degree from an accredited college or university (Mississippi Child Nutrition Programs Policy and Procedure Manual, 2000). Kentucky follows the credential requirement of the School Nutrition Association’s Certification Level 2 for the school food service director or person responsible for menu planning (Kentucky Department of Education, 2005). The SNA Certification Level 2 requires a high school diploma or equivalent and an additional 90 hours SNA continuing education coursework (SNA, 2013). Alabama requires the director to hold at least a bachelor’s degree and meet the Child Nutrition Program director certification (Alabama State Department of Education, 1994). North Carolina requires that the central office maintain an appropriate trained
staffing level to ensure the child nutrition program is effectively administered (North Carolina Department of Public Instruction, 2012-2013). South Carolina and Tennessee do not have specific requirements for district school nutrition directors (USDA, 2012).

School nutrition leadership will be defined as the qualified individuals that work in school nutrition program roles in order to direct the operational performance and achieve positive program outcomes (Martin & Oakley, 2009). For this study, school nutrition leadership possessed a bachelor’s degree and RD credentials, function as district administrators, district coordinators or supervisors, school managers or work in state level program oversight. Nutrition coordinators supervise or coordinate school nutrition services, either independently or under the district school nutrition director’s supervision, and were part of school nutrition program leadership. When O’Toole et al. examined nutrition coordinator positions, 88.1% of the surveyed respondents had a district level coordinator. For the surveyed districts, 40.6% of the coordinator level survey participants had an undergraduate degree, and only 23.2% of those undergraduate degrees were in nutrition or dietetics.

Specific nutritional support has been routinely provided by school nutrition programs. Menu planning for students with chronic diseases was provided by 73.5% of the surveyed districts, while 73.5% of the districts assisted with planning menus considering student food allergies (O’Toole et al., 2007). Raising professional qualifications for individuals managing school nutrition programs was viewed as a significant challenge by the respondents, despite multiple nutrition related responsibilities.
Credentialed Versus Non-credentialed Directors

Limited research was found comparing the effectiveness of credentialed versus non-credentialed district level directors. Mincher, Symons, and Thompson (2012) conducted research in all Ohio School Foodservice District (SFSD) public schools (n = 364), comparing credentialed versus non-credentialed school foodservice directors and the impact foodservice directors’ credentials have upon food-related policies. A survey instrument was developed and pilot tested with a convenience sample of 20 SFSDs in Ohio and Pennsylvania to collect data on school nutrition policies and practices.

Respondent credentials were selected based on four educational achievement categories: associates degree in nutrition or management, a bachelor’s degree, a master’s degree, or no degree. The survey utilized seven policy statements and thirteen practice statements on a four point scale with “0” indicating absence of policy, “1” or “2” indicating between/partially implemented and “3” indicating full implementation. The composite scores ranged from 0 to 21 for comprehensive policy implementation and 0-39 for comprehensive practice implementation. Survey results showed a significant difference in policy (mean scores = 14.51 vs. 13.39; range = 0 to 21; p = .009) and practice scores (mean scores 33.86 vs. 32.50; range = 0 to 39; p = 0.0) for credentialed versus non-credentialed directors.

Section 306 of the Child Nutrition Act of 2010 requires credentialing standards development. USDA has released the proposed rule with the program credentialing requirements with the option for input and the planned implementation effective July 1, 2015 (USDA, 2014). The proposed credentialing requirement does allow a bachelor’s degree with dietetics major as an acceptable education option to meet the requirement.
This supports research recommendations that nutritional care training focused on school nutrition for registered dietitians and dietetic registered technicians (DTRs) would be an appropriate credential for foodservice directors in schools (Mincher et al., 2012).

**Registered Dietitian Competencies**

Gould and Canter (2008) expressed the need to support advanced dietetic management skills for registered dietitians. Only 42% of practicing RDs participating \((N = 7469)\) in the Compensation and Benefits Survey of the Dietetics Profession 2013 reported having supervisory responsibilities, while only 25% managed a budget. Twelve percent of all RDs were employed in food and nutrition management, according to the Commission on Dietetic Registration, while 46% worked in inpatient, ambulatory, or long-term clinical settings (Rogers, 2014). Most of the RD survey group held a bachelors degree, with 47% holding a master’s and 4% a doctoral degree. Twenty two percent of respondents were directors or managers, and 42% directly or indirectly supervised people. More authority and financial responsibilities were associated with higher RD salary ranges (Rogers, 2014). The 2013 results show little change for management dietitians from the Compensation and Benefits Survey of the Dietetics Profession 2007 report (Rogers, 2008).

In order for dietitians to keep pace with workforce changes, it was recommended that RDs develop leadership and management skills. Management science should be as important for dietitians, as clinical science is for dietetic professionals wanting to meet the challenges of being a change agent in the food and nutrition arena. Gould and Canter (2008) suggested RDs develop soft-skills associated with leadership and management by involving themselves in areas within the community, unrelated to work, to gain practice in making presentations, and leading committees. Networking with leaders and managers
outside the dietetic profession was considered another important step toward developing professional leadership skills.

**Future Supply and Demand for Dietetic Workforce**

Hooker, Williams, Papneja, Sen, and Hogan (2012) conducted a workforce study to determine RDs’ future needs. In 2010, there were 85,884 active/practicing RD/DTRs. Considering the expected number of RDs and DTRs retiring compared with the demand for these professionals, it was estimated an additional 18,000 full-time workers would be needed. Clinical dietetics was expected to have the largest percentage of growth at 42%, with long-term care practice areas showing 36% growth; food and nutrition management projected 35% growth from 2010-2020, the greatest non-clinical area of expansion for dietitians (Hooker, et al., 2012). Laramee and Tate (2012) conducted a second task force study for dietetics from 2009-2011; the initial study was conducted more than 30 years earlier. In order for the Academy of Nutrition and Dietetics to support current dietetic workforce needs, the study results must benefit the future profession development. Three main goals were established: (1) increase the number of people entering the profession, (2) learn to work with partners, even competitors, and (3) support advancement of skills and competencies for dietitians to meet workplace and societal expectations.

Hooker et al. (2012) estimated that an additional growth of 40% was needed in the current number of registered dietitians during 2010-2020, while the RD supply would suggest an increased growth rate of only 7%. The expected increase in demand for credentialed dietetic professionals was associated with a growing aging population. However, if the projected shortage of dietetic professionals occurs, the authors suggested that other health professionals might be asked to provide necessary dietetic services.
Rhea and Bettles (2012) created potential supply and demand scenarios to assist with future professional development and support for the Dietetics Workforce Demand Task Force. Health concerns for the aging population will require additional health care professionals to meet the demand levels. Keeping this aging generation healthy through better nutrition, safety and medical care has resulted in it becoming the fastest growing population segment. In addition to caring for the aging population, dietitians will also be instrumental in managing the increased needs in NSLPs, where one third of the energy requirements for a child during the school day is provided through the program for 19 million participating children.

Lordly (2013) conducted research in Canada with 344 dietetic students evaluating their concerns for a future career in dietetics. For the students participating in the study, 43% expressed concern about internship and employment opportunities, as well appropriateness of salary ranges relative to educational expertise. Educational programs which incorporate more professional career opportunities may be beneficial to help connect dietetic students to dietitians, providing better career information and preventing a lack of understanding associated with career expectations (Lordly, 2013).

Lordly and Dube (2012) administered an in class and online survey to 397 first and fourth year Canadian dietetic students examining their potential career choices and values. The students selecting dietetics were primarily influenced by family members (54%) and chose the dietetic profession because of interest in nutrition (91%) and health (90%). Helping others (82%) was another motivating factor for the students. Career choice was influenced by personal satisfaction, job flexibility and job authority, with the
opportunity to work with others receiving the highest mean scores (Lordly & Dube, 2012).

Core knowledge and skills are necessary to enter the dietetics profession. “RDs with the business acumen to develop and improve programs and services and lead teams of people, are the ones who ascend the career ladder,” (Rhea & Beetles, 2012, p. S16). Focusing on a specialty in dietetics does not translate to financial success. The highest paid dietitians were executives and directors managing large budgets and numerous employees (Rogers, 2008). Dietitians will need to maintain a general, multidisciplinary approach in the future to meet the future job market demands (Rhea & Bettles, 2012).

**Salaries for Registered Dietitians**

Rogers (2014) conducted a comprehensive study of pay levels for registered dietitians and dietetic technicians working in the dietetic field. A total of 7469 survey responses were evaluated from participants in dietetics related positions for these results. Results demonstrated that 11% of surveyed RDs managed budgets of $500,000 or more. The median full-time salary for a dietitian was $60,000 per year. The low-end RD hourly wage was $20.43 per hour; the top 10% make $43.27 per hour. Having a master’s degree resulted in an increase of $1.89 per hour and a doctorate degree maintained a median wage of $36.06 per hour. Specialist certification also increased the median wage by $1.92 per hour. ADA members earned $.35 per hour more than non-members. Gaining supervision responsibilities increased wage levels, especially if the responsibility level was for 100 or more employees. A 50% higher wage was seen within the survey group for RDs with this level of supervisory duties. RDs geographical location also contributed to the wage diversity. Positions that have the highest wage included executive-level
professional, director of food and nutrition services, director of clinical nutrition, sales representative, director of nutrition, and school foodservice director. Overall educational level and supervisory responsibilities correlated with higher wage levels depending upon the level of education and the level of supervisory responsibility (Rogers, 2014).

Hooker et al. (2012) stated that average salaries in 2010 were $47,000 for clinical inpatient nutritionists and $69,000 for food and nutrition management practitioners. Dietitians with supervisory or leadership responsibilities were compensated at a higher level than those RDs with clinical responsibilities, similar to the results from the 2013 Compensation and Benefits Survey (Rogers, 2014).

**Professional Trends and Strategies**

Future professional changes are necessary in the dietetics field to respond to the aging population and aging profession, the increased educational needs, interdisciplinarity, teaming, and population initiatives. Four possible scenarios were presented indicating the levels of preparation dietetic professionals need to meet future demands (Laramee & Tate, 2012); dietetics practitioners must reinvent themselves to meet change. Adaptability and risk taking are two necessary traits for future dietitians. The expectation of perfection must be adjusted to meet a faster paced workplace, allowing for quicker decision making and reassessment. Communication skills are important, as is lifelong learning with the development of skills like management and administration. Overall professional skills appealing to a broader environment, like healthcare or foodservice, will be the future hiring focus.

Jarrant and Mahaffe (2002) presented a summary from the 2002 environmental scan conducted to understand emerging issues and trends in preparation for future
strategic plans. Even with this early research, three issues were identified: increased 
public interest in diet and nutrition, future population growth requiring dietetic services, 
and increased diverse needs of underserved ethnic populations. Nutrition impacts chronic 
disease, healthcare and an aging society. The nation was being shaped by technology, 
social, political and environmental factors influencing our food system. Advances with 
science and technology have put pressure on the dietetic profession. Dietary messages 
must be relevant to more diverse populations. The obesity crisis was seen as a situation 
that dietitians could impact. Examples of challenges related to sedentary lifestyles and 
more frequent eating on the go were factors the association had to address. 

Nutrition and food safety, along with obesity and diabetes continued to be areas of 
public concern (Jarrant & Mahaffe, 2002). Sneed and Strohbehn (2008) studied trends 
specifically associated with food safety and evaluated how these trends could impact 
dietetics. The main trends were foodservice workforce generational differences and 
diversity, increased technology dependence, food defense, food procurement changes and 
the increased level of consumer food safety knowledge. RDs could play an important role 
in improving food safety in foodservice operations, especially if their didactic education 
provides opportunities to expand food safety and security knowledge. 

In this earlier research, Jarrent and Mahaffe (2002) also provided the 
membership’s generational breakdowns as relevant to the ADA. Meeting the needs of the 
association members was discussed utilizing Maslow’s hierarchy. A decreased supply of 
dietitians during the 1990s and early 2000s, coupled with options for employment in non-
traditional areas, challenged the profession. The authors contended that leadership 
development must be the association’s primary focus. Because membership roles have
been declining, promoting opportunities from within the association that provide for members’ needs will move the dietetics profession forward to meet future changes. Fortunately beginning in 2005, AND has experienced eight years of growth to reach 75,067 members for 2012-2013 (AND, 2013).

The AND (2013) also provided a summary of current RD practice scopes. This summary identified that the majority of RDs work in a health care setting, but school nutrition was listed as an area where RDs provide leadership with the support of USDA and other organizations (AND, 2013). School nutrition was also provided as an area where national credentialing could be provided through the SNA for the School Nutrition Specialist (SNS).

**Registered Dietitian Competency and Expectations**

Gregoire, Sames, Dowling, and Lafferty (2005) randomly sampled 500 hospital foodservice directors \((n = 193, 48\% \text{ were RDs})\) and their 500 hospital executives \((n = 153, 5\% \text{ were RDs})\) to define what significant competencies RDs should have, and if RDs were perceived competent in these areas. Forty eight percent of the foodservice directors were RDs, however only 5% of the surveyed executives were RDs. The executives and the directors surveyed both rated “competency of acting as an effective team leader” the most significant competency. The greatest contrast was demonstrated for the competency “analyzes financial information for decision making” which was rated more important for directors than for executives.

Only half of the foodservice operations in this study were under the direction of an RD, which contradicts the position of the American Dietetic Association, that “effective management of health care food and nutrition services is best accomplished by
dietetic professionals” (Gregoire et al., 2005). The surveyed hospital executives who had worked with RDs ranked competency levels for RDs higher. Management skills, such as leadership and operation management, were considered the most important for a hospital director, however, these are not competencies RDs are perceived as possessing. Those developing RD continuing and graduate education may consider offering coursework focused on competency development in leadership related areas and better prepare them for specific operational management responsibilities including human resource, financial and menu management.

When considering leadership responsibilities, it would be beneficial to consider leadership competency models. These models provide best practice guidance to improve the leader effectiveness. Hollenbreck, McCall, and Silzer (2006) provided problems with current leadership competency models extracted from a series of letters written among the authors. Individuals possessing more than one leadership characteristic typically are effective leaders. Human resource system development founded on competencies focused on valuable leadership behaviors and lead to individual performance evaluation matched to organizational goals. The researchers agree that competency models have been effective in the selection and training of lower-level individuals. However, the integration of an effective leadership model should be applicable to multiple positions and situations, which is difficult with higher complex-level positions. The inclusion of leadership situations and outcomes in the competency model, as well as identifying the most important leadership roles in the model for a specific position, would be beneficial for successful outcomes.
Job Responsibilities of Registered Dietitians

Lee and Yoon (2009) investigated the difference between performance levels of dietitians and non-dietitians in management of senior centers’ foodservice operations. Fifty-five dietitians and 35 non-dietitians completed a survey; evaluating 21 foodservice management duties in seven categories. The survey utilized a four point Likert-type scale, with “1” designating the least importance and “4” designating the most important. Survey results indicated financial management \((M = 3.72)\) and facility management \((M = 3.56)\) demonstrated the most important performance areas. Categories of financial management, production and distribution management, as well as menu and nutrition management were important for RDs. The researchers concluded that RDs were better able to discern what was significant in effectively performing foodservice management responsibilities than their non-dietetic counterparts.

Mathieu (2009) offered suggestions for the best method to transition into supervisory job responsibilities. Management provides an opportunity to utilize “outgoing” skills and investigative methods to improve processes. The ability to work with a variety of people and make quick decisions, while maintaining a minimal confidence level, are important attributes. Often people do not recognize that leadership experience includes various tasks like chairing a committee or leading a team, even if the experience is outside the professional environment. An example of leadership is the ability to effectively manage a group of people while producing a positive outcome. Developing a skill-based resume was suggested to promote leadership abilities. Appropriate preparation and personal presentation are critical to making job interviews successful. Becoming involved with professional organizations, serving on committees,
and making contacts to develop a network can lead to finding a mentor to guide professional development in the area of leadership. Opportunities and professional development recommended by Mathieu (2009) would be beneficial to RDs seeking to improve professional leadership skills.

Puckett et al. (2009) presented the 2008 Standards of Professional Performance (SOPP) for registered dietitians practicing in the management area: with “general” and “advanced” constituting two professional performance levels. These SOPPs detail competency levels of professionalism and administration (human resource management, education, ethics, collaboration, research and resource use) but not a management specialty practice level. The standards recognized RDs ability to supervise an operation or multiple departments, units or practice, as well as the advanced practices required: knowledge and skills. The competencies for management focused RDs are diverse and include: environmental protection rules, the political environment, marketing and customer satisfaction, continuous quality improvement, work redesign and productivity, innovative cost-containing measures, food consumption patterns, food and equipment technology, human resources trends, food and water safety, disaster and emergency planning, project and process management, and cultural diversity in the workplace (Puckett et al., 2009).

Puckett et al. (2009) applied the Dreyfus model to identify proficiency levels from novice to expert, and assist with understanding SOPP practice levels. Three levels of the Dreyfus model were translated into novice, proficient and expert when related to RD’s management development. These standards were a good resource for RDs evaluating their proficiency levels and understanding how to develop management skills.
Registered Dietitians’ Job Satisfaction

Little was known about factors outside of pay impacting job satisfaction, or dissatisfaction of RDs having management responsibilities. Therefore, Sauer, Canter, and Shanklin (2010) conducted a survey to look at management level RDs’ job satisfaction related to financial or personnel responsibilities. Members of three dietetic practice groups were selected for participation. These groups included: Management of Food and Nutrition Systems, Clinical Nutrition Management and the School Nutrition Services (total membership of 3783). Job satisfaction, intent to leave and demographic data were the three survey areas. A total of 1200 responses were gathered (31.7% response rate), but only 851 RD responses were usable. Dietitians expressed satisfaction with job aspects except for operating conditions. The top three satisfaction factors included the nature of the job, supervision and coworkers.

Operating conditions were defined as the satisfaction and dissatisfaction with policies and procedures. Management dietitians were the highest paid in the profession. The overall job satisfaction levels were varied among management dietitians with different titles. The job titles provided by the survey participants were grouped into seven categories; district managers, general managers, director, assistant director, manager, supervisor and clinical manager. The mean range was 36 to 216 for the overall satisfaction response scores. District mangers \( (n = 26) \) had the highest overall satisfaction level with the mean score 167.1 \( \pm 19.7 \). Directors \( (n = 287) \) were the second highest with a mean score of 158.9 \( \pm 7.5 \). Clinical managers \( (n = 318) \) demonstrated the lowest overall satisfaction level with the mean 150.1 \( \pm 24.1 \). The intent to leave was negatively associated with job satisfaction. “Negative perceptions about the services and expertise
provided by RDs, particularly those in key departmental leadership roles, are very
threatening to the entire dietetics profession” (Sauer et al., 2010, p. 1440). When job
factors are better understood, educators prepare graduates to deal with the professional
realities and challenges.

**Leadership**

Leadership is defined by Martin and Oakley (2009) as the ability to direct and
guide a group of people toward a specific goal while utilizing available resources. Arendt
and Gregoire (2005) administered a leadership survey designed to evaluate the leadership
actions and perceptions of undergraduate dietetic students at eight universities. The
survey consisted of three sections: the first section focused on student’s leadership
behaviors, the second assessed student’s leadership self-perceptions and the final section
collected demographic data, including job experience. Student leadership perceptions
were high at home (76%) and at work (69%), however the classroom leadership (56%)
was not as high. The researchers recommended that providing classroom leadership
opportunities may benefit students and result in further leadership skill development.

**Leadership Dimensions**

Arendt (2010) provided a qualitative study of seven school foodservice directors,
investigating common leadership dimensions. Observations of the seven financially
successful female directors were made at the food directors’ respective workplaces. Six
leadership dimensions were consistently observed within this group: serving, mentoring,
humanizing, innovating, leveraging and challenging. Serving was categorized as
providing for employee needs. Mentoring was viewed as instructing; humanizing was
defined as empathy, while innovating was classified as “new approaches leaders use in
situations.” “Managing resources for operational improvement” was classified as leveraging. Questioning employee perceptions and job responsibilities, as well as organizational attitudes was inclusive of the challenging dimension. The study results provide a foundation for future qualitative research, as well as the development of instructional materials focused on leadership, allowing students to develop these dimensions. School nutrition directors’ success could be enhanced by applying these six leadership dimensions.

**Leadership Development**

Cummings et al. (2010) reviewed 53 quantitative multidisciplinary research articles on leadership styles in the nursing profession. Leadership styles were associated with job satisfaction; styles focused on tasks (e.g. dissonant, instrumental and management by exception) produced a decreased job satisfaction level, compared to leadership styles focused on people and relationships (e.g. transformational, resonant, supportive, and consideration) which resulted in improved job satisfaction. Overall, 22 studies demonstrated that people with focused leadership were more productive. The authors concluded that because leadership can be taught, the relationship style of leadership should be developed in order to promote better outcomes in the healthcare industry, especially with nurses.

Gregoire and Arendt (2004) provided a review of leadership research to assist with future research in dietitians’ leadership. Unfortunately the limited published dietetic leadership research has concentrated on particular leadership characteristics and traits. The authors also summarized leadership development instruments, as well as specific research studies focused specifically on dietetics. Gregoire and Arendt recommended
additional research and leadership development strategies for the advancement of dietitians as effective leaders.

**Generational School Nutrition Workforce**

The current workforce in school nutrition leadership has limited generational diversity. For example, the majority (91.4%) of surveyed school nutrition directors in the Southeast USDA region reported that they were in the 51-65 year old age range (Thornton, 2007). Rushing, Nettles, and Johnson (2009) determined that 29.2% of the school nutrition directors surveyed nationally would be retiring within five years. Rushing et al. (2009) also discovered that 76.5% of their survey respondents had worked in school nutrition for eleven years or more. Future school nutrition leadership retirements could result in a significant generational shift within the current school nutrition workforce.

**Generational Workforce**

Chen and Choi (2008) suggested that three main generational groups comprise the majority of the hospitality workforce. The baby boomers are defined as being born between 1943 and 1960, and Generation X (Gen X) was born between 1961 and 1980. The third generational group, Millennials or Generation Y (Gen Y) was born between 1981 and 2000 (Gursoy, Maier, & Chi, 2008; Solnet & Hood, 2008). (Other sources defined these generational groups with slightly different ranges for the group years.) Consistently though, the generational group members possess shared life experiences that determine their work values, their attitudes towards authority and their life expectations (Gursoy, Maier, & Chi, 2008). Blending several generations within a leadership workforce could present multiple challenges for school nutrition programs.
Generational Work Expectations

In 2007, Thornton (2007) found the majority of the surveyed Southeast USDA region school nutrition directors were in the baby boomer generational group (Gursoy et al., 2008). The other two generations represented within the school nutrition leaders would be Gen X and Gen Y (Chen & Choi, 2007). These generations provide diversity with their varied leadership style and work values. Baby boomers management style includes a more bureaucratic or top down approach (Gursoy et al., 2008; Chen & Choi, 2007). Also, baby boomers view their work as meaningful and fulfilling. As a result of their increased satisfaction level, baby boomers are more likely to be dedicated to their work (Park & Gursoy, 2012).

The Gen Y work group enjoys challenging work, with expectations for quick advancement (Chen & Choi, 2007). When Gen Yers feel less significant or challenged in their work, they have demonstrated a greater intention to leave their job compared to the older generations (Park & Gursoy, 2012). The Gen Xers and Yers place value on meaningful work, but they are not as likely as baby boomers to invest additional personal time and energy into their jobs. Gen Xers and Yers also demonstrated greater extrinsic values associated with leisure time (Twenge, 2010; Park & Gursoy, 2012). Extrinsic work values are associated with work outcomes, where intrinsic values are related to the actual work process. Gen Y places the highest value on leisure time, with less importance on the extrinsic values which the baby boomers work hard to achieve (Twenge, 2010). Technology continues to play a greater role in present work environments and Gen Y utilizes technology the most effectively of the three generations (Chen & Choi, 2008).
As the current school nutrition leadership transitions to the Gen Y and Gen X workforce, it will be important for these generations to see school nutrition as an occupational option. Motivating the generational groups replacing the baby boomers will require creative human resource management, especially when their expectations include factors such as constant feedback, immediate impact and rapid promotion (Park & Gursoy, 2012; Solnet & Hood, 2008).

Rushing et al. (2009) determined that 22.4% of the surveyed school nutrition directors had been employed in their current position in school nutrition for greater than 15 years. There are limited promotion opportunities for school nutrition directors within the school district environment, future promotion opportunities may exist with transitioning between school districts. In spite of promotion limitations, the overall school nutrition program management could provide the desired challenging work environment that Chen and Choi (2007) suggested Gen Y members desire. The varied job responsibilities including human resource management, procurement, financial management, nutrition management and wellness initiatives should appeal to Gen Y future school nutrition leaders (Nettles et al., 2009; Solnet & Hood, 2008).

Motivation

Various theories have been presented in research studies to investigate what influences or motivates people to perform specific tasks or jobs. The purpose of these studies typically seeks to determine where the influence impacts the study group. Two primary motivational theories have been highlighted to better understand the potential association or impact upon worker’s job satisfaction. Herzberg’s two factor theory examines the
intrinsic and extrinsic factors; Maslow’s hierarchy applies the five levels of motivational needs (Kovach, 1987).

**Hertzberg’s Two Factor Theory**

Harvard Business Review (1987) republished a 1968 article by Herzberg in which he discussed his theory of hygiene factors versus motivator factors and employee job satisfaction. Herzberg suggested that hygiene factors produce job dissatisfaction and were associated with animal nature appeal, while the motivational factors contribute to job satisfaction and are a result of unique human need characteristics. Herzberg provided a concluding commentary about job enrichment as a constant management function. If job enrichment efforts were an organizational priority, Herzberg suggested, human satisfaction and economic return would be significant. Extrinsic motivators produced movement when the motivation resulted in intrinsic rewards that produced more interesting and challenging job duties. Job enrichment was critical to designing tasks that motivate workers.

Siemens (2005) reviewed Herzberg’s motivator-hygiene theory and the book, *Work and the Nature of Man*, as well as the theory’s current relevance. *Work and the Nature of Man* was the third book in a trilogy written by Herzberg to explain motivation. Two hundred engineers and accountants from various companies in Pittsburgh, Pennsylvania provided examples of work situations where they felt very good and very bad. The motivator-hygiene theory was developed from this study, where motivation was defined by two different scales: job satisfaction and job dissatisfaction. Motivators were defined as improving job satisfaction, and hygiene factors were defined as diminishing job dissatisfaction. When motivators were absent, job satisfaction decreased. Examples of
hygiene factors included company policy, supervision, salary and working conditions. Hygiene factors must be reinforced to reduce the extent of job dissatisfaction.

Herzberg used biblical Adam as an example for man’s animal side and Abraham as God’s chosen one. Adam had basic needs, while Abraham wanted to use his talents. Herzberg suggested that both sides of man in the workplace must be satisfied. Theory and book criticisms focused on limitations of the study’s population and methodology. Ironically the hygiene factors proved to be more important in the organizational hierarchy’s lower levels, particularly with blue-collar workers. Despite criticism and poor research methods, the foundation of Herzberg’s theory has deserved consideration when developing employee motivation.

Motivational aspects may influence career choice and impact the selection of leadership roles within a career choice, as well as job satisfaction. Bassett-Jones and Lloyd (2005) conducted a survey to determine “What motivates employees to contribute ideas?” Five thousand surveys were sent out to 32 large organizations representing seven employment sectors in the United Kingdom, with 3209 complete surveys received. The main investigation evaluated whether Herzberg’s two factor theory was still valid when applied to current organizational achievement, specifically as it related to internal and external stimuli.

Herzberg defined movement as action that comes from humankind’s animal nature, where motivation is much like a “self charging” battery. However, motivation associated with the two-factor model in the contemporary context was not supported by this study. The line manger’s perception of poor job performance had a negative impact on idea contributions. Managerial recognition has become a hygiene factor in the
contemporary employment setting, but was seen to be less influential than when the Herzberg study was conducted. Employee management perceptions were influenced by relationships with managers. The researchers concluded that enabling employees to effectively work together in an organization, and reinforcing this focus with management promoting good practice, should benefit an organization.

Bipp (2010) evaluated the differences between personality traits and preference for job characteristics with one sample of graduating German students majoring in business administration, engineering or computer science and another of full-time employees enrolled in a German professional training program. Extrinsic and intrinsic job features were the focus when examining the importance of job characteristics. The five personality traits studied were neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. These traits can be associated with work related attitudes such as job satisfaction and motivation. Agreeableness was the strongest predictor when related to intrinsic factors.

The first study examined the impact personality traits have upon different job aspects. Study one of the student group supported the concept that certain job characteristics can be related to personality traits. Study two examined an employee sample group to evaluate whether the findings with the intrinsic job motivation factors were related. The openness to experience factor was positively related to intrinsic aspects. The study two results also supported the association between “the importance rating of work experience” and “agreeableness.” Age related differences had an impact on distinct intrinsic job aspects. In both studies, conscientiousness and extraversion were correlated with most intrinsic work motivation factors.
Maslow’s Hierarchy of Needs Theory

Dye, Mills, and Weatherbee (2005) studied Maslow’s work because Maslow’s need theory had been sustained and applied to multiple business problems; however, the theory has seldom been applied to management and organizational theory. The researchers explained how Maslow’s hierarchy of needs has been applied to multiple applications, although the reliability and validity of Maslow’s theory has been questioned. Maslow’s human hierarchy theory demonstrated five basic needs ranked in hierarchical order on levels. Maslow’s basic needs are physiological, safety, social, esteem and self-realization. Each basic need must be satisfied before advancing to the next level. The final level resulted in self-actualization. Maslow believed that gender determined the path to self-actualization.

In the late 1980’s, Kovach (1987) compared various motivational theories related to workforce motivation. Five general motivation levels were summarized in Maslow’s theory, along with the Herzberg’s two-factor motivation-hygiene theory. His research demonstrated a disconnection between the practical motivational application of these theories to workforces, as well as possible reasons for this impact.

Kovach broke down motivational factors by gender, age, income, job types, and organizational level. Women placed more emphasis on interpersonal relationships and communication when compared to men, who desired interesting work. The under 30 age group selected good wages, job security and promotion/growth as the top three motivators; this demonstrated Maslow’s theory of influence that states basic needs should first be satisfied. Unskilled blue-collar workers ranked appreciation for job completion as primary, and they were more concerned with job security than white-collar unskilled
workers. The author encouraged emphasis on job enlargement and enrichment. Most employees older than 40 years had their basic needs met by their job (Maslow’s theory). Kovack’s recommendation was for management to understand what motivated employees within their jobs, especially because employee motivation was directly linked to productivity (Kovack, 1987).

Sadri and Bowen (2011) defined motivation as a series of psychological processes that allow pursuit of an individual goal. Founded on Maslow’s theory, when a need was satisfied, it no longer functioned as a motivator. Basic psychological needs included the need for sleep, food, water and air. Monetary compensation and comfortable work environment were also in this category. Safety needs were in the next level, related to physical safety and included health and disability insurance. The third tier was the need for love and belonging, which translated to social support in the work place and relied upon teams. The fourth tier need, esteem, contained responsibility, reputation, prestige and respect from others. A self-confident employee was more motivated to produce. The top tier represented the self-actualization need, where employees’ high-level performances were encouraged. Opportunities within companies for employees to advance their education through tuition reimbursement, along with personal and professional growth incentives, all fulfilled this level of need. Benefits packages founded on these five tiers by companies appealing to a variety of employee motivations, ultimately encouraged workforce productivity, loyalty and creativity (Sadri & Bowen, 2011).
Conclusion

O’Toole (2007) demonstrated that few school district and states currently require specific credentials for the director of school nutrition programs, but effective program management requires skillful budget oversight, purchasing skills, human resource skills as well as nutrition knowledge and understanding (Nettles et al., 2009). USDA (2012) conducted a survey of professional standards for state agencies, district directors, school nutrition managers and other school nutrition personnel. Only 38 states responded to the survey, with only 22 states reporting professional standards for the various positions in school nutrition. For the states within the Southeast USDA region, only Alabama, Florida, Georgia and Kentucky have professional standards for district directors (USDA, 2012 February). However, USDA has introduced proposed national credentialing standards, with the plan to begin implementation July 1, 2015. These credentials recognize a bachelor degree in dietetics as an acceptable credential for district level leadership (USDA, 2014).

Understanding the challenges associated with managing a school nutrition program and the specific training a registered dietitian receives; there is a potentially natural fit for registered dietitians in district school nutrition programs to be in leadership roles. Research has focused on the school nutrition program as well as registered dietitians’ training, but limited research has been available examining how registered dietitians select current leadership roles in school nutrition programs. Further research could also determine if current senior dietetic students are exposed to career options in school nutrition as part of their coursework, and thus impacting their consideration of school nutrition leadership as a career option.
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CHAPTER 3: METHODOLOGY

Introduction

The purpose of this study was to examine motivational aspects and job related responsibilities influencing RDs currently in school nutrition program leadership positions, and also to evaluate senior dietetic students’ decisions to pursue careers in school nutrition leadership. This research was conducted in the Southeast USDA region.

Research Objectives

The research objectives were to:

1. Identify the perceived motivational aspects that prompted registered dietitians to select school nutrition leadership as a current career;
2. Identify the job related responsibilities registered dietitians find satisfying in school nutrition leadership;
3. Determine the reasons why senior dietetic students consider school nutrition as a profession;
4. Identify the perceived motivational aspects influencing current senior dietetic students to not consider school nutrition as a profession;
5. Compare questionnaire responses by registered dietitians in school nutrition leadership with those of senior dietetic students for motivational aspects.
6. Compare questionnaire responses by registered dietitians in school nutrition leadership with those of senior dietetic students for job responsibilities.
A primarily quantitative method approach was used to address objectives of the study; it involved data collection and data analysis of responses given by individuals in the samples (Creswell, 2008). First, a sample of RDs currently in school nutrition leadership roles in the Southeast USDA region completed questionnaires asking for information about aspects associated with selection of their school nutrition positions. Second, senior dietetic students completed questionnaires about their current education and future career intentions and interests. Questions requesting demographic information and desired workplace characteristics were included in both questionnaires.

**Use of Human Subjects in Research**

The Iowa State University Human Subjects Institutional Review Board reviewed and approved the proposal for this study to ensure that participants’ safety, rights and health would be protected (Appendix A). Cover letters were attached to the questionnaires explaining the purpose of the study, in addition to assuring anonymity and confidentiality of questionnaire responses (Appendices B and C). The researcher completed Human Subjects Research Assurance Training and was appropriately certified by Iowa State University.

**Research Design**

The research design was quantitative in nature. An electronic questionnaire was used to gather data concerning job responsibilities maintained by RDs in school nutrition leadership roles, their levels of job satisfaction, and reasons for selecting their current positions. A second electronic quantitative questionnaire gathered data relating to senior dietetic students’ reasons why they might or might not consider a future position in
school nutrition leadership, as well as the motivational aspects influencing them to not select school nutrition.

**Questionnaires**

Two questionnaires were developed and the questionnaire survey links were emailed to two different sample groups within the Southeast USDA region. One questionnaire was electronically administered to credentialed RDs in current school nutrition leadership positions, and the second questionnaire was electronically administered to senior dietetic students in accredited dietetic programs in the same region. The sample selection, content, development, distribution and analysis of the questionnaires were as follows.

**Questionnaire Sample Selection**

The Southeast USDA region consists of Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee (USDA, 2013) and constituted the geographical limits for questionnaire samples. The questionnaires were sent to both current RD school nutrition leadership who were members of the School Nutrition Services Dietetic Practice Group (SNSDPG) and current senior dietetic students attending AND accredited universities in the Southeast USDA region. Efforts to reach all RDs in current leadership roles were made. The RD questionnaire participants were asked to forward the questionnaire link to other RDs involved in school nutrition leadership roles within other school districts. Questionnaire participants were asked to complete the questionnaire one time.

The 2012-2013 AND treasurer and school nutrition program director for Burke County, Georgia provided the list of current members of this dietetic practice group (D.
Martin, personal communication, February 26, 2013). The SNSDPG list provided the names and email addresses of 219 registered dietitians who were members of the school nutrition practice group in the Southeast USDA region (D. Martin, personal communication, February 26, 2013). However, registered dietitians working in school nutrition leadership positions are not always members of the SNSDPG.

Therefore, each respective state agency director was also contacted and requested to forward the questionnaire link to RDs working in school nutrition leadership roles within their state, including those in the state agency, in an effort to contact RDs not affiliated with the SNSDPG. Nancy Rice, Georgia Department of Education State School Nutrition Director and former SNA president, also contacted state agency directors requesting their assistance with the sharing of the questionnaire link on behalf of the researcher. This request potentially increased the sample size of RDs for the school nutrition leadership questionnaire. The school nutrition leadership criterion was defined as RDs working as directors, coordinators, supervisors or program specialists, or school managers at the district level or members of the state agency staff. The entire list of SNSDPG members, the additional RDs in school nutrition leadership contacted by the state directors, and RDs that were forwarded the questionnaire comprised the questionnaire sample. Southeastern states can require licensure for registered dietitians to practice dietetics, but for the purpose of this study this credential was not evaluated.

Student questionnaires were conducted in AND accredited institutions located within the USDA Southeast region. There were forty-five universities/colleges with accredited programs accessible for the questionnaire. According to the AND website there were 2,677 students enrolled in the USDA Southeast region’s dietetic accredited
schools for the 2012-2013 academic year (AND, 2013). This provided an estimated sample of 669 senior dietetic students, assuming one-quarter of the enrolled population was made up of senior level students (AND, 2013). However only 22 AND accredited institutions agreed to share the questionnaire link with their senior level dietetic students, of the total 1891 dietetic students enrolled in these programs, the estimated sample was approximately 473 students, assuming one quarter of the dietetic students were seniors and all of the 22 programs shared the questionnaire link with every senior dietetic student.

Southeastern USDA didactic administrators were contacted prior to sending the questionnaire links to evaluate their willingness to distribute survey links. Those administrators who agreed to participate (n = 22) were sent questionnaire links to distribute to current senior level dietetic students in the program. Senior students had to be enrolled in coursework required for the last year of the didactic program in order to participate in the questionnaire. On the questionnaire, dietetic students were asked if they were senior students enrolled in didactic programs. Questionnaire participants not meeting this criterion had their responses excluded from data analysis. The Iowa State University (ISU) IRB approval form was shared with the programs who agreed to participate. One institution requested an authorization agreement be completed between ISU and their institution before distribution to students. There were two institutions which requested IRB approval from their school and that was also received prior to questionnaire distribution. The IRB agreements were received prior to questionnaire distribution.
**Questionnaire Development**

Questionnaire development began with an assessment of RDs’ job responsibilities (Mathieu, 2009; Pucket et al., 2009; Laramée & Tate, 2012) and job satisfaction (Sauer, 2010; Harvard Business Review, 1987). Career motivation (Chan et al., 2012; Bipp, 2010; Siemens, 2005) was also considered during questionnaire development to develop questions measuring aspects related to school nutrition leadership. Demographic questions were also included to assist with questionnaire response comparisons by participants.

**Questionnaire Content**

**Questionnaire for School Nutrition Leadership**

The leadership questionnaire included three sections (Appendix B). The sections were school nutrition selection, school nutrition satisfaction and demographic information. The first section focused on reasons participants selected their current position in school nutrition. A review of literature aided in developing questions designed to identify specific aspects associated with dietetic proficiencies, leadership competencies, and career motivational aspects. Questions were grouped by category under *job responsibilities*, *job satisfaction*, and *career motivation*. The section contained 36 statements mixed with negative phrasing and response choices on a five-point Likert-type scale rated as follows: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree. The three categorical divisions for questions were:

1. **Job responsibilities** (8 statements) -- This aspect assessed how participants determined their multiple job related responsibility skills, including process and project management, human resources management,
budgetary management, customer satisfaction and food safety. Examples of questionnaire statements were: “I selected a school nutrition position because it helped me continue to develop foodservice leadership skills; I selected a school nutrition position because I wanted to utilize my leadership training.”

(2) **Job satisfaction** (15 statements) -- This aspect assessed what participants considered influential in determining contentment with their position in school nutrition leadership. Questionnaire statement examples included: “I selected a school nutrition position because this type of job was not boring; I selected a school nutrition position because I did not consider the amount of pay and benefits important.”

(3) **Career motivation** (13 statements) -- This aspect evaluated the specific influences on participants’ interest in their current position. Examples of questionnaire statements included: “I selected a school nutrition position because I do not want to be professionally challenged; I selected a school nutrition position because I wanted to make a difference in the world.”

The second section of the questionnaire evaluated participants’ satisfaction levels associated with motivational aspects and specific job responsibilities associated with the school nutrition leadership position. There were 18 statements in this section. There were ten statements evaluating motivational aspects of the participants working in school nutrition leadership and eight statements related to specific school nutrition leadership job responsibilities. A five-point Likert-type scale was used for calculating mean
response scores (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.)

As recommended by Dillman, Smyth, and Christian (2009) the final section consisted of general demographic and background information. Participants were asked about their educational background, exposure to school nutrition leadership, career plans and information related to current position. Demographic information was used to determine group participants by state within the USDA geographical region. This section contained 21 questions.

**Questionnaire for Senior Dietetic Students**

The questionnaire for senior dietetic students had three sections (Appendix C). The three questionnaire sections were reasons for considering school nutrition selection, reasons for not considering school nutrition and demographic information. Generally the questions in all three sections were worded to be similar to questions for the school nutrition leaders, with minor adjustments to reflect a student perspective. The first questionnaire section included questions to assist with the evaluation of student participants’ intentions to apply for positions in the school nutrition field after completing their internships and aspects associated with comparable leadership competencies, job satisfaction expectations and career motivation. This section contained 36 questions with response choices on a five-point Likert-type scale rated as follows: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

The second section assessed possible reasons why dietetic students would not consider a position in the school nutrition field. The 20 questions were rated by students on the same five-point Likert-type scale utilized in the first section of the questionnaire,
and included questions evaluating the students’ perceptions of the school nutrition program and leadership position.

As recommended by Dillman et al. (2009), the third section consisted of general demographic and background information. Participants were asked about their educational background, exposure to school nutrition leadership in coursework, and career intentions. There were eleven questions in this questionnaire section. The demographic information grouped participants according to their state within the USDA geographical region for response assessment.

**Face Validity**

Prior to pilot testing, the questionnaires were reviewed by five current SNDPG members outside of the Southeast USDA region to confirm face validity (Appendix D & E). Hardesty and Bearden (2004) suggested a panel of experts be used to establish face validity for research using scales. Recommendations from these school nutrition program experts and RDs assisted with determining statements which were related or not related to the questionnaire constructs (Hardesty & Bearden, 2004). In addition, the research committee members also reviewed the questionnaires. As a result of these reviews, modifications were done, prior to pilot testing.

**Pilot Studies**

The school nutrition leadership questionnaire (Appendix F) was pilot-tested at the end of September 2013 by the members of the SNSDPG (N = 27) in Iowa. The total Iowa SNSDPG list included 29 members, but two were identified as university professors and excluded from pilot testing resulting in 27 members being contacted. There were 13 of the RDs from the Iowa SNSDPG who participated in the pilot questionnaire, but only ten
of those were employed in leadership roles in school nutrition. The pilot study feedback recommended changes to questions negatively phrased “I do not” for clarity, and also that a question be added evaluating availability of a school nutrition position in the participant’s geographical area.

The student questionnaire (Appendix G) was pilot-tested with 19 senior level dietetic students at Iowa State University (ISU) the middle of September, 2013. Iowa was chosen because senior dietetic student were accessible and the state was outside the USDA Southeast region. Conducting the pilot testing outside of the Southeast region was done in order to prevent elimination of potential questionnaire participants from the sample. Pilot testing ensured questionnaires were understandable and readable. Questionnaire feedback was collected through pilot questionnaire validation form which was provided with the questionnaire (Appendices H and I). The pilot testing also provided feedback on the time needed to complete both questionnaires.

**Coding and Online Set Up of Questionnaire**

The modified questionnaires were submitted to the Office of Distance Education and Education Technology (ODEET) at ISU for formatting the questionnaire for online distribution. Qualtrics® was utilized for online administration of the pilot and final questionnaires. When the online questionnaires were complete, each question was tested for function of all responses by the researcher. When the questionnaire reviews were complete and all possible selections were confirmed accessible, the questionnaire was pilot tested. Final questionnaire modifications were made in response to the pilot testing feedback. The final questionnaire was edited and each question was tested again for response function.
Questionnaire Distribution

Members of the Southeast USDA region SNSDPG constituted the initial email contact list. In addition, the cover letter (Appendix B) requested further distribution of the questionnaire link to other RDs in the school district who may not be part of the SNSDPG. Additional emails were sent to the eight state directors requesting distribution of questionnaire link to school nutrition RDs in those states. Nancy Rice, Georgia Department of Education state agency director and past SNA president, also shared the questionnaire link with state agency directors on the researcher’s behalf. State directors were offered the survey results in appreciation of their assistance in generating contacts.

The questionnaire links were emailed to SNSDPG participants in the eight states. A follow-up email was sent seven days following the initial mailing to ensure questionnaires were received. Seven days prior to the deadline for the questionnaire submission, an email reminder was sent to participants asking them to participate in the questionnaire before the deadline. To improve the response rate, an incentive of two $50 Visa cards (four total $50 Visa cards provided) was offered to both the RD and student group participants who submitted completed questionnaires with email address information (Dillman et al., 2009). A manual drawing was conducted to randomly select questionnaire participants as gift card winners.

Department chairs of the accredited university and college dietetic programs located in the Southeast USDA region were contacted by email to request participation of their senior level dietetic students. The didactic program administrators were asked to provide the questionnaire link to senior dietetic students to eliminate blocking by internet fire walls from direct emails to the individual students. The purpose of the study,
confidentiality and incentive for study participation was explained in the cover letter (Appendix C). A final report of the study findings was offered to department chairs in appreciation of their support. There were 22 dietetic programs, from all eight states in the Southeast USDA region, who agreed to share the questionnaire link with their students. Prior to questionnaire distribution, the IRB approval from ISU was shared with each university. Three schools also required IRB approval from their universities. The additional IRB approvals were granted prior to questionnaire distribution. Seven days after the initial request to distribute the questionnaire link, a reminder email was sent to dietetic program directors requesting their assistance with questionnaire distribution. Seven days prior to closing the questionnaire, an additional reminder request was again sent to the dietetic program directors.

**Data Analysis**

The collected data were coded, processed and analyzed using the Statistical Package for Social Sciences version 19 and JMP version Pro10. Dillman et al. (2009) data coding and entry recommendations were utilized. For example, the scale for responses selecting the category of strongly disagree was coded as “1”, disagree was coded as “2”, neutral was coded as “3”, agree was coded as “4” and strongly agree was coded as “5”. Reverse coding was utilized for the response to the negatively phrased items. To determine the reliability of the questionnaire Likert-type survey questions, Cronbach’s alpha internal consistency test was used. Before data analysis was conducted, data were reviewed and cleaned ensuring data were coded correctly. Both partial (answering only part of the questions, but not responding to the entire questionnaire) and complete (all questions in questionnaire were answered) responses were evaluated by
comparing frequencies and total mean scores for both completed and partially completed questionnaire responses. When using the entire dataset (both partial and complete questionnaire responses), there was little difference between frequencies and total mean scores therefore all questionnaire responses were retained in the final data set.

Descriptive statistics including mean scores, standard deviations and frequencies were used to analyze questionnaire data. The entire RD ($N = 158$) and student ($N = 129$) response data set was used for analysis. Mean scores for each questionnaire statement were calculated for all Likert-type scale responses. For the RD questionnaire, selection and satisfaction statement mean scores are reported in Chapter 4. For the student questionnaire, reasons for selecting and not selecting statement mean scores are presented in Chapter 5.

Principal component analysis (PCA) was used to answer the research questions identifying the motivational aspects influencing RDs to select school nutrition and the job related responsibilities RDs find satisfying in school nutrition. PCA was selected as the data reduction method to determine a smaller number of components representing the original RD selection and RD satisfaction statements, because no underlying construct model assumptions were made and it analyzes data variance (Principal Component Analysis, 2013). PCA weighted the observed statement responses producing two principal components reflecting most of the variances with the RD selection scale statements (Principal Component Analysis, 2013; Abdi, & Williams, 2010). The RD satisfaction scale statements were collapsed into two single principal components representing the satisfaction scale constructs. The results from this analysis are included in Chapter 4.
Independent $t$ tests were conducted to answer the following research objectives: compare RD questionnaire responses with those of senior dietetic student responses on motivational aspects and compare RD questionnaire responses with those of senior dietetic student responses on job responsibilities. The $t$ test was utilized because there were two independent sample groups of comparable size with equal variances (Dawson & Trapp, 2004). Student statement mean scores were also compared with each other for student responses on statements associated with not considering school nutrition as a possible career option. Chapter 5 provides the results of this analysis.

**References**


CHAPTER 4: REGISTERED DIETITIANS IN SCHOOL NUTRITION LEADERSHIP: MOTIVATIONAL ASPECTS OF JOB SELECTION AND JOB SATISFACTION.

A paper to be submitted to the *Journal of Child Nutrition and Management*

Dodson, L. and Arendt, S.

**ABSTRACT**

**Purpose** - This study examined motivational aspects related to selecting school nutrition leadership as a career by registered dietitians (RDs) in the Southeast Food and Nutrition Services (FNS) United States Department of Agriculture (USDA) region. Motivational aspects were defined as those valued characteristics influencing individuals to seek or desire a specific work environment. Aspects of job satisfaction were also explored.

**Methods** - An online questionnaire was distributed to all active members (n = 219) of the School Nutrition Services Dietetics Practice Group (SNSDPG) in the Southeast USDA region as well as state agency directors (n = 8) for distribution. Questionnaires collected information on motivational aspects influencing RD selection of school nutrition as a career and satisfaction with their school nutrition leadership positions. Responses were provided using a 5 point Likert-type scale (1 = strongly disagree to 5 = strongly agree).

**Results** - Motivational aspects influencing job selection in school nutrition included attributes such as responsibilities, program requirements, stability, and security. RD job selection was also influenced by wanting to engage/work with people ($M = 4.55; SD = 0.68$), working for a positive outcome ($M = 4.53; SD = 0.64$). RD job selection was also influenced by aspects of coworker relationships and be valued by coworkers, as well as having promotion opportunities. Job satisfaction was associated with job security, stable work environment and utilizing dietetic skills ($M = 4.15; SD = 0.82$), but also with job
responsibilities such as the financial and personnel management aspects of school nutrition.

**Application to Child Nutrition Professionals** - As current school nutrition leadership considers retirement (34% of research participants were 56 years or older), this research provides insight into aspects influencing RDs to consider school nutrition leadership and those job responsibilities that RDs find satisfying. Understanding these aspects may benefit foodservice management and dietetic educators by helping develop future school nutrition program leadership and marketing this leadership option to RDs. Providing a better understanding of what aspects RDs find satisfying in school nutrition leadership may allow for successful recruitment to help fill the retirement void.

**INTRODUCTION**

In 2013, there were 13.02 million breakfasts and 30.4 million lunches provided to a diversity of school-age students through the national school meal programs (USDA, 2014a). These federally funded meal programs include the National School Breakfast Program and Lunch Programs (NSLP) which focus on providing nutritious meals to school age children (Hinrichs, 2010). As part of the regulations governing meal programs, the Healthy Hungry Free Kids Act (HHFKA) (USDA, 2010) established new nutritional meal standards, as well as standards for maintaining qualified program leadership (Section 306, HHFKA). Registered dietitians are often considered for leadership in these programs; RDs possess skills to meet operational challenges in school nutrition for providing nutritious meals to diverse student populations (ADA, 2010a).

School nutrition program management includes many challenges with preparing nutritious meals for students (ADA, 2010). To meet those challenges, skills are necessary
to carry out responsibilities such as financial management, food safety, menu management, food production management and facility sanitation (Nettles, Carr, & Asperin, 2010; ADA, 2010a). An additional responsibility, improving student’s nutritional status, has also been identified as a means to improve student health and academic success (ADA, 2010). Providing food and beverages to students during the school day that meets the 2010 Dietary Guidelines is supported by the American Dietetic Association (ADA, currently known as the Academy of Nutrition and Dietetics) and is a major focus for school nutrition leaders. In order to improve school health environments, USDA will implement new competitive food and beverage standards on July 1, 2014 for food sold to students during the school day (USDA, 2013); this will continue to advance improvement of the healthy school environment and further expand offering healthy food options outside of the school meals program.

In addition to maintaining consistent nutrition standards in schools, maintaining qualified leadership for school nutrition programs is important to ensure program sustainability and integrity. As part of the HHFKA, the USDA recommended establishment of national credentials for state and local program leadership (USDA, 2010). USDA released a proposed rule with minimum educational hiring standards for local program directors associated with school district size (USDA, 2014). However, there currently is a broad credential range for school nutrition program directors when comparing requirements by states. In 2012, the USDA surveyed 38 state representatives; 22 surveyed state representatives reported having professional credentials for the school nutrition program directors, state agency directors and staff (USDA, 2012). As current school nutrition leadership retires, the need for qualified personnel will increase.
Thornton (2007) surveyed Southeast USDA region school nutrition directors whose schools were recognized as Healthier U.S. School Challenge (HUSSC) schools and found the majority of the respondents were between 51-65 years old at the time of the study.

**School Nutrition Program Requirements**

Providing nutritious meals is the purpose of school nutrition programs (Hinrichs, 2010), however an additional program responsibility addresses child obesity through the provision of healthy meals. The new program nutrition standards focus on inclusion of whole grains, increased fruit and vegetable servings, reducing sodium, ensuring foods have no trans fats and setting specific calorie ranges for each grade group (USDA, 2013). However, school nutrition leaders faced challenges in implementing healthy meal standards, even prior to these new standards (O’Toole, Anderson, Miller, & Gutherie, 2007). With the increasing nutritional accountability, more advanced knowledge and skills are needed for program oversight.

**Wellness Policy Implementation**

The Child Nutrition and WIC Reauthorization Act of 2004 required development of a local wellness policy in all districts participating in NSLP by 2006 in order to address the health of the school environment. Unfortunately, the content and local support for those wellness policies varies widely and, minimal improvements have been documented in schools (Longley & Sneed. 2009; Turner & Chaloupka, 2012; Wall, Litchfield, Carriquiry, McDonnell & Woodward-Lopez, 2012). Districts in Iowa, with little emphasis on health improvements and ineffective wellness policies also had unhealthier vending options according to Wenz, Thorius, Wendland, and Litchfield (2012). School nutrition leaders can play an important role in monitoring the
effectiveness of local wellness policies, as well as working to improve the school health environment (ADA, 2010a).

**School Nutrition Program Benefits**

While districts are required to maintain school wellness policies, school nutrition leadership promotes school nutrition program standards to support student achievement. When school health programs incorporate program nutrition standards, not only does students’ nutritional status improve, but so does their academic performance (ADA, 2010b). The Centers for Disease Control (2013) recommended that school districts follow a coordinated school health model consisting of eight components, which include a healthy and safe environment, health and physical education as well as health and nutrition services.

**School Nutrition Program Employee Credentials**

Effective school nutrition program implementation requires qualified leadership to direct the operation. Martin and Oakley (2009) defined school nutrition leadership as qualified individuals directing program performance focused on positive program outcomes such as promoting improved nutritional meal standards. Nettles, Carr, and Asperin (2009) provided ten categories for the specific job responsibilities for qualified district level leadership. However, O’Toole et al. (2007) found only 37.3% of the states actually had a district approved policy providing specific job responsibilities for the supervisor or coordinators of school nutrition programs. The Center for Disease Control’s (CDC) 2012 School Health Policies and Practices Study included national responses from 660 school districts where 93.5% of school nutrition coordinators had undergraduate degrees and 64.3% were in nutrition and dietetics (CDC, 2012). Thornton (2007)
surveyed HUSSC recognized school district leaders in the Southeast region and 78% of participants ($n = 304$) had college degrees.

**Southeast Food and Nutrition Service (FNS) USDA Region**

The Southeast USDA region contains the following states: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee. In these eight states, only South Carolina, North Carolina and Tennessee have no educational requirements for district directors (USDA, 2012). Five states in this region mandate increased educational requirements for district level school nutrition directors and these states also demonstrated an eight percent greater meal participation rate (Thornton, 2007). Georgia requires a director’s certificate with a master’s degree as the minimal educational requirement (Georgia Professional Standards Commission, 2012). Mississippi has three certificate levels for school nutrition administrators starting with a high school diploma with six college credits, second level requires a bachelor’s degree and the third level requires a master’s degree (Mississippi Child Nutrition Programs Policy and Procedure Manual, 2000). Kentucky requires the School Nutrition Association’s Certification Level 2 as the educational requirement for the program director or menu planner (Kentucky Department of Education, 2005). Alabama’s requirement is a bachelor’s degree and state certification (Alabama State Department of Education, 1994).

**Registered Dietitian Competencies**

Management competencies possessed by RDs make them capable of leading federal meal programs and thus providing positive career opportunities for RDs. School nutrition program leadership can be provided by RDs, especially when job
responsibilities include meeting nutritional meal standards and wellness policy requirements, providing nutrition education and medical nutrition therapy to special needs students (AND, 2013; ADA, 2010a)

Limited knowledge of job satisfaction associated with RDs’ management job responsibilities has been studied. Sauer, Canter, and Shanklin (2010) studied the personal and financial responsibilities of RDs with management responsibilities. Three dietetic practice groups (Management of Food and Nutrition Systems, Clinical Nutrition Management, and School Nutrition Services) participated in Sauer et al.’s (2010) research where supervision, coworkers, fringe benefits and nature of the job achieved the highest job satisfaction scores (Sauer et al., 2010). The highest overall job satisfaction score was seen with the district managers and directors, but operating conditions demonstrated the lowest satisfaction score for all job titles surveyed (Sauer et al., 2010).

The research objectives for this study included: (1) identification of motivational aspects that prompted RDs to select school nutrition leadership as a current career, and (2) determining the aspects registered dietitians find satisfying in this work.

METHODS

The sample used for the online questionnaire was the School Nutrition Services Dietetic Practice Group (SNSDPG) membership for the Southeast USDA region. The SNSDPG is available to AND members to assist with resources, professional collaboration and continuing education focused on school nutrition. All of the 219 SNSDPG members in the eight states were contacted through email requesting their participation and sharing of the questionnaire link with other RDs working in school nutrition leadership (district directors, coordinators, supervisors, managers, and state
agency representatives). SNSDPG members were contacted in Alabama \((n = 19)\), Florida \((n = 50)\), Georgia \((n = 53)\), Kentucky \((n = 19)\), Mississippi \((n = 17)\), North Carolina \((n = 28)\), South Carolina \((n = 12)\), and Tennessee \((n = 21)\). In addition, state agency directors in this region were contacted and asked to share the questionnaire with RDs working in school nutrition in their states. Not every RD working in school nutrition leadership maintains a SNSDPG membership, so state agency directors were contacted to share the questionnaire link with non-SNSDPG members. The Southeast USDA region was selected because five states maintained specific educational credentials for district directors \((USDA, 2012)\). The online questionnaire was accessible for four weeks through Qualtrics®. Dillman, Smyth, and Christian \((2009)\) recommended follow up reminders as well as incentives to improve the response rate. Therefore, follow up emails were sent to the RD SNSDPG members of the Southeast USDA region and the state agency directors seven days after the initial questionnaire requests were distributed; in addition, an email reminder was sent seven days before survey completion deadline. Two $50 Visa gift cards were offered through a random drawing as an incentive for submitted questionnaires.

**Questionnaire Instrument**

The questionnaire was developed to gather data on aspects that influence RDs to select careers in school nutrition, as well as the aspects impacting their satisfaction level. After reviewing literature \((Sauer et al., 2010; Hertzberg, 1987; Laramee & Tate, 2012; Puckett et al., 2009; Mathieu, 2009; Chan et al., 2012; Bipp, 2010: Siemens, 2005)\), an online questionnaire was developed. The questionnaire was reviewed for face validity by a panel of school nutrition experts who were members of SNSDPG outside of the
Southeast USDA region. Hardesty and Bearden (2004) recommended a panel of experts affirm face validity prior to distribution. The questionnaire was also validated by five research committee members prior to pilot testing. The questionnaire was pilot tested with RDs that were members of the Iowa SNSDPG ($n = 10$). The pilot study feedback was used to add a statement about the geographical availability for school nutrition positions, as well as clarification for the “I do not” statements.

The questionnaire consisted of 27 questions divided into three sections. The first section (RD selection scale) contained two questions containing a total of 36 statements (positively and negatively phrased), of which eight negatively phrased statements were reverse coded following Dillman’s (2007) recommendation. This section focused on the aspects influencing RDs to select school nutrition, specifically related to job satisfaction, job responsibilities and career motivational aspects. The response options for the 36 questions was a five point Likert-type scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). The second section (RD satisfaction scale) provided 18 statements, four negatively phrased statements were reverse coded, and the same five point Likert-type response scale was utilized following the question evaluating RD satisfaction of motivational aspects and job responsibilities.

Computation of Cronbach’s alpha was conducted with the responses from the RD selection scale and the RD satisfaction scale. The RD selection scale demonstrated good scale reliability with Cronbach’s alpha $= 0.80$ (Cronbach, 1951). The RD satisfaction scale showed reasonable reliability with a Cronbach’s alpha of 0.67; there were fewer items (18 statements) included in the job satisfaction scale, potentially impacting the overall reliability of the scale (Gliem & Gliem, 2003; Tavakol & Dennick, 2011).
The final questionnaire section consisted of questions requesting demographic and background information. Demographic questions were put at the end of the questionnaire to prevent participants from becoming disengaged in the questionnaire prior to completion (Dillman, Smyth, & Christian, 2009).

**Data Analysis**

Questionnaire responses were analyzed using the Statistical Package for Social Sciences (SPSS) version 19 and JMP version Pro 10 (Cary, North Carolina). Analysis included descriptive statistics including frequencies, means and standards deviations. Principal component analysis (PCA) was conducted as a data reduction method with the Likert-type scale responses in order to reduce the selection and satisfaction statements into a smaller number of representative components and result in grouping those statements based on correlation. The selection and satisfaction statements contained some redundancy. By correlating these statements, a single variable was identified representing the statement group. PCA assisted with reducing the questionnaire statements into a smaller number of principal components (variables) representing the aspects influencing RD selection and satisfaction with school nutrition. (Principal Component Analysis, 2013). Principal components were determined based on eigenvalues greater than one from the RD selection and the RD satisfaction scales, in combination with the scree plots for both scales and the component matrix loading scores (Principal component analysis, 2013).

**RESULTS AND DISCUSSION**

There were 158 online responses received, however the response rate for the questionnaire is unknown because of the request to share the questionnaire link with
other RDs. There were a total of 158 responses, but not all participants completed every item which resulted in fewer responses for individual questions on the questionnaire.

**Demographic Characteristics**

The demographic breakdown of the sample is provided in Table 1. Approximately half (45%) of participants were 51 years or older while 26% of the respondents were between the age range of 22 to 35 years old. The questionnaire results demonstrated a similar demographic trend to results seen in Thornton’s (2007) regional study of school nutrition directors. For the school nutrition directors who participated in Thornton’s study, 45% were 51 years or older, which supports need for finding qualified individuals to replace retiring school nutrition leaders. Replacing these school nutrition leaders with qualified individuals appears to be a continuing concern for program stability. The 2010 HHFKA also requires the establishment of credentialing requirements for district and school level leadership (USDA, 2010). The RD credential would effectively meet the proposed credentialing requirement for a bachelor’s degree in a school nutrition related field and RDs would provide qualified leaders to fill the upcoming vacancies (USDA, 2014).

Females (96%) were the majority of respondents. The ethnic breakdown of respondents consisted of white (81%), African American (11%), and Hispanic (3%). School nutrition directors (39%) were the largest job title group of the participants with state agency representatives (23%) the next largest group. The smallest job title group was school nutrition managers (2%).

Participants working two to ten years (46%) in school nutrition were the largest percentage of respondents, while 29% of participants responded as having more than
sixteen years of school nutrition work experience. Participants were not asked whether school nutrition was their first or second employment opportunity, however with such a large percentage indicating employment of ten years or less in this field compared with the age demographics, school nutrition may have been their second career. The largest number of respondents was from Georgia (34%) and Florida (25%). South Carolina (3%) had the least participants.

Table 4.1. *Demographic characteristics of RD sample (n = 145-150)*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22-25 years old</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>26-30 years old</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>31-35 years old</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td>36-40 years old</td>
<td>13</td>
<td>9</td>
</tr>
<tr>
<td>41-45 years old</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>46-50 years old</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>51-55 years old</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>56-60 years old</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>61+ years old</td>
<td>21</td>
<td>14</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>144</td>
<td>96</td>
</tr>
<tr>
<td>Male</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td><strong>Ethnic Group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White (Non-Hispanic)</td>
<td>121</td>
<td>81</td>
</tr>
<tr>
<td>Black or African American</td>
<td>17</td>
<td>11</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Prefer not to respond</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>American Indian</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Asian, Asian American or Pacific Islander</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Multiracial</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Job Title</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Nutrition Director</td>
<td>58</td>
<td>39</td>
</tr>
<tr>
<td>State Agency Representative</td>
<td>34</td>
<td>23</td>
</tr>
<tr>
<td>Other (e.g. Consultant, Wellness Specialist)</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td>School Nutrition Coordinator</td>
<td>20</td>
<td>13</td>
</tr>
<tr>
<td>School Nutrition Supervisor</td>
<td>13</td>
<td>9</td>
</tr>
<tr>
<td>School Nutrition Manager</td>
<td>3</td>
<td>2</td>
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</tbody>
</table>
Table 4.1. **Demographic characteristics of RD sample (n=145-150) continued**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Years worked in School Nutrition</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-1</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>2-5</td>
<td>34</td>
<td>23</td>
</tr>
<tr>
<td>6-10</td>
<td>34</td>
<td>23</td>
</tr>
<tr>
<td>11-15</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td>16-20</td>
<td>21</td>
<td>14</td>
</tr>
<tr>
<td>20+</td>
<td>22</td>
<td>15</td>
</tr>
<tr>
<td><strong>States of employment</strong> (219 emails to SNDPG members)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alabama</td>
<td>10</td>
<td>6.9</td>
</tr>
<tr>
<td>Florida</td>
<td>36</td>
<td>24.8</td>
</tr>
<tr>
<td>Georgia</td>
<td>50</td>
<td>34.5</td>
</tr>
<tr>
<td>Kentucky</td>
<td>8</td>
<td>5.5</td>
</tr>
<tr>
<td>Mississippi</td>
<td>6</td>
<td>4.1</td>
</tr>
<tr>
<td>North Carolina</td>
<td>18</td>
<td>12.4</td>
</tr>
<tr>
<td>South Carolina</td>
<td>4</td>
<td>2.8</td>
</tr>
<tr>
<td>Tennessee</td>
<td>13</td>
<td>9.0</td>
</tr>
</tbody>
</table>

**Principal Components**

Principal component analysis (PCA) was conducted to collapse statements best describing the motivational aspects prompting RD participants to select a school nutrition career, as well as those aspects participants found satisfying in school nutrition leadership.

The PCA loading scores representing correlation of each scale statement were grouped and labeled with a statement category associated with comparable job responsibilities, job satisfaction and motivation aspects. These statement categories were used to define the two components which were labeled “employee opportunities” and “employee outcomes”, and were identified as the two components representing the selection statements from the PCA analysis (Principal component analysis, 2013).

Table 2 provides the principle components for the RD selection scale. Descriptive statistics including means and standard deviations for each statement were used for
comparison. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) measures vary between 0 and 1; the closer the KMO value is to 1 indicates more compact correlation values resulting in reliable components. The KMO for the RD selection statements was 0.763 therefore demonstrating that PCA was an appropriate data analysis method. KMO values between .70 and .80 are considered good (Kaiser, 1970). Bartlett’s test of sphericity examined if the covariances were 0 and the equality of the variances (Field, 2005). The Barlett’s test results were significant ($p = 0.000$) demonstrating the variance equality. Ten statements were excluded because of low component loading values. Component matrix values greater than 0.40 were used to identify the statements associated with each component (Guadagnoli & Velicer, 1988). Two principal components were identified for the RD selection scale. The first principal component was labeled “employee opportunities” and examples of statements that loaded on the component are those which benefited others, as well as providing health and personal benefits. There were 14 statements that loaded to “employee opportunities” component. 

*Influence others* had the largest loading scores (0.750) under the first component and *positive outcome* had the largest mean scores ($M = 4.53; SD = 0.63$). *Impact on childhood obesity prevention* had the second largest mean score ($M = 4.49; SD = 0.65$).

The “employee outcome” component has 10 statements loaded on it and the statements were grouped under subheadings of coworkers, promotion and utilize skills. *Focus on customer satisfaction* had the largest mean score ($M = 4.22; SD = 0.76$) under the “Employee outcomes” component and the second lowest loading score (0.435). *Be valued* had the largest loading score (0.796) for the second component.
Based on the responses provided on the RD selection scale, it appears that the statements *benefit others* and those for *health benefits* were aspects that impacted RDs selection of school nutrition based on the mean scores and the principal component analysis. The statements associated with *coworkers* and *promotion opportunities* in school nutrition demonstrated high component loading scores, but the statements mean scores were low. These aspects contributed to RD selection, but had lower mean scores indicating they were less influential selection aspects for current RDs in school nutrition leadership.
Table 4.2. Principal component analysis of RD selection statements

<table>
<thead>
<tr>
<th>Statement: Statement category</th>
<th>M</th>
<th>SD</th>
<th>Component 1: Employee opportunities</th>
<th>Component 2: Employee outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influence others: Benefit others</td>
<td>4.38</td>
<td>0.75</td>
<td>0.750</td>
<td></td>
</tr>
<tr>
<td>Positive outcome: Benefit others</td>
<td>4.53</td>
<td>0.64</td>
<td>0.713</td>
<td></td>
</tr>
<tr>
<td>Make a world difference: Benefit others</td>
<td>4.39</td>
<td>0.68</td>
<td>0.682</td>
<td></td>
</tr>
<tr>
<td>Impact other’s health and well being: Health benefit</td>
<td>4.45</td>
<td>0.70</td>
<td>0.706</td>
<td></td>
</tr>
<tr>
<td>Impact on childhood obesity prevention: Health benefit</td>
<td>4.49</td>
<td>0.65</td>
<td>0.614</td>
<td></td>
</tr>
<tr>
<td>Enjoy managing school nutrition operation: Personal benefits</td>
<td>3.99</td>
<td>0.81</td>
<td>0.642</td>
<td></td>
</tr>
<tr>
<td>Enjoy managing school nutrition program: Personal benefits</td>
<td>4.26</td>
<td>0.73</td>
<td>0.632</td>
<td></td>
</tr>
<tr>
<td>Satisfied with school nutrition leadership position: Personal benefits</td>
<td>3.99</td>
<td>0.80</td>
<td>0.602</td>
<td></td>
</tr>
<tr>
<td>Enjoy achieving positive financial results: Personal benefits</td>
<td>4.05</td>
<td>0.74</td>
<td>0.578</td>
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</tr>
<tr>
<td>Interested in job: Personal benefits</td>
<td>4.47</td>
<td>0.74</td>
<td>0.501</td>
<td></td>
</tr>
<tr>
<td>Utilize nutrition training: Provide training</td>
<td>4.29</td>
<td>0.69</td>
<td>0.518</td>
<td></td>
</tr>
<tr>
<td>Work with others: Engage others</td>
<td>4.30</td>
<td>0.61</td>
<td>0.515</td>
<td></td>
</tr>
<tr>
<td>Professional challenge: Develop skills</td>
<td>4.38</td>
<td>0.93</td>
<td>0.488</td>
<td></td>
</tr>
<tr>
<td>Foodservice leadership skills: Develop skills</td>
<td>3.95</td>
<td>0.90</td>
<td>0.467</td>
<td></td>
</tr>
<tr>
<td>Be valued: Coworker</td>
<td>3.72</td>
<td>0.93</td>
<td>0.796</td>
<td></td>
</tr>
<tr>
<td>Relationship: Coworker</td>
<td>3.97</td>
<td>0.92</td>
<td>0.686</td>
<td></td>
</tr>
<tr>
<td>Understanding: Coworker</td>
<td>3.54</td>
<td>0.89</td>
<td>0.643</td>
<td></td>
</tr>
<tr>
<td>Mentored by school nutrition leaders: Coworker</td>
<td>3.50</td>
<td>1.07</td>
<td>0.592</td>
<td></td>
</tr>
<tr>
<td>Promotional opportunities: Promotion</td>
<td>3.89</td>
<td>1.00</td>
<td>0.672</td>
<td></td>
</tr>
<tr>
<td>Better promotion opportunities: Promotion</td>
<td>3.33</td>
<td>0.92</td>
<td>0.538</td>
<td></td>
</tr>
<tr>
<td>Professional skills: Utilize skills</td>
<td>4.04</td>
<td>0.80</td>
<td>0.601</td>
<td></td>
</tr>
<tr>
<td>Professional leadership skills: Utilize skills</td>
<td>4.17</td>
<td>0.78</td>
<td>0.529</td>
<td></td>
</tr>
<tr>
<td>Focus on customer satisfaction: Utilize skills</td>
<td>4.22</td>
<td>0.76</td>
<td>0.435</td>
<td></td>
</tr>
<tr>
<td>Clinical dietetic knowledge: Utilize skills</td>
<td>3.63</td>
<td>1.08</td>
<td>0.432</td>
<td></td>
</tr>
</tbody>
</table>

Notes. M = mean; SD = standard deviation
Responses given on 5 point Likert-type scale (1 = strongly disagree to 5 = strongly agree)
Table 3 (RD satisfaction scale) shows the PCA results with two principal components being identified as well as mean score and standard deviations. The KMO for RD job satisfaction scale was 0.722; also demonstrating that PCA was an appropriate data analysis method for this scale because the KMO value was above 0.70 (Kaiser, 1970). The Bartlett’s test for sphericity also demonstrated a significant equality of variance ($p = 0.000$). The first component was labeled “job attributes” (e.g. security, stability, program requirements and satisfaction) and there were seven satisfaction statements that loaded on it. The second component was labeled “job preference” (e.g. utilize skills, independence and challenges), with seven satisfaction statements loaded on it. The statement with highest mean score under job attributes was *enjoy working in school nutrition leadership* ($M = 4.44; SD = 0.69$) and the largest loading score was for the *job security* statement (0.757) under job attributes. These statements relate to the motivational influences associated with Hertzberg’s and Maslow’s motivational theories (Kovach, 1987). Appealing to these motivational influences associated with school nutrition leadership may encourage future RDs to consider this career option. In addition, the highest mean score under “job preference” was the *employee training* statement ($M = 4.56; SD = 0.53$) and also the highest loading score (0.538). The responses on the RD satisfaction scale indicated RDs have satisfaction in their positions associated with *providing employee training, having a health impact on school-age children, enjoy working in school nutrition leadership, working independently and utilize their dietetic skills*. Future dietitians may be encouraged to consider this option and discover the beneficial application of their dietetic expertise, if current areas of RD satisfaction with school nutrition leadership are promoted. Marketing these areas to dietetic students, may present an accurate representation of the aspects
associated with school nutrition leadership positions resulting in their consideration of this career option.
<table>
<thead>
<tr>
<th>Statement: Statement category</th>
<th></th>
<th></th>
<th>Component 1: Job attributes</th>
<th>Component 2: Job preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job security: Security</td>
<td>3.83</td>
<td>0.94</td>
<td>0.757</td>
<td></td>
</tr>
<tr>
<td>Work environment: Stability</td>
<td>3.61</td>
<td>0.88</td>
<td>0.654</td>
<td></td>
</tr>
<tr>
<td>Managing requirement changes: Program requirements</td>
<td>4.00</td>
<td>0.83</td>
<td>0.583</td>
<td></td>
</tr>
<tr>
<td>Salary appropriate: Satisfaction</td>
<td>3.18</td>
<td>1.22</td>
<td>0.540</td>
<td></td>
</tr>
<tr>
<td>Enjoy working in school nutrition leadership: Satisfaction</td>
<td>4.44</td>
<td>0.69</td>
<td>0.503</td>
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</tr>
<tr>
<td>Financial aspects: Responsibilities</td>
<td>3.85</td>
<td>0.91</td>
<td>0.539</td>
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</tr>
<tr>
<td>Personnel management: Responsibilities</td>
<td>3.92</td>
<td>0.90</td>
<td>0.514</td>
<td></td>
</tr>
<tr>
<td>Employee training: Utilize Skills</td>
<td>4.56</td>
<td>0.53</td>
<td></td>
<td>0.538</td>
</tr>
<tr>
<td>Food and equipment bids: Utilize Skills</td>
<td>3.05</td>
<td>1.03</td>
<td></td>
<td>0.532</td>
</tr>
<tr>
<td>Utilize dietetic skills: Utilize Skills</td>
<td>4.15</td>
<td>0.82</td>
<td></td>
<td>0.496</td>
</tr>
<tr>
<td>Working independently: Independence</td>
<td>4.20</td>
<td>0.88</td>
<td></td>
<td>0.520</td>
</tr>
<tr>
<td>Program regulations: Challenges</td>
<td>4.01</td>
<td>0.83</td>
<td></td>
<td>0.511</td>
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<tr>
<td>Program changes: Challenges</td>
<td>4.03</td>
<td>0.97</td>
<td></td>
<td>0.461</td>
</tr>
<tr>
<td>School-age children: Health impact</td>
<td>4.38</td>
<td>0.58</td>
<td></td>
<td>0.476</td>
</tr>
</tbody>
</table>

*Notes.* $M$ = mean; $SD$ = standard deviation

*Chronbach* $\alpha = 0.67$ for entire RD satisfaction scale.

Responses given on 5 point Likert-scale (1 = strongly disagree to 5 = strongly agree)
CONCLUSIONS AND APPLICATION

The questionnaire results demonstrated a similar age demographic trend compared to results that were seen with RDs in general by Rogers (2014) and with school nutrition directors by Thornton (2007). For the RDs who participated in the questionnaire, 45% were 51 years or older, which supports the concern for finding qualified individuals to replace these school nutrition leadership positions. For the questionnaire respondents 36% had five years or less of experience, demonstrating that over one third of this sample was relatively new to school nutrition; while 43% of respondents had 16 or more years of experience. Replacing retiring school nutrition leadership with qualified individuals to meet program challenges will be important to maintain qualified program leadership. In addition, the knowledge deficit created by the loss of experienced of current leadership could impact program standards, making the need to recruit qualified individuals extremely important.

Considering the aspects identified from this research, RDs selected school nutrition leadership because of the benefits to others, specifically the influence on others, positive outcomes and making a difference in the world. Positive student health and academic outcomes result from provision of nutritious school meals (Hinrichs, 2010). RDs in this study also selected school nutrition based on coworker aspects such as being valued and understood by coworkers, which is similar to the satisfaction score results seen with RDs in Sauer et al. (2010). School nutrition leadership recruitment should include these aspects to appeal to qualified individuals, specifically RDs.

Understanding RD satisfaction in school nutrition leadership may be valuable in appealing to RDs working in other leadership areas outside of school nutrition and also
with future recruitment of dietetic students. Utilizing dietetic skills, providing employee training and handling the specific job responsibilities such as financial aspects, personnel management and budget oversight also contributed to RD satisfaction in this study. These results reinforced Rhea and Bettles’ (2012) findings that school nutrition leadership provides a good career opportunity for RDs. Also when considering the nutritional expertise required to meet improved program nutritional standards, as well as supporting therapeutic student needs associated with special diets and food allergies, dietetic skills and knowledge possessed by RDs are necessary. In many cases, school districts without RDs may require outside support from consulting RDs to provide services at an added cost to the school district. School nutrition leadership possessing RD credentials could effectively handle all job responsibilities associated with program management, and enjoy good job satisfaction.

There were a few limitations of this study, including that it was conducted in only one of the seven USDA regions, with states that currently have higher educational requirements for the school nutrition leadership, and therefore results may not be generalizable. Also only members of the SNSDPG and state agency directors were contacted, although they were asked to share the questionnaire, therefore RDs that were not members of these two groups were potentially excluded. There may be benefits to expanding to other USDA regions and groups to collect a broader range of responses.

A better understanding of these selection and satisfaction aspects and the desire to develop interest in school nutrition by promoting these aspects may encourage RDs to pursue this area. RD leadership would continue to provide important expertise benefiting continued program focus on improving school meal nutritional standards, meeting
specialized needs of a diverse student population and ultimately contributing to continued efforts toward creating a healthy school environment.

Additional research to examine exposure and preparation of dietetic students in these selection and satisfaction aspects may increase student awareness of this career option, and ultimately encourage consideration of school nutrition leadership as an area to apply the knowledge and skills developed as a result of undergraduate education. Recruitment of RDs who are qualified to meet the program needs for effective school nutrition leadership is needed. Once a better understanding of national selection and satisfaction aspects is achieved, and program exposure is prioritized, more qualified RDs could be influenced to consider school nutrition leadership. Marketing selection and satisfaction aspects identified in this research associated with school nutrition leadership may appeal to RDs considering a career change. Presenting realistic representations of these aspects and even allowing mentoring opportunities for dietetic students by RD school nutrition leaders may result in greater consideration of school nutrition careers.

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CHAPTER 5: WHAT MOTIVATES REGISTERED DIETITIANS AND DIETETIC STUDENTS TO PURSUE A JOB IN SCHOOL NUTRITION.

A paper to be submitted to the *Journal of the Academy of Nutrition and Dietetics*

Dodson, L. and Arendt, S.

ABSTRACT

**Background:** School nutrition programs require qualified individuals to manage and provide leadership. Registered dietitians (RD) work in school nutrition in leadership capacities. It is important to understand why current RDs work in school nutrition, and why dietetic students might consider a career in school nutrition.

**Objectives:** The research objectives were to determine and compare the motivational aspects (characteristics or features) and job responsibilities influencing RDs and dietetic students to select and to not select school nutrition as a career option. Comparisons between the identified motivational aspects and job responsibilities were examined among school nutrition RDs and dietetics students.

**Design:** Two online questionnaires were developed and administered through Qualtrics® to measure motivational aspects and job responsibilities with current RDs working in school nutrition leadership and senior dietetic students in the Southeast USDA region.

**Participants/settings:** The School Nutrition Service Dietetic Practice Group (*n* = 219) in the Southeast USDA region were sent the questionnaire link and asked to participate. A total of 158 RD responses were collected. Senior students in 22 Academy of Nutrition and Dietetic (AND) accredited didactic programs in the Southeast USDA region were asked to participate; 129 dietetic student responses were collected.

**Statistical analysis:** Questionnaire responses were given on a five point Likert-type scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). Mean
scores were calculated for each item on the questionnaire. Comparisons of RD mean score responses for why they selected and student mean scores for why they would select a career in school nutrition were analyzed using independent sample t tests.

**Results:** Questionnaire responses for RDs and students were significantly different ($p < 0.0001$) for the job satisfaction, job responsibility and motivational aspects including *foodservice leadership skills, work schedule preference, make a difference in the world* and *preventing childhood obesity*. The job satisfaction, job responsibilities and motivational aspects influencing senior dietetic students consideration of school nutrition positions were *impact other’s well being* ($M = 4.42; SD = 0.63$), *positive impact on preventing childhood obesity* ($M = 4.32; SD = 0.76$) and having an *influence others* ($M = 4.37; SD = 0.65$). Dietetic students would not select school nutrition in order to *develop clinical knowledge* ($M = 3.5; SD = 1.10$) and *clinical skills* ($M = 3.36; SD = 1.11$).

**Conclusions:** As current school nutrition leadership retires, these results may assist with marketing and recruiting of qualified RDs to fill vacant school nutrition leadership positions. Understanding aspects influencing dietetic students to consider working in school nutrition leadership may be beneficial to dietetic educators when presenting this as a dietetic career option.

**INTRODUCTION**

**School Meal Programs**

The National School Lunch program provides nutritious meals and snacks to school age students.¹ RDs have had a historical impact on the program and continue to serve in leadership roles in multiple program areas.² With increases in childhood obesity, the program focus expanded with the Healthy, Hunger Free Kids Act (HHFKA) of 2010
to include this initiative with improved nutritional standards eliminating trans fats, reducing sodium, increasing fruit and vegetable portions, increasing whole grain foods and establishing specific calorie ranges for grade groups. In addition to changes in school meal regulations, school nutrition professionals have also had to deal with mandated wellness policies and nutrition guidelines.

School districts were required to establish wellness policies to help promote healthy practices that expand beyond the meal standards and they are assigned with improving overall school health environments. While these policies have shown initial improvements in nutrition curriculum integration (24.8%), expansion of school nutrition departments providing nutrition education (23.8%) and improved nutrition educator professional standards (23.7%) in some districts, other research has shown only minimal improvements with the school health environment. A 13.6% decrease with the number of schools providing vended junk food was seen in the 2012 School Health Policies and Practices Study compared to 2006 data. Improvements in USDA standards for foods and beverages served outside of the meal program but during the school day will be implemented in July 2014.

**Leadership Credentials**

The HHFKA provides meal standards as well as recommendations for establishment of leadership credentials for administrators of child nutrition programs. The benefits of college degree credentialed versus non-credentialed district level directors have been documented in the literature. College credentialed directors demonstrated a greater impact on policy and practice scores in districts surveyed in Ohio. The Academy of Nutrition and Dietetics (AND) and the School Nutrition Association (SNA)
support developing credentialing standards for school nutrition leadership positions such as managers, system level directors and state agency directors. The National Food Service Management Institute endorses *Competencies, Knowledge, and Skills for District-Level School Nutrition Professionals in the 21st Century*, which provides ten categories to define job responsibilities school nutrition professionals.

As the present leadership moves toward retirement, a need is developing for new school nutrition leadership. Thornton expressed concern for retirement of program leadership, based on the significant numbers of directors between 51-65 years of age in study. Rushing, Nettles, and Johnson also found that 29.2% of school nutrition directors planned to retire within five years of their study published in 2009. As this age group continues to reach retirement age, there could be an increased demand for qualified leadership to replace them.

**Qualified Leadership**

Since the school meal program inception, the need for qualified leadership has been evident. RDs were actively involved in early meal program implementation, both in providing program supervision and in writing training books and manuals to assist others in establishing program standards. RDs can provide expertise important to sustaining and potentially improving school nutrition programs. Although there is limited research specific to school nutrition, it has been suggested RDs were better prepared to handle foodservice management responsibilities than non-RD counterparts in senior centers. The ten competencies (e.g. financial, human resource, menu and food production management) needed for successful school nutrition program management are strongly associated with the academic preparation in Accreditation Council for Education in
Nutrition and Dietetics (ACEND) accredited didactic programs for dietitians.\textsuperscript{21} ACEND accredited dietetic programs could prepare dietetic students for future school nutrition leadership positions.\textsuperscript{22}

**Registered Dietitian Job Satisfaction**

RDs job satisfaction is an important consideration when determining whether RDs find aspects of school nutrition leadership satisfying. Sauer, Canter, and Shanklin\textsuperscript{23} studied RDs’ satisfaction with specific management areas including financial and personnel duties. Three dietetic practice groups: Management of Food and Nutrition Systems, Clinical Nutrition Management, and School Nutrition Services ($n = 851$) were studied. Three satisfaction factors evident for management dietitians: the nature of the job, coworkers and supervision. The nature of the job or work had the greatest overall satisfaction level; this aspect included operational job components such as supervising employees and budgetary responsibilities which are also important in school nutrition leadership.

In addition to satisfaction, motivation is also important. Motivation is influenced by job satisfaction and dissatisfaction when applying research associated with Herzberg’s motivational theory.\textsuperscript{24} Employee job satisfaction resulted when motivational factors, such as opportunity for job growth, were presented. Understanding motivational aspects of current RDs in school nutrition, as well as senior dietetic students’ motivation to consider applying for a position in school nutrition may be beneficial in attracting future school nutrition.
Dietetic Students and Job Opportunities

When considering potential to work in school nutrition leadership positions, it is necessary for RDs to seek exposure to a variety of career opportunities and expectations. Puckett et al. provided Standards of Professional Performance for RDs in management, which identify specific competencies for RDs to gain and demonstrate management expertise. Arendt and Gregoire found dietetic students view themselves as leaders and additional leadership coursework would assist with student leadership skill development. Further application of RD leadership development associated with management competencies would possibly prepare RDs for school nutrition leadership roles. Providing opportunities within coursework for students to practice leadership skills through group activities may assist students develop these abilities. Examining motivational aspects and job related responsibilities influencing RDs currently in school nutrition leadership positions would provide a better understanding aspects impacting RDs’ consideration of this area.

No known studies have examined job responsibilities, job satisfaction, and career motivation for RDs working in school nutrition leadership nor the reasons why senior dietetic students may or may not pursue a career in school nutrition. This study examined responses between these two groups to statements related to job responsibilities and motivation, and the influence of job satisfaction. The reasons senior dietetic students consider school nutrition, as well as the perceived motivational aspects influencing some students to not consider this field are also examined.
METHODS

Sample

This study was conducted in eight states (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee) comprising the Southeast USDA region. This region was selected for the research due to the mixture of state credentialing standards, specifically five states maintain requirement credentials for school nutrition program and state directors. The online questionnaires were distributed to RDs and senior dietetic students. The current members of the School Nutrition Services Dietetic Practice Group (SNSDPG; n = 219), and the eight state agency directors in the Southeast USDA region were selected as the RD sample group. RD participants were asked to share the online questionnaire link with other RDs working in school nutrition leadership roles because not all RDs are members of the SNSDPG.

Requests were made to AND accredited dietetic programs (N = 45) in the same USDA region, 22 programs agreed to encourage participation of their senior dietetic students. For the 45 universities/colleges with AND accredited dietetic programs in the Southeast USDA region for the 2012-2013 academic year with 2,677 enrolled students, resulting in an estimated potential sample of 699 senior dietetic students for this region, assuming 25% of student enrollment were seniors.

Questionnaire Development and Content

An assessment of RD job responsibility, job satisfaction and career motivational aspects through a literature review was done in order to develop the questionnaire. The online RD questionnaire was developed with three sections. The first section consisted of 36 statements assessing job responsibilities, job satisfaction
and career motivation aspect, seven negatively phrased statements reverse coded.\textsuperscript{34} Selection scale response choices were provided on a five-point Likert-type scale ranging from 1 = strongly disagree to 5 = strongly agree. The second section contained 18 statements focused on RD satisfaction with motivational aspects and job responsibilities of their school nutrition position. The same five point Likert-type scale was provided for responses. Demographic information was requested with 21 questions in the third and final questionnaire section.\textsuperscript{35}

The senior dietetic student questionnaire followed a similar format to the RD questionnaire, with minor adaptations to allow for a student perspective. The first section evaluated participating student’s intention to apply for a school nutrition position. The second section assessed the student reasons they might not consider applying for a school nutrition. The third section consisted of ten questions requesting demographic information. Dillman et al.\textsuperscript{35} recommends demographic questions be placed toward the survey end to prevent participants from becoming disengaged before completing the questionnaire.

A panel of school nutrition experts outside the research region affirmed the face validity of both questionnaires, as recommended by Hardesty and Bearden.\textsuperscript{36} Prior to pilot testing, the questionnaires were also validated by five research committee members. Pilot testing was conducted with RD members of SNSDPG ($N = 10$) and senior dietetic students ($N = 19$) outside of the study region. Feedback from the pilot study was utilized to clarify “I do not” statements and add geographical availability of school nutrition jobs to both questionnaires in the selection scale statements.
The sponsoring Institutional Review Board (IRB) approved this study and a written informed consent was received from each participant (RDs and students) before completing the questionnaire. The IRB approval was shared with the 22 universities who agreed to participate. Additional review board approval was required at three universities and was received prior to any contact.

**Questionnaire Distribution**

The online RD questionnaire link administered through Qualtrics® was distributed in an email to the USDA Southeast region SNSDPG \(n = 219\) and each state agency director to share with non-SNSDPG members in their state. The student questionnaire online link was distributed to the participating didactic program university administrators \(n = 22\) to share with their senior dietetic students. Follow up email reminders were sent seven days after the initial distribution and seven days prior to the deadline requesting participation. To improve the response rate, an incentive of two $50 Visa gift cards through random drawing was offered to both questionnaire group participants (four $50 Visa gift cards total). Dillman, Smyth, and Christian\(^{35}\) recommended providing incentives and sending follow up reminders to increase response rates.

**Data Analysis**

Responses collected from RDs and student questionnaires were analyzed using the Statistical Package for Social Sciences (SPSS) version 19 and JMP version Pro 10. Reversed coding was used for responses on seven negatively phrased Likert-type selection scale statements prior to data analysis to compute overall mean scores. Cronbach’s alpha test was computed with the RD scale responses to determine reliability
The RD selection scale had a Cronbach’s alpha value equaling 0.80, indicating good reliability for the scale.\textsuperscript{37,38} The RD satisfaction scale had a Cronbach’s alpha value of 0.67, also demonstrating reasonable scale reliability.\textsuperscript{39,40} The student selection scale responses had a Cronbach’s alpha = 0.79 and this value indicates good reliability for the scale.\textsuperscript{37} The student scale evaluating reasons for not considering school nutrition positions had a Cronbach’s alpha = 0.88, also demonstrating good reliability.\textsuperscript{37} Descriptive statistics, including frequencies, mean scores for questionnaire items and standard deviations were conducted; student $t$ tests were conducted for comparison on the RD and student Likert-type selection scale responses (Table 2). Reasons students might not consider applying for school nutrition positions were also examined with descriptive statistics (Table 3).

**RESULTS**

**Demographic Comparison**

A total of 158 RDs and 129 senior dietetic students participated in this study. The response rate for the RD group was not known as RDs were asked to share the questionnaire with other RDs in school nutrition leadership. The response rate was also difficult to calculate for students. There were approximately 1891 dietetic students enrolled in the 22 participating AND accredited programs.\textsuperscript{39} Assuming one quarter of the dietetic students were seniors and all the programs shared the questionnaire link with every student, there would have been approximately 473 senior students, but it is unknown if the questionnaire was shared with all seniors.

The demographic breakdown for both sample groups is provided in Table 1. A total of 3\% of RD participants ($n = 4$) were between the ages of 21 and 25 years old,
while 65% of the student participants \((n = 66)\) were in this same age group. These results represent the usual age range for senior college age students. The RD ethnic participant breakdown was white (81%), African American (11%), and Hispanic (3%), while the student ethnic breakdown was comparable for white (79%), but slightly less for African American (4%), and more for Hispanic participants (6%). RD participants were predominantly female (96%), however, the student group had a greater representation of male participants (12%).

The states with the most RD participants were from Georgia (34%) and Florida (25%), while Florida (33%) and Tennessee (22%) had the highest student participation. South Carolina (3%) had the lowest participant percentage for the RDs and Mississippi (2%) had the lowest student percentage.

**RD and Student Comparisons of Selection Consideration**

Table 2 provides the results for mean scores and the standard deviation of the means for the RD selection scale. Independent samples \(t\) test was conducted with a \(p\) value < 0.05 was used for analysis. Developing foodservice leadership skills \((p < 0.0001)\), and managing a school nutrition operation/program \((p < 0.0001)\) were significantly different for responses to the job responsibility statements with higher rating for RDs. Clinical dietetic knowledge \((p < 0.01)\) responses were significantly different for this job responsibility statement with higher student rating. Job satisfaction aspects such as work schedule \((p < 0.0001)\), positive financial outcomes \((p < 0.0001)\), customer satisfaction \((p < 0.0001)\), and having a challenging situation \((p < 0.0001)\) were significantly different between RD and students’ responses to four statements, RDs indicating higher rating. The statement consider job not boring \((p < 0.0001)\) was a job satisfaction aspect with
significant responses difference between the RD and student groups, with greater student rating. There were eleven job satisfaction statements that demonstrated a significant difference between the two groups (Table 2). Several career motivational aspects \((n = 10)\) were significantly different between the two groups’ responses. The significant motivational aspects between the groups included the \textit{job being interesting}, \textit{influence others}, \textit{make a difference in the world}, and \textit{preventing childhood obesity}. These motivational statements were all rated higher by RD participants. Other significant aspects were the \textit{environment providing promotional opportunities}, and \textit{working with others} and \textit{not requiring constant praise/feedback from my boss} demonstrating higher RD rating. \textit{Being challenging}, and \textit{not requiring constant praise/feedback from my boss} had significant differences, with students selection having a higher rating compared to RDs.

The comparison results (Table 2) provide mean scores for student selection responses associated with job responsibility, job satisfaction, and motivational aspects of school nutrition. \textit{Impact others’ health and well-being} was the item with the highest level of agreement \((M = 4.42; SD = 0.63)\) for students considering school nutrition. \textit{Influence others} \((M = 4.37; SD = 0.65)\) had the second highest mean score. \textit{Make a difference in the world} \((M = 4.33; SD = 0.69)\), \textit{have a positive impact on preventing childhood obesity} \((M = 4.32; SD = 0.76)\) \textit{achieved a positive outcome} \((M = 4.27; SD = 0.71)\) and \textit{have a good relationship with coworkers} \((M = 4.27; SD = 0.70)\) were also aspects appearing to that impact student consideration of the school nutrition profession.

The reasons students would not consider school nutrition (Table 3) were explored from student questionnaire responses. \textit{Rather develop my clinical dietetic knowledge} \((M = 3.51; SD = 1.10)\) had the highest mean score, \textit{prevent development of clinical skills} \((M
type of job does not interest me (M = 3.24; SD = 1.03) and not want to be called a ‘lunch lady’ (M = 3.16; SD = 1.30) next highest mean scores. These ratings of agreement indicated these aspects were important reasons for students not selecting school nutrition. Consider working with children dissatisfying (M = 2.03; SD = 0.94) and not feel satisfied when dealing with challenging situations (M = 2.06; SD = 0.76) were least likely to deter students.

DISCUSSION

Demographic data was similar to the demographic data from the Compensation and Benefits Survey 2013 conducted by Rogers among all RDs. Rogers’ results suggest 95% of dietetic practitioners were females, which is similar to the female RD respondents (96%) in this study. Rogers also reported, 29% of the respondents were 55 years or older, 26% were under 35 years old and 88% were white. Similarly this research found 34% of RD participants were age 55 years or older, 26% were under 35 years old and 81% were white, demonstrating a bit more minority diversity.

The student demographic breakdown of female (88%) and male (12%), was similar to recent research with junior (n = 98) and senior dietetic students (n = 185) having a demographic breakdown of female (87.6%) and male (12.4%). However the ethnic breakdown for this study from previous work with 79% of students indicating white ethnicity. McArthur, Greathouse, Smith, and Holbert reported 92.5% of their participants, from seven universities located in the Northeast, Midwest and Southeast regions, indicated white ethnicity. McArthur et al. participants had a mean age of 23 + 4.0 years, while 65% of students in this study indicated the age range of 21-25 years. The McArthur study demonstrates results with college upper classmen being over 22 years
old, possibly indicating that students are staying enrolled in college for more than four years.

The purpose of this study was to compare RD and student responses for motivational aspects and job responsibilities in school nutrition. The responses given by RDs to statements on the selection scale compared to students’ responses revealed a significant difference on several job responsibility statements, such as *foodservice leadership skills*, *clinical dietetic knowledge*, and *enjoying school nutrition operation management*. Compared to RD responses students were not as interested in this type of job ($M = 3.12; SD = 1.18$), except when considering *developing their knowledge in addition to clinical dietetic knowledge* ($M = 4.03; SD = 0.95$).

*Satisfaction with work schedules, customer satisfaction, having a challenging position and focus on customer satisfaction*, as well as *achieve a positive financial outcome* demonstrated the importance of how these aspects impacted job satisfaction for these two groups, supporting research conducted by Sauer et al.$^{23}$ The importance of these satisfaction aspects are supported by other research studies demonstrating the importance of having a challenging job with the developing workforce.$^{42}$ Responses to several motivational aspects including *work in an environment that provides promotion opportunities, working with others, make a difference in the world and preventing child obesity* were significant and also relate to generational traits seen in the developing workforce.$^{43,44,45}$ *Make a difference in the world* and the desire to *prevent childhood obesity* are motivational aspects that match the desire to help others and overcome adversity possessed by most Millennial generation members (born between 1980-1999).$^{46,47}$ SNA should use these motivational aspects to assist with presenting school
nutrition as a career option. School nutrition could provide the opportunity for students to achieve this impact ultimately provide a satisfying career option. Motivational aspects can influence satisfaction and dissatisfaction, as discussed in Hertzberg’s two factor theory. Applying satisfaction and motivational aspects such as wanting to make a difference in the world, and promoting how school nutrition leadership allows individuals to work with others for a purpose of helping others by preventing childhood obesity as identified in this study may assist with recruitment of Millennial generational dietetic student group to school nutrition.

Determining the reasons why senior dietetic students consider school nutrition and the motivational aspects influencing them not to consider this career choice were also examined. Results show primary reasons for consideration were associated with impacting other’s well-being and childhood obesity ($M = 4.32; SD = 0.76$), influencing others ($M = 4.37; SD = 0.65$), and making a difference in the world ($M = 4.33; SD = 0.69$). The reasons identified by students as reasons not to select school nutrition included a desire to develop my clinical knowledge ($M = 3.52; SD = 1.10$) and skills ($M = 3.36; SD = 1.11$), type of job does not interest me ($M = 3.24; SD = 1.03$) and not want to be called a “lunch lady” ($M = 3.16; SD = 1.30$), demonstrating this student group was interested in more clinically focused career option than school nutrition. The one aspect not evaluated in this study was the understanding level for the school nutrition leadership position’s job responsibilities as presented by Nettles et al. the senior dietetic students possessed. It is possible that not understanding specific job responsibilities in school nutrition due to public stereotypes of the “lunch lady” image may have influenced their responses on these statements. Exposing students to current RD school nutrition district
level professionals would also provide a realistic picture of the profession. SNA offers an internship program specifically for the purpose of providing training to assist with recruitment of district level supervisory school nutrition positions. A bachelor’s degree in dietetics meets intern program requirements. Marketing this internship opportunity to graduating dietetic students would help increase the number of qualified applicants and fill the leadership void that is occurring due to retiring school nutrition leadership. This research has a few limitations, beginning with the Southeast USDA region being the research focus, where five states have high educational requirements for the district level leadership. This limitation may make it difficult to generalize the results for other USDA regions. Expanding this research to other USDA regions, with other accredited didactic programs in those regions and additional RDs, may be beneficial to getting broader responses. Additional research could examine the exposure students have to school nutrition in their coursework and whether dietetic students understand the job responsibilities associated with school nutrition leadership.

CONCLUSION

The importance of having qualified leadership for school nutrition programs has been identified. This leadership must understand the many responsibilities and challenges, along with specific knowledge and skills, required to provide healthy meals to school age children. RDs possess skills and knowledge necessary to provide this leadership. These research results may assist with attracting dietetic students to consider school nutrition as a possible dietetic career option, especially if the motivational aspects such as having the opportunity to make a difference in the world and to help other people are presented as program attributes and responsibilities, meeting generational
expectations for future RDs. Reaching more qualified RDs to fill the upcoming vacancies within qualified school nutrition leadership will be necessary to continue to maintain and improve program standards in our nation’s school nutrition programs. As current school nutrition leadership, who possess considerable program knowledge and experience, retire, the importance of replacing this group with well-qualified leadership will be essential to future program outcomes.

REFERENCES


Table 5.1. Demographics of RD sample (n = 145-150)  Demographics of student sample (n = 101)

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<td>Foodservice admin</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other (e.g. Consultant, Wellness specialist)</td>
<td>22</td>
<td>15</td>
<td>Other</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>School Nutrition Coordinator</td>
<td>20</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Nutrition Supervisor</td>
<td>13</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5.1. Demographics of RD sample \((n = 145-150)\) cont. Demographics of student sample \((n = 101)\) cont.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>(n)</th>
<th>%</th>
<th>Characteristic</th>
<th>(n)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Years worked in School Nutrition</strong></td>
<td></td>
<td></td>
<td><strong>Anticipated graduation year</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-1</td>
<td>16</td>
<td>11</td>
<td>2014</td>
<td>96</td>
<td>95</td>
</tr>
<tr>
<td>2-5</td>
<td>34</td>
<td>23</td>
<td>2015 or later</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>6-10</td>
<td>34</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-15</td>
<td>22</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-20</td>
<td>21</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20+</td>
<td>22</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>State where employed</strong></td>
<td></td>
<td></td>
<td><strong>State where earning degree</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alabama</td>
<td>10</td>
<td>7</td>
<td>Alabama</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Florida</td>
<td>36</td>
<td>25</td>
<td>Florida</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>Georgia</td>
<td>50</td>
<td>34</td>
<td>Georgia</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Kentucky</td>
<td>8</td>
<td>6</td>
<td>Kentucky</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Mississippi</td>
<td>6</td>
<td>4</td>
<td>Mississippi</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>North Carolina</td>
<td>18</td>
<td>12</td>
<td>North Carolina</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>South Carolina</td>
<td>4</td>
<td>3</td>
<td>South Carolina</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Tennessee</td>
<td>13</td>
<td>9</td>
<td>Tennessee</td>
<td>22</td>
<td>22</td>
</tr>
</tbody>
</table>
Table 5.2. Results of comparison between senior dietetic students and RDs reasons for selecting school nutrition leadership position

<table>
<thead>
<tr>
<th>Selection Statements</th>
<th>RD (n = 150-158)</th>
<th>Student (n = 106-129)</th>
<th>p value&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean ± standard deviation</td>
<td>mean ± standard deviation</td>
<td></td>
</tr>
<tr>
<td>Develop my professional skills</td>
<td>4.04 ± 0.80</td>
<td>3.99 ± 0.90</td>
<td>&lt; 0.8868</td>
</tr>
<tr>
<td>Develop knowledge in addition to clinical dietetic knowledge</td>
<td>3.63 ± 1.08</td>
<td>4.03 ± 0.95</td>
<td>&lt; 0.0105&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Help me continue to develop foodservice leadership skills</td>
<td>3.95 ± 0.90</td>
<td>3.73 ± 0.95</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Interested in this type of job</td>
<td>4.47 ± 0.73</td>
<td>3.12 ± 1.18</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Work schedule appealing to me because of the 8am - 5pm, Monday through Friday schedule</td>
<td>4.26 ± 1.02</td>
<td>3.98 ± 1.07</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Wanted to work in this position even though the location was inconvenient to my home&lt;sup&gt;b&lt;/sup&gt;</td>
<td>3.27 ± 1.32</td>
<td>3.43 ± 0.94</td>
<td>&lt; 0.0056&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Utilize my nutrition training</td>
<td>4.29 ± 0.69</td>
<td>4.13 ± 0.83</td>
<td>&lt; 0.2124</td>
</tr>
<tr>
<td>Satisfied when I focus on customer satisfaction</td>
<td>4.22 ± 0.76</td>
<td>4.02 ± 0.84</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Felt anxiety when I dealt with challenging situations&lt;sup&gt;b&lt;/sup&gt;</td>
<td>3.55 ± 1.17</td>
<td>3.31 ± 1.08</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Be mentored by other leaders in school nutrition</td>
<td>3.50 ± 1.07</td>
<td>3.55 ± 0.93</td>
<td>&lt; 0.0663</td>
</tr>
<tr>
<td>Position would allow me to develop professional leadership skills</td>
<td>4.17 ± 0.78</td>
<td>4.02 ± 0.80</td>
<td>&lt; 0.7428</td>
</tr>
<tr>
<td>Be valued by my coworkers</td>
<td>3.72 ± 0.93</td>
<td>4.08 ± 0.83</td>
<td>&lt; 0.0038&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Work in an environment that provides promotion opportunities</td>
<td>3.89 ± 1.00</td>
<td>4.14 ± 0.79</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Did not want to be professionally challenged&lt;sup&gt;b&lt;/sup&gt;</td>
<td>4.38 ± 0.93</td>
<td>4.09 ± 0.97</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Have good relationships with my coworkers</td>
<td>3.97 ± 0.92</td>
<td>4.27 ± 0.70</td>
<td>&lt; 0.9217</td>
</tr>
<tr>
<td>Did not consider this type of job boring&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1.62 ± 0.71</td>
<td>2.50 ± 0.97</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Wanted my coworkers to be understanding</td>
<td>3.54 ± 0.89</td>
<td>4.00 ± 0.74</td>
<td>&lt; 0.0008&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Not want to engage or work with other people&lt;sup&gt;b&lt;/sup&gt;</td>
<td>4.55 ± 0.68</td>
<td>4.24 ± 0.83</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Would enjoy managing a school nutrition program</td>
<td>4.26 ± 0.73</td>
<td>3.36 ± 1.07</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Feel that I achieved a positive outcome</td>
<td>4.53 ± 0.64</td>
<td>4.27 ± 0.71</td>
<td>&lt; 0.0075&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Influence others</td>
<td>4.38 ± 0.75</td>
<td>4.37 ± 0.65</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Not consider the amount of pay and benefits as the primary decision factor&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.98 ± 1.17</td>
<td>2.86 ± 1.01</td>
<td>&lt; 0.2400</td>
</tr>
<tr>
<td>Wanted to provide food safety training</td>
<td>3.37 ± 0.89</td>
<td>3.31 ± 1.06</td>
<td>&lt; 0.6018</td>
</tr>
</tbody>
</table>
Table 5.2. Results of comparison between senior dietetic students and RDs reasons for selecting school nutrition leadership position continued

<table>
<thead>
<tr>
<th>Selection Statements</th>
<th>RD (n = 150-158)</th>
<th>Student (n = 106-129)</th>
<th>p value&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would be satisfied in a leadership position in school nutrition</td>
<td>3.99 ± 0.80</td>
<td>3.33 ± 1.06</td>
<td>&lt; 0.0025&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Have a structured work schedule</td>
<td>3.46 ± 1.03</td>
<td>3.98 ± 0.76</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Make a difference in the world</td>
<td>4.39 ± 0.68</td>
<td>4.33 ± 0.69</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Enjoyed managing a school nutrition operation</td>
<td>3.99 ± 0.81</td>
<td>3.27 ± 1.05</td>
<td>&lt; 0.0070&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Wanted a position that would impact others' health and well-being</td>
<td>4.45 ± 0.70</td>
<td>4.42 ± 0.63</td>
<td>&lt; 0.4720</td>
</tr>
<tr>
<td>Have a positive impact on preventing childhood obesity by providing nutritious school meals</td>
<td>4.49 ± 0.65</td>
<td>4.32 ± 0.76</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Discovered this job opportunity in my geographical location</td>
<td>3.84 ± 1.07</td>
<td>3.78 ± 0.88</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Not want a structured/routine work environment&lt;sup&gt;b&lt;/sup&gt;</td>
<td>3.13 ± 1.19</td>
<td>3.73 ± 0.96</td>
<td>&lt; 0.2811</td>
</tr>
<tr>
<td>Enjoyed working with others to achieve results</td>
<td>4.30 ± 0.61</td>
<td>4.18 ± 0.63</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Not require constant praise or feedback for work efforts from my boss&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.29 ± 0.84</td>
<td>2.38 ± 0.84</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Enjoy working to achieve positive financial results</td>
<td>4.05 ± 0.74</td>
<td>3.54 ± 0.92</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Could only find this job available in my geographical location</td>
<td>2.07 ± 1.04</td>
<td>2.83 ± 0.90</td>
<td>&lt; 0.0001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup>p values reflect the comparison between student and RD responses with a t test for normally distributed data.

<sup>b</sup>Responses were reverse coded prior to descriptive and t test analysis conducted.

<sup>c</sup>p value < 0.05 is statistically significant.

Chronbach α = 0.80 for entire RD scale.

Chronbach α = 0.79 for entire student scale.

Responses given on 5 point Likert-scale (1 = strongly disagree to 5 = strongly agree).
Table 5.3. Mean scores for why students would not pursue school nutrition leadership positions \((n = 100-101)\)

<table>
<thead>
<tr>
<th>Statement</th>
<th>(M)</th>
<th>(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>...rather develop my clinical dietetics knowledge</td>
<td>3.51</td>
<td>1.10</td>
</tr>
<tr>
<td>...allow not to develop clinical skills</td>
<td>3.36</td>
<td>1.11</td>
</tr>
<tr>
<td>...type of job does not interest me</td>
<td>3.24</td>
<td>1.03</td>
</tr>
<tr>
<td>...not want to be called a ‘lunch lady’</td>
<td>3.16</td>
<td>1.30</td>
</tr>
<tr>
<td>...not want to work in a school environment</td>
<td>3.08</td>
<td>1.06</td>
</tr>
<tr>
<td>...amount of pay and benefits unappealing</td>
<td>2.92</td>
<td>0.90</td>
</tr>
<tr>
<td>...not enjoy this type of challenge</td>
<td>2.87</td>
<td>0.97</td>
</tr>
<tr>
<td>...not enjoy managing a school nutrition program</td>
<td>2.82</td>
<td>0.99</td>
</tr>
<tr>
<td>...not have promotion opportunities</td>
<td>2.77</td>
<td>0.81</td>
</tr>
<tr>
<td>...type of job would be boring</td>
<td>2.72</td>
<td>1.00</td>
</tr>
<tr>
<td>...consider budget responsibility intimidating</td>
<td>2.66</td>
<td>1.06</td>
</tr>
<tr>
<td>...work schedule has limited flexibility</td>
<td>2.65</td>
<td>1.02</td>
</tr>
<tr>
<td>...work location not convenient to where I live</td>
<td>2.64</td>
<td>0.76</td>
</tr>
<tr>
<td>...not enjoy managing personnel</td>
<td>2.57</td>
<td>0.97</td>
</tr>
<tr>
<td>...not consider position where I could utilize dietetics training</td>
<td>2.52</td>
<td>1.00</td>
</tr>
<tr>
<td>...not be satisfying to focus on customer satisfaction</td>
<td>2.35</td>
<td>0.89</td>
</tr>
<tr>
<td>...not want to learn about school nutrition</td>
<td>2.29</td>
<td>0.82</td>
</tr>
<tr>
<td>...not be able to develop professional leadership skills</td>
<td>2.08</td>
<td>0.74</td>
</tr>
<tr>
<td>...not feel satisfaction dealing with challenging situations</td>
<td>2.06</td>
<td>0.76</td>
</tr>
<tr>
<td>...consider working with children dissatisfying</td>
<td>2.03</td>
<td>0.94</td>
</tr>
</tbody>
</table>

Chronbach \(\alpha = 0.88\) for entire student not selecting school nutrition scale.

Responses given on 5 point Likert-scale (1 = strongly disagree to 5 = strongly agree).

Overall Mean = 2.72.
CHAPTER 6: GENERAL CONCLUSION

The purpose of this study was to evaluate motivational aspects and job responsibilities which influenced RDs currently working in school nutrition leadership roles and senior dietetic students’ decisions to pursue a school nutrition position. The motivational aspects influencing RDs to select school nutrition, as well as the satisfaction RDs associate with school nutrition job responsibilities were examined. An assessment of the reasons senior dietetic students both selected and did not select school nutrition as a career option was also completed. A comparison between current RD school nutrition leaders and senior dietetic students for the motivational aspects and the job responsibilities was conducted with both groups’ questionnaire responses. Finally, the demographic breakdown for the RDs and senior dietetic student participants was also completed. This chapter provides the summary of the results, study limitations and future research recommendations.

Summary of Results

Two online questionnaires were developed and the questionnaire link was distributed to all 219 SNSDPG members in the eight state Southeast USDA region and to 22 AND accredited university/colleges dietetic administrators in the same region. There were a total of 158 RD and 129 senior dietetic student participants. There were 45% of the RD participants 51 years old or older, similar to the demographic trend seen with school nutrition directors by Thornton (2007) and with current registered dietitians (Rogers, 2014). Females (96%) were the majority of RD participants. The school nutrition director job title (39%) was the largest percentage of RD group participants and 57% of all RD participants had worked in school nutrition ten years or less. There were 59% of the questionnaire participants from two of the survey states, Florida (25%) and
Georgia (34%). The majority of the student group was between 18-25 years old (72%) and the gender breakdown was male (12%) and female (88%). Florida (32%) and Tennessee (24%) were the largest state groups where the student participants were earning their degrees.

The reliability and internal consistency of the questionnaire was evaluated utilizing Cronbach’s alpha resulting in values of 0.80 for the RD selection scale, demonstrating good reliability (Cronbach, 1951; Santos, 1999). The computation for the Cronbach alpha value (0.67) for the satisfaction scale was also acceptable, considering fewer statements were included in the satisfaction scale potentially influencing the scale reliability (Gliem & Gliem, 2003; Tavakol & Dennick, 2011). The student selection scale demonstrated good reliability and consistency based on Cronbach’s alpha = 0.79. The Cronbach’s alpha = 0.88 for the scale identifying motivational aspects influencing students to not select school nutrition as a profession scale demonstrated good reliability also (Cronbach, 1951; Santos, 1999).

There were six research objectives which the research was conducted to examine. Each research objective is provided, with a discussion of the primary findings provided following each objective.

1. **Identify the perceived motivational aspects that prompted registered dietitians to select school nutrition leadership for their current career occupation.**

   Descriptive statistical analysis were calculated and then comparisons were made between the mean score responses and standard deviations to determine the statements that influenced RDs to select school nutrition leadership. See Table 4.2. *Not want to engage/work with people* had the highest mean score value (*M* = 4.55; *SD* = 0.68),
followed by *achieved a positive outcome* \((M = 4.53; \ SD = 0.64)\) and *impact on preventing childhood obesity* \((M = 4.49; \ SD = 0.65)\). *Not consider this type of job boring* \((M = 1.62; \ SD = 0.71)\) had the lowest mean score values. See Table 5.2.

Principal component analysis was then conducted to determine the statements relating to RD school nutrition selection. See Table 4.2 for PCA results. The KMO for the RD selection statements was 0.763 confirming that PCA was an appropriate method for data analysis (Principal Component Analysis, 2013) and the statements with matrix values larger than 0.40 were for inclusion of selection scale statements (Guadagnoli & Velicer, 1988). Two components were identified, the first labeled as “employee opportunities” and the second labeled “employee outcomes” representing the selection statements identifying the same constructs. There were a total of 14 statements that loaded on the first component. *Influence others* \((0.750)\) had the highest loading score and *positive outcome* \((0.713)\) had the second highest loading under “employee opportunities.” The “employee outcomes” component had ten statements that loaded onto it and *focus on customer satisfaction* \((M = 4.22; \ SD = 0.76)\) had the highest mean score but a low component loading (.435). *Be valued* by coworkers \((0.796)\) had the highest loading score \((M = 3.72; \ SD = 0.93)\) and *relationship* with coworker \((0.686)\) had the second highest loading score for this component \((M = 3.97; \ SD = 0.76)\).

2. **Identify the job related responsibilities registered dietitians find satisfying in school nutrition leadership.**

Descriptive analysis was also conducted with these responses producing mean scores and standard deviation. PCA was conducted and the KMO for this RD satisfaction
scale was 0.722, demonstrating PCA was an appropriate method for data analysis. Two principal components resulted from this analysis. See Table 4.3.

The first component labeled as “job attributes” had eight statements loaded on to it associated with security, stability, program requirements and satisfaction. Job security (0.757) was the statement with the highest loading value with the first component, but had a mean score value of 3.83 (SD = 0.94). However enjoy working in school nutrition leadership had the highest mean score for this group (M = 4.44; SD = 0.69). “Job preference” was the label given to the second component, which included statements such as utilizing skills, independence and challenges. Employee training (0.538) was the statement with the highest loading and mean score (M = 4.56; SD = 0.53) under this component. The satisfaction scale responses demonstrated how RD satisfaction is influenced by providing employee training, utilizing dietetic skills and working independently, also job security and stability in the work environment impact RD satisfaction.

3. Determine the reasons why senior dietetic student consider school nutrition as a profession.

See Table 5.2. Descriptive statistical analysis provided means score results for the selection statements. Wanted a position that would impact others’ health and well-being (M = 4.42; SD = 0.63) had the highest mean score for the students, influence others (M = 4.37; SD = 0.65) had the second highest mean score, and make a difference in the world (M = 4.33; SD = 0.69) was the third highest mean score for the statements. These three statements represented aspects with the highest level of influence on student selecting school nutrition based on these results. Achieved a positive outcome (M = 4.27; SD =
0.71) and have good relationships with my coworkers ($M = 4.27; SD = 0.70$) also demonstrated a strong impact on student school nutrition consideration.

4. Identify perceived motivational aspects influencing current senior dietetic students to not consider school nutrition as a profession.

The Likert-type scale statements examining the reasons dietetic students do not consider school nutrition positions was used to determine these motivational aspects. The descriptive statistical data analysis provided mean score and standard deviation values for each statement. See Table 5.3. The statement *rather develop my clinical dietetics knowledge* ($M = 3.51; SD = 1.10$) had the highest mean score for this scale. Next *allow not develop clinical skills* ($M = 3.36; SD = 1.11$) had the second highest mean score. These two statements having the highest mean score values demonstrated the importance clinical skills and knowledge development was to this student group, and the indication that considered that it would not be possible to develop those skills working in school nutrition. The third highest mean score was associated with the statement *not want to be called a “lunch lady”* ($M = 3.16; SD = 1.30$). The statements resulting in the two lowest mean scores were *consider working with children dissatisfying* ($M = 2.03; SD = 0.94$) and *not feel satisfaction dealing with challenging situations* ($M = 2.06; SD = 0.76$).

5. Compare survey responses by registered dietitians in school nutrition leadership with those of senior dietetic students on motivational aspects.

The $t$ test analysis was conducted to compare the responses provided by RDs and students on motivational aspects. See Table 5.2. A $p$ value $< 0.05$ for $t$ testing between the RD and student responses was used. The motivational aspects that produced significantly different results were for *interested in this type of job* ($p < 0.0001$), *influence*
others \(p < 0.0001\), *make a difference in the world* \(p < 0.0001\), and *preventing childhood obesity* \(p < 0.0001\). These four statements all had higher mean score values for the RDs compared to the student mean scores, with the largest difference between the two groups being demonstrated with *interested in this type of job*.

The RD mean score was 4.47 \(SD = 0.73\) for *interested in this type of job* and the student mean score was 3.12 \(SD = 1.18\). The *environment that provides promotional opportunities* \(p < 0.0001\), *be professionally challenged* \(p < 0.0001\), *engage or work with others* \(p < 0.0001\), and *require constant praise/feedback from my boss* \(p < 0.0001\) were also significantly different for \(t\) test comparison. *Work in an environment that provides promotion opportunities* \(M = 4.14; SD = 0.79\) and *not require constant praise or feedback for work efforts from my boss* \(M = 2.38; SD = 0.84\) had higher mean scores for the student participants indicating that these two statements reflected these motivational aspects were more important to the students than to the RDs working in school nutrition leadership. Eleven of the motivational statements were significantly different between the two groups.

6. **Compare survey responses by registered dietitians in school nutrition leadership with those of senior dietetic students on job responsibilities.**

The responses for both RDs and students on the selection scale for job responsibilities were compared using a \(t\) test analysis. There were eight statements measuring job responsibilities and only four of those statements demonstrated a significant difference between the RD and student responses. *Develop foodservice leadership skills, develop clinical dietetic knowledge, enjoyed managing a school nutrition program, and enjoy managing a school nutrition operation* were the significant
Developing foodservice leadership skills ($M = 3.95; SD = 0.73$) and enjoy managing a school nutrition program ($M = 4.26; SD = 0.73$) had higher RD mean scores compared to the student mean scores on these statements. Developing clinical dietetic knowledge ($M = 4.03; SD = 0.95$) had a larger mean score for students. This statement corresponds with the student response results for the motivational aspects influencing students to not consider school nutrition. From these results it appears that concern for developing clinical knowledge and skills had the most significant influence on this group of students’ decision to pursue a school nutrition position. Additional research to determine the understanding dietetic students have for the job responsibilities associated with school nutrition leadership may provide more perspective on the students’ decision and overall awareness of school nutrition.

**Conclusions**

Based on this work, concern for finding qualified individuals to fill vacancies developing with current school nutrition program retirement is apparent. As these qualified leaders retire, leaving with valuable program knowledge and experience, the future of school nutrition leadership could be greatly impacted. When considering increasing requirements for improved nutritional meal standards, needs to provide therapeutic student diets and emphasis on establishing healthier school environments, it is evident that the responsibilities and demands for school nutrition program leadership are significant. The future of the national school nutrition program requires knowledgeable and highly skilled individuals to provide necessary leadership to meet these demands. RDs are capable and well qualified to successfully meet these challenges.
Encouraging young RDs to consider this important career opportunity will provide a ready supply of future school nutrition leaders. Accurately presenting career motivational aspects and job responsibilities identified in this study for school nutrition leadership through dietetic coursework would allow students to realistically consider this option as an appropriate application of dietetic skills. Continued efforts to market school nutrition leadership through internship and RD mentoring opportunities should result in dietetic students seriously considering school nutrition leadership as a valuable and rewarding career option, ensuring continuing health benefits for our nation’s school age population.

**Limitations of the Study**

A few limitations were recognized with this study. The questionnaires were distributed to RDs and senior dietetic students in the Southeast USDA region, just one of the eight state regions. The results may not be generalized to all the USDA regions, especially because the Southeast USDA region contains five states with higher educational requirements for school nutrition staff possibly influencing response selection. Conducting additional research in the other USDA regions with other AND accredited universities may be beneficial in receiving diverse responses. The dependency upon busy dietetic administrators (n = 22) to distribute the questionnaire link to senior dietetic students may have also impacted the number of student participants. Direct questionnaire distribution may be beneficial in increasing student responses.

**Recommendations for Future Research**

The expansion of this study to include other USDA regions, both for the RD and the dietetic student groups, would provide a larger sample to examine additional responses for the questionnaires. It would be beneficial to compare the results of this
study with other USDA regions, especially when considering the current school nutrition leadership educational requirements for states in the other regions. The influence of those educational requirements and whether or not those requirements impact the responses provided from the RD participants would be beneficial to examine.

Increasing the student responses for the Southeast USDA region by expanding the number of AND accredited universities/colleges participating in the study and reaching a larger sample of senior dietetic participants would enhance the research results for this area. Expanding the questionnaire student participation to additional universities in other USDA regions would also be a meaningful comparison for a national perspective on school nutrition with dietetic students. Certain regions and/or universities may favorably present school nutrition leadership in their didactic programs. Additional research with dietetic students to determine their understanding of the school nutrition leadership job responsibilities may be beneficial to examine, especially to further evaluate student awareness and understanding of this career option.

**Implications**

The results of this study provide evidence of the motivational aspects that influenced RDs to select a position in school nutrition leadership. First, the application of this information may be beneficial for school districts to apply for recruitment of RDs as qualified program leadership, especially as current school nutrition leadership retires and program requirements advance. Second, the aspects this research identified as influencing RD satisfaction would also assist with future leadership recruitment and retention, especially when considering how it would appeal to Millennial generational work expectations and goals.
Third, the dietetic student results identifying the reasons school nutrition is and is not considered as a RD career option would be beneficial for educators to utilize when educating their students about leadership opportunities within dietetics. Presenting accurate representation of this career option in coursework and dietetic internship opportunities would potentially expand dietetic students’ professional opportunities. If current dietetic students are presented with the job responsibilities associated with school nutrition leadership and the application that their education prepares them to be successful in this career, more student dietitians may consider school nutrition leadership as a good career opportunity after graduation.

References


Gliem, J., & Gliem, R. (2003, October). Calculating, interpreting, and reporting Cronbach’s alpha reliability coefficient for Likert-type scales. Paper presented at the Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education, The Ohio State University, Columbus, OH.


APPENDIX A. HUMAN SUBJECTS APPROVAL FORM

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Date: 8/27/2013

To: Linette Dodson
7 Brandy Court
Carrollton, GA 30117

From: Office for Responsible Research

Title: Registered Dietitians in School Nutrition Leadership and Dietetic Students' Consideration of School Nutrition

IRB ID: 13-343

Study Review Date: 8/26/2013

The project referenced above has been declared exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b) because it meets the following federal requirements for exemption:

- (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey or interview procedures with adults or observation of public behavior where
  - Information obtained is recorded in such a manner that human subjects cannot be identified directly or through identifiers linked to the subjects; or
  - Any disclosure of the human subjects' responses outside the research could not reasonably place the subject at risk of criminal or civil liability or be damaging to their financial standing, employability, or reputation.

The determination of exemption means that:

- You do not need to submit an application for annual continuing review.

- You must carry out the research as described in the IRB application. Review by IRB staff is required prior to implementing modifications that may change the exempt status of the research. In general, review is required for any modifications to the research procedures (e.g., method of data collection, nature or scope of information to be collected, changes in confidentiality measures, etc.), modifications that result in the inclusion of participants from vulnerable populations, and/or any change that may increase the risk or discomfort to participants. Changes to key personnel must also be approved. The purpose of review is to determine if the project still meets the federal criteria for exemption.

Non-exempt research is subject to many regulatory requirements that must be addressed prior to implementation of the study. Conducting non-exempt research without IRB review and approval may constitute non-compliance with federal regulations and/or academic misconduct according to ISU policy.

Detailed information about requirements for submission of modifications can be found on the Exempt Study Modification Form. A Personnel Change Form may be submitted when the only modification involves changes in study staff. If it is determined that exemption is no longer warranted, then an Application for Approval of Research Involving Humans Form will need to be submitted and approved before proceeding with data collection.

Please note that you must submit all research involving human participants for review. Only the IRB or designees may make the determination of exemption, even if you conduct a study in the future that is exactly like this study.

Please be aware that approval from other entities may also be needed. For example, access to data from private records (e.g., student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. An IRB determination of exemption in no way implies or guarantees that permission from these other entities will be granted.
Please don't hesitate to contact us if you have questions or concerns at 515-294-4566 or IRB@iastate.edu.
Informed Consent

**Title of Study:** Registered dietitians in school nutrition leadership and dietetic students’ consideration of school nutrition.

**Investigators:** Linette Dodson and Dr. Susan Arendt

This is a research study. This document has information to help you decide whether or not you wish to participate. Research studies include only people who choose to take part—your participation is completely voluntary. You are being asked to take part in this study because you are a registered dietitian working in a school nutrition leadership role in the Southeastern USDA region. The purpose of this study is to examine the aspects of job satisfaction registered dietitians have in school nutrition and the aspects influencing registered dietitians to pursue a position in school nutrition leadership.

If you agree to participate; you will be requested to respond to a three part online survey. At the end of the survey, you will be asked to submit your name and email address if you would like to be included in a random drawing for two $50 Visa gift cards. This information will only be used for the random drawing. Odds of winning are associated with the number of surveys completed and is anticipated to be approximately 1 in 150. The names and email addresses will be removed from the survey responses prior to releasing the data to the principal investigators and this information will be retained in a separate file by the Office of Education and Educational Technology (ODEET). ODEET provides technological support for distance instructors and students with research. The contact information will be destroyed when the random drawing is complete. You are able to withdraw from the survey at any time. No foreseeable risks are possible for survey participation.

Your participation will last for approximately 15-20 minutes. You may not receive any direct benefit from taking part in this study. This research will benefit society by providing a better understanding of the aspects that influence registered dietitians to consider school nutrition leadership, and will potentially assist with future program leadership development. Records identifying participants will be kept confidential to the extent allowed by applicable laws and regulations. Records will not be made publicly available. However, federal government regulatory agencies, audit departments of Iowa State University, and the ISU Institutional Review Board (a committee that reviews and approves research studies with human subjects) may inspect and/or copy study records for quality assurance and analysis. These records may contain private information. Any individual identifying information will not be published; only data compiled from all participants will appear in any publication.

Participating in this study is completely voluntary. You may choose not to take part in the pilot study or to stop participating at any time, for any reason, without penalty or negative consequences. You can skip any questions in the survey that you do not wish to answer. You are encouraged to ask questions at any time.
For further information, please contact Linette Dodson, at ljdodson@iastate.edu, 770-656-4124 or Dr. Susan Arendt, at sarendt@iastate.edu. 515-294-7575. If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, 1138 Pearson Hall, Iowa State University, Ames, Iowa 50011.

Q1 Do you agree to participate in this survey?
☐ Yes
☐ No

School Nutrition Leadership Survey

For the purpose of this research, school nutrition leadership will be defined as professional job responsibilities associated with the oversight of the overall or a specific aspect(s) of a district's school nutrition program or working at the state department level.

Q2 Are you currently employed in a leadership role in school nutrition?
☐ Yes
☐ No

Choose the response that best describes you, your reasons for selecting school nutrition and satisfaction with your current school nutrition job. What are the reasons you selected your current leadership position in the school nutrition field?

Please click the circle that best indicates your level of agreement to the statements listed below.

Q3 I selected a school nutrition position because...

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>...I wanted to develop my professional skills.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>...I wanted to develop knowledge in addition to clinical dietetic knowledge.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>...I determined that it would</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tr>
</tbody>
</table>
help me continue to develop foodservice leadership skills.
...I was interested in this type of job.
...I found the work schedule appealing to me because of the 8am-5pm, Monday through Friday schedule.
...I wanted to work in this position even though the location was inconvenient to my home.
...I wanted to utilize my nutrition training.
...I feel satisfied when I focus on customer satisfaction.
...I felt anxiety when I dealt with challenging situations.
...I wanted to be mentored by other leaders in School Nutrition.
...I thought the position would allow me to develop professional leadership skills.
...I wanted to be valued by my coworkers.
...I wanted to work in an environment that provides promotion opportunities.
...I did not want to be professionally challenged.
...I wanted to have good relationships with my coworkers.
...I did not consider this type of job boring.
...I wanted my coworkers to be understanding.

Q4 I selected a school nutrition position because...

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>...I did not want to engage or work with other people.</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<td>○</td>
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<tr>
<td>...I thought I would enjoy managing a school</td>
<td>○</td>
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<tr>
<td>nutrition program.</td>
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<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
<td>...I wanted to feel that I achieved a positive outcome.</td>
<td>O</td>
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<td>O</td>
<td>O</td>
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<tr>
<td>...I wanted to influence others.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>...I did not consider the amount of pay and benefits as the primary decision factor.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
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<td>...I wanted to provide food safety training.</td>
<td>O</td>
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<td>...I had better promotion opportunities.</td>
<td>O</td>
<td>O</td>
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<tr>
<td>...I knew I would be satisfied in a leadership position in school nutrition.</td>
<td>O</td>
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<td>...I wanted to have a structured work schedule.</td>
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<td>O</td>
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<td>...I wanted to make a difference in the world.</td>
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<td>O</td>
<td>O</td>
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<td>...I enjoyed managing a school nutrition operation.</td>
<td>O</td>
<td>O</td>
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<td>...I wanted a position that would impact others' health and well-being.</td>
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<td>O</td>
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<tr>
<td>...I wanted to have a positive impact on preventing childhood obesity by providing nutritious school</td>
<td>O</td>
<td>O</td>
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meals.

...I discovered this job opportunity in my geographical location.

...I did not want a structured/routine work environment.

...I enjoyed working with others to achieve results.

...I did not require constant praise or feedback for work efforts from my boss.

...I enjoy working to achieve positive financial results.

...I could only find this job available in my geographical location.

What is your agreement level associated with the following statements applied to your current leadership position in the school nutrition field? Please click the circle that best indicates your level of agreement.

Q5 I consider my school nutrition leadership position satisfying because...

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<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
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<th>Agree</th>
<th>Strongly agree</th>
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<td>...I think my salary level is appropriate for my level of job responsibilities.</td>
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<td>...I do not have routine tasks to perform.</td>
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<td>...I think I am having a</td>
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<td>○</td>
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positive impact on the health of school-age children.
...I enjoy the financial management aspects of my position.
...I am not required to apply or utilize my dietetics skills.
...I do not mind having budgetary responsibilities.
...I feel like I have job security in my current position.
...I enjoy personnel management and development focused on positive outcomes.
...I consider the challenges with program requirements I deal with manageable.
...I enjoy working in school nutrition leadership.
...I do not like to have new challenges, like

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<td>...I enjoy the</td>
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<td>my current position.</td>
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<td>...I enjoy personnel</td>
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<td>development focused</td>
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<td>on positive outcomes.</td>
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<td>...I consider the</td>
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<td>I deal with</td>
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<td>manageable.</td>
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<td>...I enjoy working</td>
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<td>in school nutrition</td>
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<td>leadership.</td>
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<td>...I do not like</td>
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<td>program changes.</td>
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<td>...I consider my work environment to be stable.</td>
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<td>...I enjoy implementing food safety procedures.</td>
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<td>...I consider employee training an important responsibility.</td>
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<td>...I enjoy meeting program regulations and requirements.</td>
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<tr>
<td>...I enjoy doing similar tasks every day.</td>
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<tr>
<td>...I enjoy working independently.</td>
<td>o</td>
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<td>...I enjoy developing food and equipment procurement bids.</td>
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</tbody>
</table>
Q6 What is your age range?

- 18 - 21 years old
- 22 - 25 years old
- 26 - 30 years old
- 31 - 35 years old
- 36 - 40 years old
- 41 - 45 years old
- 46 - 50 years old
- 51 - 55 years old
- 56 - 60 years old
- 61 years or older

Q7 What is your gender?

- Male
- Female

Q8 What ethnic group best describes you?

- American Indian or other Native American
- Asian, Asian American, or Pacific Islander
- Black or African American
- White (non-Hispanic)
- Hispanic or Latino
- Multiracial
- I prefer not to respond
- Other (please specify) _____________

Q9 What is your current job title?

- School nutrition director (district level supervision)
- School nutrition coordinator (sub-district supervision or multiple site supervision)
- School nutrition supervisor (multiple site supervision)
- School nutrition manager (building level supervision)
- State agency representative (please specify) ____________________
- Other (please specify) ____________________
Q10 How many years have you been in your current position?
- 0 - 1 year
- 2 - 5 years
- 6 - 10 years
- 11 - 15 years
- 16 - 20 years
- 21+ years

Q11 How many years have you worked in school nutrition?
- 0 - 1 year
- 2 - 5 years
- 6 - 10 years
- 11 - 15 years
- 16 - 20 years
- 21+ years

Q12 What is your current salary range?
- $0 - 30,000 per year
- $30,001 - 40,000 per year
- $40,001 - 50,000 per year
- $50,001 - 65,000 per year
- $65,001 - 80,000 per year
- $80,001 - 90,000 per year
- $90,001 + per year

Q13 What is the number of Full Time Equivalents (total hours divided by 8 or total hours considered to be full time in program) working in your school nutrition program?
- 0 - 20
- 21 - 40
- 41 - 60
- 61 - 80
- 81 - 100
- 100 +
- I am not employed in a school district
- I do not know the number of Full Time Equivalents
Q14 What is the current lunch participation level (average lunch meals served per day divided by school enrollment) for your school district?

 OPTIONS:
- 0 - 25%
- 26 - 50%
- 51 - 60%
- 61 - 70%
- 71 - 80%
- 81 - 90%
- 91 - 100%
- I do not know lunch participation level

Q15 What is the current breakfast participation level (average meals served per day divided by school enrollment) for your school district?

 OPTIONS:
- 0 - 25%
- 26 - 50%
- 51 - 60%
- 61 - 70%
- 71 - 80%
- 81 - 90%
- 91 - 100%
- I do not know current breakfast participation level

Q16 How many students are in your school district?

 OPTIONS:
- 0 - 2500 students
- 2501 - 5000 students
- 5001 - 10,000 students
- 10,001 - 20,000
- 20,001 + students

Q17 What is your district's percentage of free and reduced students?

 OPTIONS:
- 0 - 25%
- 26 - 50%
- 51 - 75%
- 76 - 100%
Q18 Please indicate the state where you are currently employed.
- Alabama
- Florida
- Georgia
- Kentucky
- Mississippi
- North Carolina
- South Carolina
- Tennessee

Q19 What was your undergraduate degree major?
- Dietetics
- Foodservice administration
- Food and nutrition
- Hospitality management
- Family and consumer sciences
- Other (please specify) ____________

Q20 During my undergraduate coursework in dietetics, I was introduced to school nutrition leadership.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Q21 What coursework introduced you to school nutrition leadership?
(Please select all that apply.)
- Not able to identify which course introduced school nutrition leadership
- Nutrition coursework
- Foodservice management coursework
- Human resources management coursework
- Other (please specify) _______________
- No coursework introduced school nutrition leadership
Q22 My coursework in dietetics prepared me for my position in school nutrition leadership.

- Yes
- Somewhat
- No
- I completed coursework post-undergraduate that prepared me for my school nutrition leadership position.

Q23 What is the highest level of education you have obtained?

- Bachelor degree
- Masters degree
- Education specialist degree
- PhD or doctorate
- Other (Please specify) ____________________

Q24 When did you complete your internship?

- 1 - 5 years ago
- 6 - 10 years ago
- 11 - 15 years ago
- 16 - 20 years ago
- 21 - 25 years ago
- More than 26 years ago

Q25 How were you introduced to school nutrition leadership through?
(Please select all that apply.)

- Work experience
- Friend/family member
- Internship experience
- College coursework
- Other (please specify) ____________________
Q26 What path did you complete to become a registered dietitian?

☒ Traditional internship program
☒ Coordinated undergraduate program
☒ Distance program
☒ Graduate degree with work experience
☒ Three year training
☒ Other (please specify) ____________________

Q27 In what practice areas have you been employed after becoming a registered dietitian? (Please select all that apply.)

☐ Clinical nutrition
☐ Consultant
☐ Foodservice management (not including school nutrition management)
☐ Research dietitian
☐ School nutrition
☐ Other (please specify) ____________________

Thank you for participating in this study!

Linette Dodson
PhD Candidate, Hospitality Management
APPENDIX C. DIETETIC STUDENT INFORMED CONSENT FORM AND QUESTIONNAIRE

INFORMED CONSENT

Title of Study: Registered dietitians in school nutrition leadership and dietetic students’ consideration of school nutrition
Investigators: Linette Dodson and Dr. Susan Arendt

This is a research study. This document has information to help you decide whether or not you wish to participate. Research studies include only people who choose to take part—your participation is completely voluntary. You are being asked to take part in this study because you are a senior level dietetic student enrolled in an approved didactic program in the USDA Southeast region. You should not participate if you are under age 18. The purpose of this study is to examine the characteristics of completed coursework and the potential intentions for pursuing a leadership position in school nutrition.

If you agree to participate, you will be requested to respond to a three part online survey. At the end of the survey, you will be asked to submit your name and email address if you would like to be included in a random drawing for two $50 Visa gift cards. This information will only be used for the random drawing. Odds of winning are associated with the number of surveys completed and is anticipated to be approximately 1 in 150. The names and email addresses will be removed from the survey responses prior to releasing the data to the principal investigators and this information will be retained in a separate file by the Office of Education and Educational Technology (ODEET). ODEET provides technological support for distance instructors and students with research. The contact information will be destroyed when the random drawing is complete. You are able to withdraw from the survey at any time. No foreseeable risks are possible for survey participation.

Your participation will last for approximately 15-20 minutes. You may not receive any direct benefit from taking part in this study. However, it is hoped this study will help provide a better understanding of the aspects that influencing dietetic students to consider leadership roles in school nutrition and anticipated job satisfaction areas. Records identifying participants will be kept confidential to the extent allowed by applicable laws and regulations. Records will not be made publicly available. However, federal government regulatory agencies, audit departments of Iowa State University, and the ISU Institutional Review Board (a committee that reviews and approves research studies with human subjects) may inspect and/or copy study records for quality assurance and analysis. These records may contain private information. Any individual identifying information will not be published; only data compiled from all participants will appear in any publication.

Participating in this study is completely voluntary. You may choose not to take part in the study or to stop participating at any time, for any reason, without penalty or negative consequences.
You can skip any questions on the survey that you do not wish to answer. You are encouraged to ask questions at any time. For further information about the study, please contact Linette Dodson, at ljdodson@iastate.edu, 770-656-4124 or Dr. Susan Arendt, at sarendt@iastate.edu, 515-294-7575. If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, 1138 Pearson Hall, Iowa State University, Ames, Iowa 50011.

Q1 Do you agree to participate in this survey?

☐ Yes
☐ No

**Dietetic Student Survey**

Q2 Are you currently a senior level or higher student enrolled in an approved didactic or coordinated program?

☐ Yes
☐ No
☐ Not sure

We are investigating the type of coursework completed as part of your dietetic program and your interest in school nutrition. Your responses are valuable so please complete the following questionnaire based on your intentions and course experiences.
Choose the response of the questions that best relates to your coursework experience and your future intentions.

Q3 What is your desired area of practice after graduation?

- Clinical Nutrition
- Community Nutrition
- Consulting Dietetics
- Foodservice Management
- Administrative Dietetics
- Research Dietitian
- School Nutrition
- Wellness
- Other (please specify) ____________________
- Do not know what area of practice I desire

Q4 With which group of patients do you want to work?
(Please select all that apply.)

- I do not know
- Infants (0 - 4 years old)
- School age children (5 - 18 years old)
- Young adults (19 - 30 years old)
- Adults (31 - 64 years old)
- Senior adults (65 + years old)

What are the reasons you might consider applying for a position in the school nutrition field after completion of an internship program? Click the circle that best indicates your level of agreement.

Q5 I would apply for a school nutrition position because...

<table>
<thead>
<tr>
<th>Reason</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>...I want to develop my professional skills.</td>
<td>○</td>
<td>○</td>
<td>○</td>
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</tr>
<tr>
<td>...I want to develop knowledge besides my clinical</td>
<td>○</td>
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</tr>
</tbody>
</table>
dietetic knowledge. ...I think it would help me continue to develop foodservice leadership skills. ...I am interested in this type of job. ...I find the work schedule is appealing because of the 8am-5pm, Monday through Friday schedule, with school holidays. ...I want to work in this position even though the work location is not convenient. ...I want to utilize my nutrition training. ...I feel satisfaction when I focus on customer satisfaction. ...I feel anxious when I deal with challenging situations.
I want to be mentored by leaders in school nutrition.
I think the position would allow me to develop professional leadership skills.
I want to be valued by my coworkers.

Q6 I would apply for a school nutrition position because...

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I want to work in an environment that provides promotion opportunities.</td>
<td>○</td>
<td>○</td>
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</tr>
<tr>
<td>I do not want to be professionally challenged.</td>
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<tr>
<td>I want to have good relationships with my coworkers.</td>
<td>○</td>
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</tr>
<tr>
<td>I do not consider this type of job boring.</td>
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<td>○</td>
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<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I want my coworkers to be understanding.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>I do not want</td>
<td>○</td>
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<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
to engage or work with other people.
...I think I would enjoy managing a school nutrition program.
...I want to feel that I achieved a positive outcome in society.
...I want to influence others.
...I do not consider the amount of pay and benefits as the primary decision factor.
...I want to provide food safety training.
...I would have better promotion opportunities.
...I would enjoy working to achieve positive financial results for the school nutrition program.
...I could only find this type of job available in my geographical

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</tr>
</tbody>
</table>
Q7 I would apply for a school nutrition position because...

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>...I know I would be satisfied in a leadership position in school nutrition.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...I want to have a structured work schedule.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...I want to make a difference in the world.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...I would enjoy managing a school nutrition operation.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...I want a position that would impact others health and well being.</td>
<td>○</td>
<td>○</td>
<td>○</td>
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</tr>
<tr>
<td>...I want to have a positive impact on preventing childhood obesity by providing nutritious school meals.</td>
<td>○</td>
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</tr>
<tr>
<td>...I would consider a school nutrition leadership job if it was in my geographical location.</td>
<td>○</td>
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<td>○</td>
<td>○</td>
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</tr>
<tr>
<td>...I do not want a structured/routine work environment.</td>
<td>○</td>
<td>○</td>
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<td>○</td>
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<tr>
<td>...I would enjoy</td>
<td>○</td>
<td>○</td>
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<td>○</td>
</tr>
</tbody>
</table>
Q8 Are you considering working in the school nutrition field as a future career option?

- Yes
- No
- Maybe
- I don't know anything about school nutrition

Q9 What are the reasons you may be unsure about working in school nutrition? (Please select all that apply.)

- I know a limited amount about the job responsibilities
- I am not sure if I am interested in foodservice management
- I do not know how to apply for this type of position
- No registered dietitians I know have worked in this field
- I want to work in a clinical setting
- I am interested in wellness initiatives outside of the school environment

Q10 What are the reasons you might NOT consider applying for a position in the school nutrition field?

Click the circle that best indicates your level of agreement

<table>
<thead>
<tr>
<th>Reason</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>...it would not allow me to develop my clinical dietetic skills.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...this type of job does not interest me.</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<td>○</td>
</tr>
<tr>
<td>...I would not enjoy this type of challenge.</td>
<td>○</td>
<td>○</td>
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</tr>
<tr>
<td>Reason</td>
<td>Column 1</td>
<td>Column 2</td>
<td>Column 3</td>
<td>Column 4</td>
<td>Column 5</td>
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</tr>
<tr>
<td>...the work schedule has limited flexibility.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>...the work location would not be convenient to where I currently live.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>...I would not have promotion opportunities.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>...it would not be satisfying to focus on customer satisfaction.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>...I would not feel satisfaction when I deal with challenging situations.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>...I would rather develop my clinical dietetics knowledge.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>...I would not be able to develop professional leadership skills.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>...this type of job would be boring.</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>...I do not want to work in a school</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>
...I do not want to learn about school nutrition.  
...I would not enjoy managing a school nutrition program.  
...I consider the amount of pay and benefits unappealing.  
...I do not consider this to be a position where I could utilize my dietetic training.  
...I would not enjoy managing personnel.  
...I consider having responsibility for a budget intimidating.  
...I do not want to be called a "lunch lady".  
...I consider working with children to be dissatisfying.
Q11 What is your age range?
- 18 - 20 years old
- 21 - 25 years old
- 26 - 30 years old
- 31 - 35 years old
- 36 - 40 years old
- 41 years or older

Q12 What is your gender?
- Male
- Female

Q13 What ethnic group best describes you?
- American Indian or other Native American
- Asian, Asian American, or Pacific Islander
- Black or African American
- White (non-Hispanic)
- Hispanic or Latino
- Multiracial
- I prefer not to respond
- Other (please specify) ____________________

Q14 When is your anticipated graduation year?
- 2014
- 2015 or later
Q15 Please select the state in which the school you are earning your dietetic degree is located.

- Alabama
- Florida
- Georgia
- Kentucky
- Mississippi
- North Carolina
- South Carolina
- Tennessee

Q16 What is your undergraduate degree major?

- Dietetics
- Foodservice administration
- Other (please specify) ____________________

Q17 My coursework in dietetics has provided information about a position in school nutrition management.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Q18 My current career interests include the field of school nutrition.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Q19 During my dietetics coursework, I have been introduced to school nutrition management.

- Yes
- Somewhat
- No
Q20 What coursework introduced you to school nutrition leadership? (Please select all that apply.)

- No coursework introduced school nutrition leadership
- Not sure what coursework introduced school nutrition leadership
- Food and nutrition education coursework
- Foodservice procurement coursework
- Financial management coursework
- Foodservice organization management coursework
- Community nutrition coursework
- Quantity food production coursework
- Other _________________
- Human resources management coursework

Q21 What school nutrition leadership responsibilities were introduced to you in your coursework?

- Menu and nutrition management
- Financial management
- Food safety, security, and sanitation
- Human resource management
- Marketing and communication
- Procurement and inventory management
- Facility and equipment management
- Program management and accountability

Thank you for your participation and input!
APPENDIX D: SCHOOL NUTRITION LEADERSHIP QUESTIONNAIRE VALIDATION FORM

School Nutrition Leadership Questionnaire Validation Form

*Validation participants please feel free to write comments on the hard copy of the questionnaires and add then additional comments on this evaluation form.

1. Were the survey questions comprehensible?
   Yes_________ No__________
   If not, please provide the question number and what requires clarification
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________

2. Were the measurement scales coded “1-5” understandable?
   Yes_________ No__________
   If not, please indicate what could be done to improve the questions to make them more understandable.
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________

3. Was 15-20 minutes an appropriate time frame to complete the survey?
   Yes_________ No__________

4. What recommendations do you have for questionnaire improvement?
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________

I may have questions about what you have written. Please indicate your name and email address below if you will allow me to contact you for further clarification.

Name_________________________________________________________
Email address _________________________________________________

Thank you for participating in this pilot study.
Linette Dodson
PhD Candidate, Hospitality Management
APPENDIX E: DIETETIC STUDENT LEadership QUESTIONNAIRE VALIDATION FORM

Dietetic Student Questionnaire Validation Form

*Validation participants please feel free to write comments on the hard copy of the questionnaires and add then additional comments on this evaluation form

Dietetic Student Questionnaire Validation

1. Were the survey questions comprehensible?
   Yes_______ No_______
   If not, please provide the question number and what requires clarification
   ______________________________________________________________
   ______________________________________________________________
   ______________________________________________________________
   ______________________________________________________________

2. Were the measurement scales coded “1-5” understandable?
   Yes_______ No_______
   If not, please indicate suggestions for question improvement to make them more understandable.
   ______________________________________________________________
   ______________________________________________________________
   ______________________________________________________________
   ______________________________________________________________

3. Was 15-20 minutes an appropriate time frame to complete the survey?
   Yes_______ No____________

4. What recommendations do you have for questionnaire improvement?
   ______________________________________________________________
   ______________________________________________________________
   ______________________________________________________________

I may have questions about what you have written. Please indicate your name and email address below if you will allow me to contact you for further clarification,
Name__________________________________________________________
Email address __________________________________________________

Thank you for participating in this pilot study.
Linette Dodson
APPENDIX F: PILOT SCHOOL NUTRITION LEADERSHIP INFORMED CONSENT FORM AND QUESTIONNAIRE

Informed Consent Document

Title of Pilot Study: Registered dietitians in school nutrition leadership and dietetic students’ consideration of school nutrition.

Investigators: Linette Dodson and Dr. Susan Arendt

This is a pilot test. This document has information to help you decide whether or not you wish to participate. Research studies include only people who choose to take part—your participation is completely voluntary. You are being asked to take part in this pilot study because you are a registered dietitian working in a school nutrition leadership role in the state of Iowa. The purpose of this pilot study is to collect your feedback to further improve the survey questionnaire. After completing the survey, please fill out the evaluation form. An evaluation form is included for you to provide feedback on the survey questionnaire.

You are able to withdraw from the pilot survey at any time. No foreseeable risks are possible for survey participation. Your participation will last for approximately 15-20 minutes.

You may not receive any direct benefit from taking part in this study. This research will benefit society by providing a better understanding of the aspects that influence registered dietitians to consider school nutrition leadership, and will potentially assist with future program leadership development. Records identifying participants will be kept confidential to the extent allowed by applicable laws and regulations. Records will not be made publicly available. However, federal government regulatory agencies, audit departments of Iowa State University, and the ISU Institutional Review Board (a committee that reviews and approves research studies with human subjects) may inspect and/or copy study records for quality assurance and analysis. These records may contain private information. Any individual identifying information will not be published; only data compiled from all participants will appear in any publication.

Participating in this pilot study is completely voluntary. You may choose not to take part in the pilot study or to stop participating at any time, for any reason, without penalty or negative consequences. You can skip any questions in the survey that you do not wish to answer.

You are encouraged to ask questions at any time. For further information, please contact Linette Dodson, at ljdodson@iastate.edu, 770-656-4124 or Dr. Susan Arendt, at sarendt@iastate.edu, 515-294-7575. If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, 1138 Pearson Hall, Iowa State University, Ames, Iowa 50011.
Q1 Do you agree to participate in this survey?
- Yes
- No

**School Nutrition Leadership Pilot Survey**

For the purpose of this research, school nutrition leadership will be defined as professional job responsibilities associated with the oversight of the overall or a specific aspect(s) of a district's school nutrition program or working at the state department level.

Q2 Are you currently employed in a leadership role in school nutrition?
- Yes
- No

Choose the response that best describes you, your reasons for selecting school nutrition and satisfaction with your current school nutrition job. What are the reasons you selected your current leadership position in the school nutrition field?

Please click the circle that best indicates your level of agreement to the statements listed below.

Q3 I selected a school nutrition position because...

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>...I wanted to develop my professional skills.</td>
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<td>...I wanted to develop knowledge in addition to clinical dietetic knowledge.</td>
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<td>...I determined that it would help me continue to develop foodservice leadership skills.</td>
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<td>...I was</td>
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interested in this type of job.  
...I found the work schedule appealing to me because of the 8am - 5pm, Monday through Friday schedule.  
...I wanted to work in this position even though the location was inconvenient to my home.  
...I wanted to utilize my nutrition training.  
...I feel satisfied when I make my “customers” happy.  
...I felt anxiety when I dealt with challenging situations.  
...I wanted to be mentored by other leaders in School Nutrition.  
...I thought the position would allow me to develop professional leadership skills.
...I wanted to be valued by my coworkers.
...I wanted to work in an environment that provides promotion opportunities.
...I did not want to be professionally challenged.
...I wanted to have good relationships with my coworkers.
...I did not consider this type of job boring.
...I wanted my coworkers to be understanding.

<table>
<thead>
<tr>
<th>Q4 I selected a school nutrition position because...</th>
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<tr>
<td>...I did not want to engage or work with other people.</td>
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<tr>
<td>...I thought I would enjoy managing a school nutrition program.</td>
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<td>...I wanted to feel that I</td>
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<td>achieved a positive outcome.</td>
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<td>...I wanted to influence others.</td>
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<tr>
<td>...I did not consider the amount of pay and benefits as the primary decision factor.</td>
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<tr>
<td>...I wanted to provide food safety training.</td>
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<tr>
<td>...I had better promotion opportunities.</td>
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<tr>
<td>...I knew I would be satisfied in a leadership position in school nutrition.</td>
</tr>
<tr>
<td>...I wanted to have a flexible work schedule.</td>
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<td>...I wanted to make a difference in the world.</td>
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<tr>
<td>...I enjoyed managing an operation and seeing positive financial results.</td>
</tr>
<tr>
<td>...I wanted a position that would impact others' health</td>
</tr>
</tbody>
</table>
and well-being.

...I wanted to have a positive impact on preventing childhood obesity by providing nutritious school meals.

...I discovered this job opportunity matching my skills in my geographical location.

...I did not want a structured work environment.

...I enjoyed working with others to achieve results.

...I did not require constant praise or feedback for work efforts from my boss.

<table>
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<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
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<th>Agree</th>
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<td>...I think my</td>
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What is your agreement level associated with the following statements applied to your present leadership position in the school nutrition field?

Q5 I consider my school nutrition leadership position satisfying because...

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<th>Strongly disagree</th>
<th>Disagree</th>
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<th>Agree</th>
<th>Strongly agree</th>
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<tr>
<td>...I think my</td>
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</table>
salary level is appropriate for my level of job responsibilities.

...I do not have routine tasks to perform.

...I think I am having a positive impact on the health of school-age children.

...I enjoy the financial management aspects of my position.

...I am not required to apply or utilize my dietetics skills.

...I do not enjoy having budgetary responsibilities.

...I feel like I have job security in my current position.

...I enjoy personnel management and development focused on positive outcomes.

...I consider the challenges with program requirements I deal with
...I enjoy working in school nutrition leadership.
...I do not like to have new challenges, like program changes.
...I consider my work environment to be stable.
...I enjoy implementing food safety procedures.
...I consider employee training an important responsibility.
...I enjoy meeting program regulations and requirements.
...I enjoy doing similar tasks every day.
...I enjoy working independently.
...I enjoy developing food and equipment procurement bids.
Q6 What is your age range?
- 18 - 21 years old
- 22 - 25 years old
- 26 - 30 years old
- 31 - 35 years old
- 36 - 40 years old
- 41 - 45 years old
- 46 - 50 years old
- 51 - 55 years old
- 56 - 60 years old
- 61 years or older

Q7 What is your gender?
- Male
- Female

Q8 What ethnic group best describes you?
- American Indian or other Native American
- Asian, Asian American, or Pacific Islander
- Black or African American
- White (non-Hispanic)
- Hispanic or Latino
- Multiracial
- I prefer not to respond
- Other (please specify) ____________________

Q9 What is your current job title?
- School nutrition director (district level supervision)
- School nutrition coordinator (sub-district supervision or multiple site supervision)
- School nutrition supervisor (multiple site supervision)
- School nutrition manager (building level supervision)
- State agency representative (please specify) ____________________
- Other (please specify) ____________________
Q10 How many years have you been in your current position?

- 0 - 1 year
- 2 - 5 years
- 6 - 10 years
- 11 - 15 years
- 16 - 20 years
- 21+ years

Q11 How many years have you worked in school nutrition?

- 0 - 1 year
- 2 - 5 years
- 6 - 10 years
- 11 - 15 years
- 16 - 20 years
- 21+ years

Q12 What is your current salary range?

- $0 - 30,000 per year
- $30,001 - 40,000 per year
- $40,001 - 50,000 per year
- $50,001 - 65,000 per year
- $65,001 - 80,000 per year
- $80,001 - 90,000 per year
- $90,001 + per year

Q13 What is the number of Full Time Equivalents (total hours divided by 8 or total hours considered to be full time in program) working in your school nutrition program?

- 0 - 20
- 21 - 40
- 41 - 60
- 61 - 80
- 81 - 100
- 100 +
- I am not employed in a school district
Q14 What is the current lunch participation level (average lunch meals served per day divided by school enrollment) for your school district?

- 0 - 25%
- 26 - 50%
- 51 - 60%
- 61 - 70%
- 71 - 80%
- 81 - 90%
- 91 - 100%

Q15 What is the current breakfast participation level (average meals served per day divided by school enrollment) for your school district?

- 0 - 25%
- 26 - 50%
- 51 - 60%
- 61 - 70%
- 71 - 80%
- 81 - 90%
- 91 - 100%

Q16 How many students are in your school district?

- 0 - 2500 students
- 2501 - 5000 students
- 5001 - 10,000 students
- 10,001 - 20,000
- 20,001 + students

Q17 What is your district's percentage of free and reduced students?

- 0 - 25%
- 26 - 50%
- 51 - 75%
- 76 - 100%
Q18 Please indicate the state where you are currently employed.

- Alabama
- Florida
- Georgia
- Kentucky
- Mississippi
- North Carolina
- South Carolina
- Tennessee

Q19 What was your undergraduate degree major?

- Dietetics
- Foodservice administration
- Food and nutrition
- Hospitality management
- Family and consumer sciences
- Other (please specify) ____________________

Q20 During my undergraduate coursework in dietetics, I was introduced to school nutrition leadership.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Q21 What coursework introduced you to school nutrition leadership?
(Please select all that apply.)

- Not able to identify which course introduced school nutrition leadership
- Nutrition coursework
- Foodservice management coursework
- Human resources management coursework
- Other (please specify) ____________________
- No coursework introduced school nutrition leadership
Q22 My coursework in dietetics prepared me for my position in school nutrition leadership.

- Yes
- Somewhat
- No
- I completed coursework post-undergraduate that prepared me for my school nutrition leadership position.

Q23 What is the highest level of education you have obtained?

- Bachelor degree
- Masters degree
- Education specialist degree
- PhD or doctorate

Q24 When did you complete your internship?

- 1 - 5 years ago
- 6 - 10 years ago
- 11 - 15 years ago
- 16 - 20 years ago
- 21 - 25 years ago
- More than 26 years ago

Q25 Where were you introduced to school nutrition leadership through? (Please select all that apply.)

- Work experience
- Friend/family member
- Internship experience
- College coursework
- Other (please specify) ____________________
Q26 What path did you complete to become a registered dietitian?

- Traditional internship program
- Coordinated undergraduate program
- Distance program
- Graduate degree with work experience
- Three year training
- Other (please specify) ____________________

Q27 In what practice areas have you have been employed after becoming a registered dietitian? (Please select all that apply.)

- Clinical nutrition
- Consultant
- Foodservice management (not including school nutrition management)
- Research dietitian
- School nutrition
- Other (please specify) ____________________
APPENDIX G: PILOT DIETETIC STUDENT INFORMED CONSENT FORM AND QUESTIONNAIRE

INFORMED CONSENT

Title of Pilot Study: Registered dietitians in school nutrition leadership and dietetic students’ consideration of school nutrition

Investigators: Linette Dodson and Dr. Susan Arendt

This is a pilot research study. This document has information to help you decide whether or not you wish to participate. Research studies include only people who choose to take part—your participation is completely voluntary. You are being asked to take part in this pilot study because you are a senior level dietetic student enrolled in an approved didactic program in the state of Iowa. You should not participate if you are under age 18.

The purpose of this pilot study is to collect your feedback to further improve the survey questionnaire. After completing the survey, please fill out the evaluation form. An evaluation form is included for you to provide feedback on the survey questionnaire.

You are able to withdraw from the survey at any time. No foreseeable risks are possible for survey participation. Your participation will last for approximately 15-20 minutes. You may not receive any direct benefit from taking part in this study. However, it is hoped this study will help provide a better understanding of the aspects that influencing dietetic students to consider leadership roles in school nutrition and anticipated job satisfaction areas. Records identifying participants will be kept confidential to the extent allowed by applicable laws and regulations. Records will not be made publicly available. However, federal government regulatory agencies, audit departments of Iowa State University, and the ISU Institutional Review Board (a committee that reviews and approves research studies with human subjects) may inspect and/or copy study records for quality assurance and analysis. These records may contain private information. Any individual identifying information will not be published; only data compiled from all participants will appear in any publication.

Participating in this pilot study is completely voluntary. You may choose not to take part in the study or to stop participating at any time, for any reason, without penalty or negative consequences. You can skip any questions on the survey that you do not wish to answer. You are encouraged to ask questions at any time.

For further information about the study, please contact Linette Dodson, at ljdodson@iastate.edu, 770-656-4124 or Dr. Susan Arendt, at sarendt@iastate.edu, 515-294-7575. If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, 1138 Pearson Hall, Iowa State University, Ames, Iowa 50011.
Q1 Do you agree to participate in this survey?

- Yes
- No

Dietetic Student Pilot Survey

Q2 Are you currently a senior level or higher student enrolled in an approved didactic or coordinated program?

- Yes
- No
- Not sure

Career Plans

We are investigating the type of coursework completed as part of your dietetic program and your interest in school nutrition. Your responses are valuable so please complete the following questionnaire based on your intentions and course experiences.

Choose the response of the questions that best relates to your coursework experience and your future intentions.

Q3 What is your desired area of practice after graduation?

- Clinical Nutrition
- Community Nutrition
- Consulting Dietetics
- Foodservice Management
- Administrative Dietetics
- Research Dietitian
- School Nutrition
- Wellness
- Other (please specify) ____________________
- Do not know what area of practice I desire
Q4 With which group of patients do you want to work? (Please select all that apply.)

- I do not know
- Infants (0 - 4 years old)
- School age children (5 - 18 years old)
- Young adults (19 - 30 years old)
- Adults (31 - 64 years old)
- Senior adults (65 + years old)

What are the reasons you might consider applying for a position in the school nutrition field after completion of an internship program? Click the circle that best indicates your level of agreement.

Q5 I would apply for a school nutrition position because...

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<thead>
<tr>
<th>Reason</th>
<th>Strongly disagree</th>
<th>Disagree</th>
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<th>Agree</th>
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<tbody>
<tr>
<td>...I want to develop my professional skills.</td>
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<td>...I want to develop other knowledge besides my clinical dietetic knowledge.</td>
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<tr>
<td>...it would help me develop foodservice leadership skills.</td>
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<tr>
<td>...this type of job interests me.</td>
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<td>...the work schedule is appealing because of the 8am-5pm, Monday</td>
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through Friday schedule.  
...even though the work location is not convenient to where I live.  
...I want to utilize my nutrition training.  
...it satisfies me to make "customers" happy.  
...I feel anxiety when I deal with challenging situations.  
...I want to be mentored by leaders in school nutrition.  
...the position would allow me to develop professional leadership skills  
...I want to be valued by my coworkers.
Q6 I would apply for a school nutrition position because...

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>...I want to work in an environment that provides promotion opportunities.</td>
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<td>...I do not want to be professionally challenged.</td>
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<td>...I want to have good relationships with my coworkers.</td>
<td>○</td>
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<td>...this type of job would not be boring.</td>
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<td>...I want my coworkers to be understanding.</td>
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<td>...I want to engage or work with other people.</td>
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<td>...I think I would enjoy managing a school nutrition program.</td>
<td>○</td>
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<td>...I want to feel that I achieved a positive outcomes.</td>
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<td>...I want to influence others.</td>
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<td>...even though I</td>
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do not consider the amount of pay and benefits as the primary decision factor. 
...I want to utilize my academic training. 
...I would have better promotion opportunities. 

Q7 I would apply for a school nutrition position because...

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<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
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</thead>
<tbody>
<tr>
<td>...I know I would be satisfied in a leadership position in school nutrition.</td>
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<td>...I want to have a flexible job schedule.</td>
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<tr>
<td>...I want to make a difference in the world.</td>
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<tr>
<td>...I would enjoy managing a school nutrition operation and seeing positive financial results.</td>
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<td>...I want a position that would impact others health</td>
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</table>
and well being.
...I want to have a positive impact on preventing childhood obesity by providing nutritious school meals.
...I would like to discover a school nutrition leadership job opportunity matching my skills in my geographical location.
...I do not want a structured work environment.
...I enjoy working with others to achieve results.
...I do not require constant praise or feedback for work efforts from my boss.
Q8 Are you considering working in the school nutrition field as a future career option?

- Yes
- No
- Maybe
- I don't know anything about school nutrition

Q9 What are the reasons you may be unsure about working in school nutrition?
(Please select all that apply.)

- I know a limited amount about the job responsibilities
- I am not sure if I am interested in foodservice management
- I do not know how to apply for this type of position
- No registered dietitians I know have worked in this field
- I want to work in a clinical setting
- I am interested in wellness initiatives outside of the school environment

Q10 What are the reasons you might NOT consider applying for a position in the school nutrition field?
Click the circle that best indicates your level of agreement

<table>
<thead>
<tr>
<th>Reason</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
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</thead>
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<tr>
<td>...it would not allow me to develop my clinical dietetic skills.</td>
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<td>☐</td>
<td>☐</td>
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<td>...this type of job does not interest me.</td>
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<td>...I would not enjoy this type of challenge.</td>
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<td>...the work schedule has limited flexibility.</td>
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<td>...the work location would not be</td>
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convenient to where I currently live. I would not have promotion opportunities. it would not be satisfying to focus on customer satisfaction. I would not feel satisfaction when I deal with challenging situations. I would rather develop my clinical dietetics knowledge. I would not be able to develop professional leadership skills. this type of job would be boring. I do not want to work in a school environment. I consider the amount of pay and benefits unappealing. I do not consider this...
to be a position where I could utilize my dietetic training.  
...I would not enjoy managing personnel.  
...I consider having responsibility for a budget intimidating.  
...I do not want to be called a "lunch lady".  
...I consider working with children to be dissatisfying.

<table>
<thead>
<tr>
<th>Q11 What is your age range?</th>
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<td>36 - 40 years old</td>
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<td>41 years or older</td>
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<th>Q12 What is your gender?</th>
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<td>Female</td>
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</table>
Q13 What ethnic group best describes you?

- American Indian or other Native American
- Asian, Asian American, or Pacific Islander
- Black or African American
- White (non-Hispanic)
- Hispanic or Latino
- Multiracial
- I prefer not to respond
- Other (please specify) ____________________

Q14 When is your anticipated graduation year?

- 2014
- 2015 or later

Q15 Please select the state in which the school you are earning your dietetic degree is located.

- Alabama
- Florida
- Georgia
- Kentucky
- Mississippi
- North Carolina
- South Carolina
- Tennessee

Q16 What is your undergraduate degree major?

- Dietetics
- Foodservice administration
- Other (please specify) ____________________
Q17 My coursework in dietetics has provided information about a position in school nutrition management.

☐ Strongly agree
☐ Agree
☐ Neutral
☐ Disagree
☐ Strongly Disagree

Q18 My current career interests include the field of school nutrition.

☐ Strongly agree
☐ Agree
☐ Neutral
☐ Disagree
☐ Strongly Disagree

Q19 During my dietetics coursework, I have been introduced to school nutrition management.

☐ Yes
☐ Somewhat
☐ No

Q20 What coursework introduced you to school nutrition leadership? (Please select all that apply.)

☐ No coursework introduced school nutrition leadership
☐ Not sure what coursework introduced school nutrition leadership
☐ Food and nutrition education coursework
☐ Foodservice procurement coursework
☐ Financial management coursework
☐ Foodservice organization management coursework
☐ Community nutrition coursework
☐ Quantity food production coursework
☐ Other ______________________
☐ Human resources management coursework
Q21 What school nutrition leadership responsibilities were introduced to you in your coursework?

☐ Menu and nutrition management
☐ Financial management
☐ Food safety, security, and sanitation
☐ Human resource management
☐ Marketing and communication
☐ Procurement and inventory management
☐ Facility and equipment management
☐ Program management and accountability

Q22 What type of dietetic internship do you plan to complete?

☐ Traditional internship program
☐ Distance program
☐ Other (please specify) _____________________________
APPENDIX H: PILOT SCHOOL NUTRITION LEADERSHIP QUESTIONNAIRE EVALUATION FORM

School Nutrition Leadership Pilot Questionnaire Evaluation Form

Were the survey questions understandable?

☐ Yes
☐ No

Please provide the question number and what requires clarification?

Were the measurement scale description agreement levels coded “1-5” understandable?

☐ Yes
☐ No

Please indicate what could be done to improve the questions to make them more understandable?

Was 15-20 minutes an appropriate time frame to complete the survey?

☐ Yes
☐ No

What other recommendations do you have for questionnaire improvement?

I may have questions about what you have written. Please indicate your name and email address below if you will allow me to contact you for further information.

Name __________________________________________

Email address ___________________________________

Thank you for participating in this pilot study.

Linette Dodson
PhD Candidate, Hospitality Management
APPENDIX I: PILOT DIETETIC STUDENT EVALUATION FORM

Dietetic Student Pilot Questionnaire Evaluation Form

Were the survey questions understandable?

☑ Yes
☑ No

Please provide the question number and what requires clarification?

Were the measurement scale descriptions for agreement levels coded “1-5” understandable?

☑ Yes
☑ No

Please indicate suggestions for question improvement to make them more understandable?

Was 15-20 minutes an appropriate time frame to complete the survey?

☑ Yes
☑ No

What other recommendations do you have for questionnaire improvement?

I may have questions about what you have written. Please indicate your name and email address below if you will allow me to contact you for further clarification.

Name ________________________________
Email address ________________________________

Thank you for participating in this pilot study.

Linette Dodson
PhD Candidate, Hospitality Management