INCORPORATING INTERPROFESSIONAL SIMULATIONS IN DIETETICS EDUCATION

BY

KATIE GEORGE

Submitted to the graduate degree program in Dietetics and Nutrition and the Graduate Faculty of the University of Kansas in partial fulfillment of the requirements for the degree of Master of Science.

_____
Chairperson Heather Gibbs PhD, RD

_____
Rachel Barkley, MS, RD, LD

_____
Mary N. Meyer, RN. MS, APRN

Date Defended: June 25, 2014

The Thesis Committee for Katie George

certifies that this is the approved version of the following thesis:

Incorporating Interprofessional Simulations in Dietetics Education

_____

Chairperson Heather Gibbs, PhD, RD

Date Approved: June 25, 2014

Abstract

Introduction: Simulations are commonly used in medical and nursing education, but little research has been done into the outcomes of including simulations in curriculums for dietetics students. Furthermore, to our knowledge, no research has been published regarding the outcomes of multiple-patient interprofessional simulations in dietetics education.

Methods: In this study, a registered dietitian modified existing simulated patient cases used in the KUMC School of Nursing to include nutrition components. Dietetics students (n=16) and senior nursing students (n=42) participated in simulations together. Pre-test and post-tests were developed to measure dietetics students' knowledge of roles of healthcare professionals and confidence in communicating. Differences between tests were analyzed using the Wilcoxan Rank Sum test. The Kruskall-Wallis test was used to analyze whether students who had completed clinical experiences had significantly different responses compared to students who were beginning clinical experiences. Statistical significance was set at $p<0.05$. Nursing students also completed a pre-test and post-test evaluation for the simulation. Qualitative analysis of answers to open-ended questions on the surveys was used to identify common themes to the students' responses. Dietetics students completed assessment notes for each patient for which they cared for during the simulation. These notes were compared to standard assessment notes written by a registered dietitian to assess for accuracy. As a control, a second group of senior nursing students (n=39) who did not participate in the simulation with a dietetics student also completed the same pre-test and post-test evaluation as the nursing students who did participate with the dietetics student.

Results: For questions that had a correct and incorrect answer, the mean post-test score was higher (64.06%) than the mean pre-test score (60.94%) for dietetics students, however this difference was not statistically significant. No difference was seen between students with regard to clinical experience. 87.5% of students felt the simulation helped them learn roles of other healthcare professionals, while 93.8% of students felt the simulation enhanced their appreciation for interprofessional teamwork. 93.8% of students indicated this activity enhanced their interprofessional communication skills. The mean post-test score was lower (67.03%) than the mean pre-test score (72.53%) for the nursing students. Qualitative analysis of students' responses to open-ended questions identified several key themes. Mean accuracy of the dietetics students' assessment notes was 73%.

Conclusion: Multi-patient interprofessional simulations are an effective way to expose dietetics students to other health professionals, but additional modifications to the existing cases are needed in order to prompt more interprofessional dialogue within the simulation.

Acknowledgements

In addition to the thesis committee, various other individuals contributed to this project. I would like to acknowledge April Roche, the Assistant Director of the Clinical Learning Lab at the University of Kansas Medical Center School of Nursing, for her assistance in developing the patient cases and coordinating and scheduling the simulations. I would also like to acknowledge the graduate assistants in the school of nursing who helped operate the simulations: Aimee Fogel, Katie Mann, Amanda Hernandez, Lanna Zobel, Taylor Robertson, Lori Marshall, Jackie Nelson-Tebeest, Lindsay Weaver, Sarah Pfannenstiel, Jason Gray, and Fidelis Kiungua.

Table of Contents

Chapter 1 – Introduction

1. Summary of relevant literature

There are a multitude of outcomes that have been supported by evidence to result from incorporating simulations as a teaching strategy in healthcare professions, including increased knowledge, learner satisfaction, critical thinking, communication, and self-confidence. More specifically, simulations improve counseling skills when included in the education of dietetics students. These outcomes were measured using pre and post-tests, focus groups, and qualitative questionnaires.

Characteristics of simulations such as feedback, realism, and provision of a safe environment for the learner have been found to best facilitate the development of these outcomes. Furthermore, simulations that are conducted in are more beneficial than virtual simulations.

2. Need for further investigation.

Dietetics education is structured so that the development of clinical skills occurs primarily during a supervised practice internship. Simulations are being incorporated into hospitals to enhance clinical skills and are used in educational curriculums to improve clinical skills of nursing and medical students. However, this teaching method has not often been used in educating dietetics students. Additionally, there has not been a large amount of research conducted into the outcomes that result from the simulations, especially when the simulations include multiple simulated patient cases and involve dietetics students as part of an interprofessional team. Furthermore, with concern for patient safety, the Joint Commission encourages multidisciplinary simulations in order to enhance communication and teamwork skills. The research into this multi-patient

simulation will be unique because it involves interprofessional collaboration of students to work together on various patient cases.

3. Statement of purpose

The aim of this research was to measure the outcomes of incorporating an interprofessional simulation experience into the Medical Nutrition Therapy curriculum for second semester dietetic interns. We hypothesized that including interprofessional simulations as a teaching strategy in dietetics education would impact knowledge of roles of other healthcare professionals and confidence in communicating with other members of the healthcare team. As a secondary outcome, we hypothesized that students in other disciplines such as nursing would have an improved understanding of the role of dietitians after interacting with dietetics students during the simulations. Additionally, students documented patient care using the Assessment, Diagnosis, Intervention, Monitoring and Evaluation (ADIME) format after the simulation. These documentation notes were compared to a standard note and graded on a rubric in order to evaluate professional skill and critical thinking.

Table 1.1. Measurement of outcomes

Dietetics Students		
Outcome	**Measurement**	**Types of Questions**
Change in knowledge of roles of other healthcare professionals	Pretest/Posttest	• Multiple Choice • Likert Scales • Essays
Change in confidence in communicating with other professionals	Pretest/Posttest	• Likert Scales • Essays
Professional Skill and Critical Thinking Assessment	Student ADIME note compared to standard ADIME note	none
Nursing Students		
Outcome	**Measurement**	**Types of Questions**
Change in knowledge of role of RD	Pretest/Posttest	• Multiple Choice • Likert Scales • Essays

4. Research question

Does incorporating interprofessional simulations into dietetics education improve knowledge about the roles of other healthcare professionals and confidence in communicating with other members of the healthcare team as measured by pre and post-tests, a communication checklist, and Likert scales? Does participating in interprofessional simulations with dietetics students improve other healthcare students' understanding of the role of dietitians on the healthcare team as measured by pre and post tests? Do student's documentation notes have high accuracy rates compared to a standard ADIME note?

Chapter 2 – Review of Literature

Introduction

Simulations started in the 1930's with the aviation industry and have been widely used as a teaching and practice strategy in the military (1). This technique can be used for several purposes including education of students and professionals, assessment of practices and behaviors in the workforce, and to develop interdisciplinary teams within a field of professionals (2). Medical schools started using patient simulations as a teaching strategy in the 1970's, and nursing education programs have begun to incorporate simulations into their curriculums. When used in healthcare education, simulation is a term that can include scenarios or case studies that involve role-play, computer programs, and use of mannequins or actors that simulate patients (3).

Although simulation is more recently becoming widespread in health-related fields, there has been little research into the practice of using simulation in dietetics education even though incorporating such technology improves counseling skills and decreases the variability in inter-student experiences (4, 5). Additionally, clinical reasoning skills are largely acquired during dietetic internships at the end of the educational experience (6). Simulations may be another way for dietetics students to glean clinical reasoning skills. Including simulation as a teaching strategy in dietetics education could improve outcomes such as critical thinking skills, improve decision-making skills, increase confidence, and improve communication with other healthcare professionals. This review of literature seeks to analyze the outcomes that have been measured in using simulations in healthcare education, how the outcomes are measured, and what simulation characteristics produce the best outcomes.

Methods for Conducting Literature Review

Electronic databases including PubMed, Cinahl, and Nursing and Allied Health Source were searched using the key terms education, nursing, patient simulation, dietetic education, simulation in education, and dietetics. Articles obtained in the searches were sorted first by title and secondly by abstract. Inclusion criteria were: dietetics studies using simulation, nursing and other healthcare studies using simulation that assessed outcomes, and reviews of literature that provided background information. The type of simulation used in the studies—computer-based, mannequin, or patient actor—was not used as criteria for inclusion or exclusion. After reading through the papers, a few more were included from the reference sections of papers in the original search.

Outcome Improvement

Investigations into the use of simulations in healthcare education have found a handful of outcomes as a result of this teaching method. Some of these include improved knowledge, learner satisfaction, clinical judgment and critical thinking, communication and teamwork, and self-confidence.

Pre and post-tests are often utilized to focus on knowledge attainment associated with simulation. Nursing students' scores on post-tests were found to be significantly higher on post-tests following simulation, although it is questionable as to whether this knowledge can be sustained in the long-term (7, 8). Schubert et al. conducted a study in which students filled out pre and post-tests before and after simulation (8). One of the post-tests was given immediately after the simulation, while a second post-test was mailed two weeks after. There was a significant increase in scores from the pre-test to the first post-test, and a further increase in

knowledge scores to the second post-test. However, this may have been because only 21% of the two-week post-tests were returned, which likely obscured the results.

Interviews with students have also are supported by evidence to improve knowledge following simulation experiences. Graduate intensive care unit nursing students demonstrated improved critical care knowledge based on semi-structured interviews after a six-month training program that included simulations (9). Additionally, interviews conducted with nursing students after simulations with high-fidelity mannequins that included a debriefing session found that students reported the simulations led to improved knowledge and skill development (10). Although it is beneficial to know how students feel about teaching strategies, care should be taken when interpreting these results because interviews are a more subjective measurement. A systematic review of literature by Norman et al. found that simulations add to educational experience of nursing students by adding to students' knowledge, as well as skill and confidence (11).

Focus groups and surveys with open-ended questions have been used to assess learner satisfaction as an outcome of simulation experiences. When compared to students who were exposed only to traditional teaching methods such as role-playing with peers and lectures, a higher percentage of students who had the opportunity to participate in simulation reported the teaching strategy was effective and consistent with their learning style (12, 13). Nursing students who responded to questionnaires after completing simulations throughout their nursing education reported they enjoyed simulation activities and that simulations enhanced learning through doing (14). Furthermore, dietetic interns who interacted with a simulated patient described the experience as beneficial due to feedback provided by the simulated patient after the interview (5). Dietetic students also reported that being evaluated on a checklist during simulations was a

fair assessment at the end of the semester (4). Kowitlawakul et al. found that learner satisfaction was high for nursing and medical students who participated an interprofessional simulation-based education program (15). These results were based on Likert scales on surveys administered to the subjects. The researchers also found that students felt the simulation highlighted the roles and boundaries of nurses.

Clinical judgment involves heightening awareness of a situation that arises with a patient, reacting to the situation, and later reflecting on the actions taken (16). It involves critical thinking and is an essential characteristic of any healthcare professional. While knowledge can be measured more objectively with various tests, it is difficult to measure critical thinking. Various authors have reported measuring critical thinking following simulation experiences, and simulations have been used as a summative evaluation of clinical judgment competency in nursing education (17). In one study, dietetic interns completed one of two computer programs: a simulation-based program called "The Care Planning Simulation System" or the control program, the "Nutrition Care Planning Tutorial" (6). Based on an evaluation scale that measured behavior categories, there was no significant difference between clinical judgment in the group that received simulation verses the control. It is important to note that while this particular study did not find an increase in clinical judgment skills, the intervention was a computer-based simulation, which may not be as effective as physical simulation experiences in which students are actually acting out skills and interacting with a simulated patient or mannequin.

Ironside et al. published a study in 2009 that aimed to determine whether participating in a multiple patient simulation enhanced patient safety competencies for nursing students (18). Students participated in two simulations during the semester, and it was found that students had improved knowledge of patient safety competencies during the second experience based on

evaluation of an investigator-developed dichotomously scaled tool comprised of sixteen criteria from the *Quality and Safety in Education In Nursing* project.

In 2010, the Joint Commission began encouraging multidisciplinary simulations to facilitate collaboration and teamwork among the various healthcare disciplines via enhanced communication skills (19). Different techniques have been used in measuring improvements in communication and teamwork due to simulation experiences. Students have reported on a Visual Analog Scale and via semi-structured interviews that simulations improved communication skills (9, 20). A Team Attitudes Questionnaire administered to students from various healthcare disciplines following a multidisciplinary simulation found increased mutual support and communication (19). However, Becker et al. found that both students in a control group who had a conference with a course instructor regarding what they would do in different clinical scenarios and students who performed an interview with a simulated patient showed improvements in a Communication Knowledge Test (CKT) (21). There was no significant difference in scores between the two groups. This suggests that simulations may be one of multiple teaching strategies can aid in the improvement of communication skills.

Incorporating simulations into curriculums can enhance educational experiences while providing a safe environment for students to improve their confidence in practicing clinical skills. Dietetic interns who participated in patient simulation exercises during a Medical Nutrition Therapy class replied on an evaluation form that the experience led to increased confidence in nutritional counseling (5). Nursing students also reported increased self-confidence following simulation experiences with patients and with high fidelity mannequins (7, 10, 13). Sinclair et al. suggested that increased self-confidence following simulation may be due to the fact that seeing peers demonstrate behaviors may lead to belief that one can demonstrate

the same behavior themselves (13). It also may be because preceptors are busy at clinical sites, and time may not always be warranted for discussions to facilitate student learning during patient care (14). Simulations could therefore serve as a key piece of the educational program where students can ask situational questions and have discussions.

Various simulation strategies have been proven to enhance student outcomes such as knowledge, learner satisfaction, clinical reasoning, communication and teamwork, and self-confidence. More recently, simulations have taken on a new dimension, as they are being used in more specialized settings and as an interprofessional educational strategy.

Simulations have been used in specialized settings to teach specific skills such as gastrointestinal endoscopy and tracheotomy (22, 23). In one study, eighty-seven healthcare professionals who manage patients with tracheotomies participated in a simulation. Not only did they demonstrate improved comfort level and knowledge of the procedure, but educators were also able to identify deficiencies in knowledge during the simulation in order to improve the instructional curriculum (23).

With increasing patient loads, new professional roles are being developed and implemented in clinical settings. Interprofessional education prepares students to work within this complex system (24). Thistlethwaite says in a 2012 review that, "If we expect students to learn about teamwork and professional roles, and to be ready for collaborative practice, it seems both logical and educationally necessary that we include teamwork in health professional curricula and, critically, that we also explore the most effective way of delivering learning activities to promote future collaboration (24)."

Although many studies show the benefits of simulations within professional silos, some studies have found benefits of interprofessional simulations. Kowitlawakul et al. found that nursing and medical students who participated in a simulation together generally reported high learner satisfaction based on Likert scales (15). Another study in which internal medicine curriculum was enhanced by interprofessional simulations involving third year medical students and senior nursing students found that self efficacy in communicating was improved as a result of the simulation (25). The authors concluded that interprofessional simulations result in improved communication and knowledge of professional roles. Curran et al. conducted a longitudinal study in which interprofessional education was incorporated into medical, nursing, pharmacy, and social work students' curriculum. Students completed attitudinal surveys as they progressed through the program and satisfaction surveys were completed after each module. Medical students generally reported lower satisfaction with the interprofessional education program compared to the other professions (26). Overall, fifty-four percent of the comments were positive regarding the interprofessional experience.

According to Kaas, "Simulations should be developed with outcomes in mind" (27). After the desired outcomes are determined, evaluation methods must be decided upon.

Evaluation Methods

Conventional teaching methods such as lecture often use multiple-choice tests to measure student performance (21). Studies report using different tools and questionnaires to evaluate students on simulation outcomes, but many of these tools lack evidence of reliability and validity (28). In order to objectively measure student performance or improvement, valid and reliable evaluation methods must be developed.

Adamson et al. describes a study in which three different tools that had previously been developed to evaluate simulations were validated (28). Faculty of different nursing programs viewed videotaped simulations performed below, at, or above expectations and scored the simulations on each of the three tools: The Seattle University Evaluation Tool, The Creighton-Simulation Evaluation Instrument, and the Lasater Clinical Judgment Rubric (LCJR). These three tools were chosen because validity and reliability had not previously been reported for them. The LCJR is a forty-four item rubric that was developed based on Tanner's Model of Clinical Judgment. The Seattle University Evaluation Tool was developed to measure nursing students' performance during simulations objectively. Finally, the Creighton-Simulation Evaluation Instrument is a questionnaire that includes content in twenty-two areas. Researchers found simulations that were performed below expectations consistently received lower scores on the three evaluation tools than simulations that were performed at or above expectations (28). Inter-rater reliability for the instruments was high: 0.889 for the LCJR, 0.858 for the Seattle University Evaluation Tool, and 0.952 for the Creighton Simulation Evaluation Instrument.

In another study, students rated themselves and faculty rated the students on the LCJR (17). Students rated themselves higher than the faculty did, but not significantly. Lasater developed the LCJR during observations of nursing students performing simulations (16). The rubric provides a framework for tasks that need to be done during the simulation and it may be able to detect gaps in student learning. This characteristic of the rubric suggests potential for its use as a formative evaluation strategy in which gaps that are identified can later be addressed in classes.

Various other studies have reported using evaluation methods to test communication, knowledge, self-confidence, and anxiety (7, 20, 21). However, these tools lack evidence of

validation. Adamson et al. emphasized that, "Evidence-based evaluation strategies are a critical component in achieving evidence-based practice in nursing education" (28). This holds true for simulations that are incorporated into any healthcare education program. In order to justify a program, the benefits must be supported and compared to the costs.

Aspects of Simulation that Improve Outcomes

With any teaching strategy, there are various ways to design the curriculum, and some methods are superior to others in effectiveness. Likewise, various characteristics of simulation experiences lead to improved student outcomes. Some of the key characteristics that have been found to be beneficial include feedback, realism, and provision of a safe environment for students. Furthermore, there are some key things to consider when designing interprofessional simulations specifically.

Because reflection is the final step in Tanner's four phases of clinical judgment, Lusk proposes that feedback, especially in the form of debriefing, improves clinical judgment (29). Debriefing, conducted at the conclusion of simulations, allows for students and faculty to communicate about the experience. "Simulation provides the context necessary for students to develop practical knowledge, whereas debriefing serves to organize the information so that it can be retrieved and applied in clinical situations" (29). Dietetic students who participated in patient simulation reported feedback following the experience was beneficial and that they learned more due to the feedback (4, 5). When compared to clinical rotation experiences, nursing students found simulation to be particularly helpful in the fact that there is time for explanation during and after simulations, while this is not always the case in hospitals and patient care settings due to demands of patient care (14).

Realism is another important factor when designing simulations. Beshgetoor et al. found that a higher percentage of students who participated in an interview with a simulated patient found the experience to be realistic verses students who did role-play with other students (12). Dietetics students indicated on a survey that they thought the experience could be improved if it was more realistic (4). This may be a key factor to consider when deciding which type of simulation to incorporate into a curriculum. While computer-based simulations may be easier to conduct, simulations that require the student to interact in the psychomotor domain, whether it is with mannequins or actors, are more realistic and thus may be superior facilitating learning. It also may be optimal if the simulation is carried out in the same place where patient care occurs (30).

Facilitators of simulation experiences can aid students in learning if a safe environment is provided for students to practice in (29). This is because unlike in clinical rotations, there is no harm that can be done to a patient during simulations. It gives students an opportunity to fail and learn from their mistakes. Additionally, during simulations there is a Vegas rule, in which what happens in the simulation stays in the simulation and is not to be discussed outside the laboratory. This helps students to not feel embarrassed if and when they do make a mistake. It could be beneficial for students to tour the location of the simulation ahead of time. Although many students experience increased anxiety before simulations, Jensen et al. found that holding open houses where the students can familiarize with the simulation environment prior to the experience can help alleviate some of this anxiety (17).

When designing interprofessional activities such as simulations, there is a challenge in determining at what point during the educational curriculum the activity should occur. For example, should it occur during undergraduate or graduate education? Should it occur during the

first semester when there have been no similar activities or during the second semester after students have been exposed to other professions? Additionally, educators must determine what types of activities to include, what professions to involve, and who should be administering the activities when designing interprofessional education programs (24).

Conclusion and Application to Dietetics Education

Simulations in dietetic education have been found to improve counseling skills and may be a good way to practice basic clinical skills, as well as work on patient-centered counseling to elicit behavior change (4, 5). This is important because dietetics education is set up so that most of the development of clinical reasoning skills occurs during internships (6). Simulations incorporated into dietetics curriculums tended to improve student outcomes when mannequins and simulated patients were used; however, one study found no significant difference in dietetic student outcomes between computer programs that incorporated simulation verses computer programs that did not (4-6, 12). This suggests that virtual simulations may be inferior to simulations experiences that require the student to physically demonstrate clinical skills and interact with patients and other students.

Dietetics curriculums could incorporate simulation for improving student learning and as a method for evaluating students. Students participating in interviews with a simulated patient found the simulation to be a good way to be evaluated at the end of the semester, especially since immediate feedback was provided (4). Lambert et al. describes designing an Objective Structured Clinical Exam (OSCE) that involved active and passive stations (31). Active stations were comprised of interactions with simulated patients while the passive stations tested knowledge. Dietetics students performed best at the active stations that involved simulated

patients. This could provide a framework for which simulated patients are used in conjunction with conventional evaluation methods for testing both clinical skills and knowledge.

Many studies reported the benefits of the various forms of simulation on educational outcomes such as increased knowledge, learner satisfaction, clinical judgment skills, communication and teamwork, and self-confidence. Multiple patient simulations have been shown to improve outcomes such as patient safety (18). Various evaluation tools have been used and certain characteristics of simulations have been shown to improve learner outcomes. Much of what is known has come from incorporating simulation in medical schools and nursing programs. However, simulations in dietetics education are emerging and need to be evaluated for efficacy in improving outcomes specific to dietetic competencies such as using effective counseling and education skills to facilitate behavior change, contributing in group settings, applying evidence-based guidelines, and establishing collaborative relationships with other health professionals.

Chapter 3 – Methods

The Learning Assessment Planning Matrix of Competencies for the RD for the University of Kansas Medical Center's Graduate Certificate Dietetic Internship and the University of Kansas Interprofessional Competencies were reviewed to establish competencies for the dietetics students who participated in the learning activity. A registered dietitian worked with nursing education staff to modify existing patient cases used in the KUMC School of Nursing to involve a nutrition component in order to involve second semester dietetics students who were concurrently completing dietetic internship rotations. The Simulated e-health Delivery System (SEEDS) was updated for students to look up patient information prior to arriving at the simulation. Separate pretests and posttests (see Appendix B and C) were developed by three members of the research team for the dietetics students and for the senior nursing students. These evaluations involved multiple choice questions, Likert scales, and open-ended essays and have not been validated.

IRB approval was obtained prior to student participation in the research and simulations. All students were provided consent forms (see Appendix A) and instructed that participating in the research was voluntary. The first group of participants included second semester dietetics students (n=16) and senior nursing students (n=42) who agreed to participate in the research by completing the pretest and posttest evaluations online. Data was only used for thirty-nine of the nursing students due to missing post-tests. Dietetics students also turned in clinical documentation notes (formatted according to the Academy of Nutrition and Dietetic's recommended Assessment, Diagnosis, Intervention, Monitoring, and Evaluation; ADIME) for each patient after completing the simulation. ADIME notes were collected in order to evaluate critical thinking and clinical judgment skills. The second group of participants included senior

nursing students (n=39) who did not participate in the simulation with a dietetics student, but filled out the same pre-test and post-test evaluations as the nursing students who did participate in the simulation with a dietetics student. This second group served as a control for evaluating nursing students' knowledge of dietitians gained as a result of the simulations.

During each simulation, one dietetics student worked with two to three nursing students to care for three patients. Some of the simulations also involved a respiratory therapy student, although the respiratory therapy student was not involved in all of the simulations, and no data was collected on respiratory therapy students for our research purposes. Two of the patients were high fidelity mannequins operated by graduate students in the school of nursing. The third patient was played by one of the nursing students participating in the simulation. Each simulation was broken into three twenty-minute sections, and the nursing students rotated roles as registered nurse, nursing assistant, and patient during each section. There were two mini-debriefing sessions in between sections of the simulation and a longer group debriefing after the simulation was complete. Dietetics students were graded on a checklist (see Appendix D) in order to facilitate discussion during the debriefing. Additionally, all the dietetics students were debriefed as a large group in class once all the simulations were complete. We also asked for feedback regarding the simulation during this debriefing.

Differences between responses on pretests and posttests for dietetics students were analyzed using the Wilcoxon Rank Sum test. The Kruskall-Wallis test was used to analyze whether students who had completed clinical experiences had significantly different responses compared to students who were beginning clinical experiences. Statistical significance was set at $p<0.05$. Qualitative analysis of answers to open-ended questions on the surveys was used to identify common themes to the students' responses. A standard ADIME note (see Appendix E)

and checklist (see Appendix F) was created for each patient, and dietetics students' notes were graded on the checklist to determine percent accuracy of students notes compared to the standard note. Cumulative mean scores were calculated for the pretest and posttest completed by the nursing students. However, limited statistical tests could be conducted on this data due to the fact that the pretest and posttest data were not paired. Additionally, mean scores for the nursing students who completed the simulation with a dietetics student were compared to mean scores for the control group of nursing students who did not complete the simulation with a dietetics student. An independent groups t-test was used to compare mean scores between the experimental and control group.

Statistical tests were performed using Microsoft Excel and the Statistical Package for the Social Sciences (IBM SPSS, release 20.0.0).

Chapter 4 – Results

The aim of this research was to measure the outcomes of incorporating an interprofessional simulation experience into the Medical Nutrition Therapy curriculum for second semester dietetic interns.

Analysis of Dietetics Student Pretests and Posttests

For questions that had a correct and incorrect answer, the mean post-test score was higher (64.06%) than the mean pre-test score (60.94%), although this difference was not significant ($p=0.71$). Analysis of responses to multiple choice questions and Likert scales found no significant difference in responses to any of the questions from pre-test to post-test. No difference was seen in scores on pretests or posttests between students with regard to clinical experience (pretest question 7). 87.5% of students felt the simulation helped them learn roles of other healthcare professionals, while 93.8% of students felt the simulation enhanced their appreciation for interprofessional teamwork. 93.8% of students indicated this activity enhanced their interprofessional communication skills. Refer to appendix G for student responses on specific questions.

Qualitative analysis of responses to open-ended answers on the pre-test and post-test revealed several different themes that are outlined in Table 4.1 along with their frequencies. Refer to appendix G for specific student responses. Many students provided lengthy answers that covered more than one theme. If more than one theme was identified in a single student's response, all themes identified were marked.

Analysis of ADIME Notes

Overall the mean percent accuracy for the ADIME notes (n=48) was 73%. This was lower than the 80% expectation that was made a priori. The highest mean score was for the

patient with the colostomy (75%) and the lowest was for the patient who required enteral nutrition recommendations (69%).

Analysis of Nursing Student Pretest and Posttests

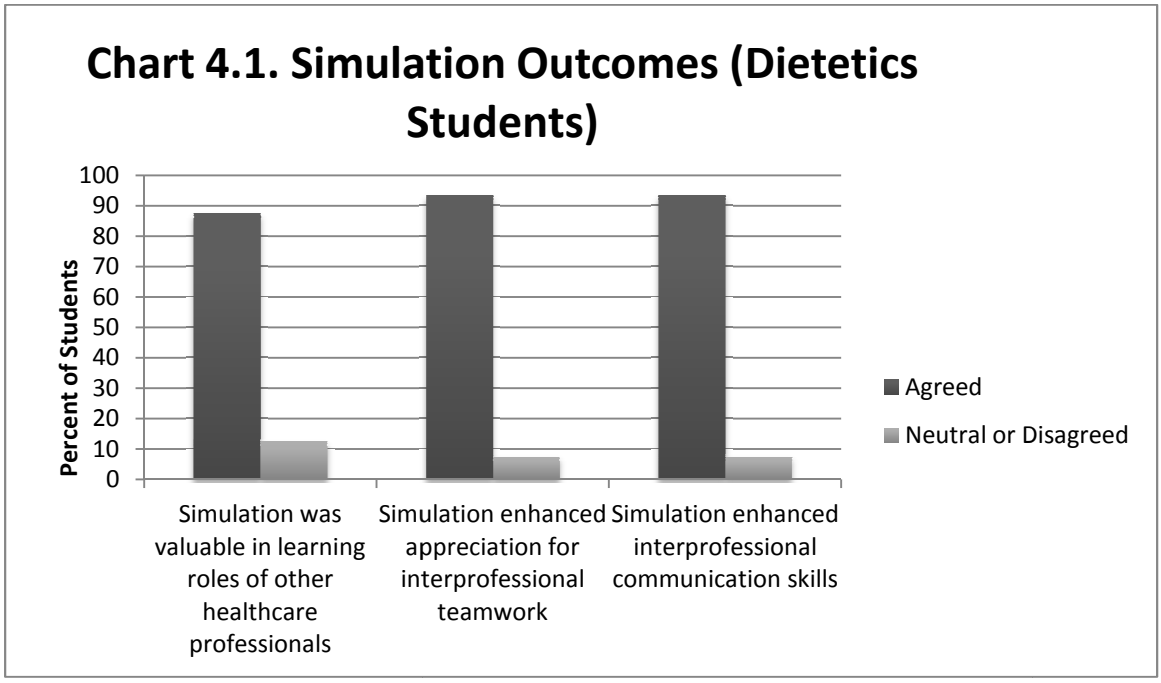
On average, when asked if the simulation was a valuable experience in helping them learn the role of the dietitian, nearly all (95%) of the nursing students who completed the simulation with the dietetics student either agreed or strongly agreed. Only about half (51.2%) of the control group of nursing students agreed or strongly agreed ($p<0.05$).

However, although the students indicated the simulation helped them learn the role of the dietitian based on a Likert scale, the experimental group of nursing students did not demonstrate an increase in knowledge based on posttest scores. There was a decrease in cumulative mean scores between pretest (72.5%) and posttest (67.0%) for these nursing students who completed the simulation with a dietetics student, while there was a slight increase in mean score from the pre-test (72.1%) to the post-test (72.4%) for the control group of nursing students. Because the data were not paired, we could not test whether means were statistically different. For multiple choice questions, there was no significant difference on mean scores for the pre-test or the post-test when comparing the control group of nursing students to the nursing students who completed the simulation with the dietetics students.

Also, we hypothesized that the student who played the role of the diabetic patient during the round of the simulation in which the dietetics student provided diet education would score better on the posttest. In order to determine this, there was a question included on the posttest that asked if the student played the role of the diabetic patient during round two of the simulation. The result could not be analyzed because students responded inappropriately to the

question. For example, during one of the simulations all of the nursing students chose yes, when only one student per round could have played the role of the diabetic patient.

When asked on the pre-test to identify in their own words what the role of the dietitian is on the healthcare team, the themes that arose in the nursing students' answers revealed that they think the dietitian's role is to assess dietary needs (13 responses), optimize nutrition and healing (7 responses), educate other healthcare professionals and/or patients on nutrition and make recommendations (8 responses), serve as a reference for other healthcare professionals (5 responses), and to monitor and/or regulate nutritional intake of patients (7 responses). Refer to appendix H for specific student responses.



Data are expressed as percentages. Questions were asked on Likert Scale (strongly agreed, agreed, neutral, disagreed, strongly disagreed).

Table 4.1. Qualitative Analysis of Dietetics Students Answers to Open-Ended Questions

Question	**Number of Responses Identified with Theme**	Theme
What do you see as barriers to effectively communicating with other healthcare professionals?	8	Lack of understanding of other's roles and responsibilities or disrespect for other's roles
	5	Insufficient time and/or high patient load
	2	Use of jargon (in general or specific to one's own profession)
	2	Feeling disvalued and/or anxiety about feeling disvalued by others
	2	Established hierarchy creates barriers
	1	Electronic medical record miscommunications
How did this experience help you learn more about your role?	4	Learned own role in communicating with others
	2	Learned how nurses and physicians can use an RD's assistance with patient care
	2	Emphasized teamwork
	1	Highlighted information other professionals can inform the RD of
	2	Learned how others view the RD
	1	Reminder of need to advocate for role as RD
	1	Provided forum for positive feedback from other members of healthcare team
How does interprofessional teamwork enhance quality patient care?	6	Allows for patient-centered care to improve outcomes and/or reduce error
	5	Combines expertise and different scopes of practice
	1	Enhances provision of efficient, timely care for patient
How will you apply what you learned during the simulation in your future career?	8	Will better be able to communicate with others and have more confidence in communication skills
	2	Improved medical nutrition therapy/clinical skills
	5	Will seek others' help and resources
	2	Will build relationships and learn roles of others and/or focus on teamwork

Table 4.2. Nursing Students' Perception of Role of Registered Dietitian

Question	**Number of Responses Identified with Theme**	Theme
In your own words, describe what you think the dietitian's role is on the healthcare team.	13	To assess dietary needs
	7	To optimize nutrition and healing
	8	To educate the patient and/or other professionals on nutrition and make recommendations
	5	To serve as reference to other members of the healthcare team
	7	To monitor and/or regulate nutritional intake of patients

Chapter 5 – Discussion

Simulations are commonly used in educating medical and nursing students, but this strategy is not widely used in dietetics curriculums. This study focused on the outcomes of incorporating a multiple patient interprofessional simulation in dietetics education. While there was not a significant improvement on scores from pretest to posttest for dietetics students or nursing students, a large majority of the students from both disciplines felt the simulation was valuable based on responses to Likert scale questions and open-ended essays. Nursing students felt that it helped them learn more about dietitians, and dietetics students felt the simulation helped them learn roles of other healthcare professionals, increased their appreciation of interprofessional teamwork, and enhanced interprofessional communication.

The most probable reason for the lack of increase in scores from pretest to posttest for the dietetics students was that students rated themselves strongly on the pretest on questions that involved Likert scales, leaving little room for improvement on the posttest. Most of these responses indicated that students already felt confident in communicating with other professionals prior to the simulation. For example, on the pretest, 100% of the dietetics students responded on the pretest that they are comfortable in communicating their role as the nutrition expert to other healthcare team members. The dietetics students may have had high degrees of confidence in communicating with other professionals prior to this simulation because of experiences prior to the simulation that increased interprofessional exposure. They participated in an interprofessional virtual simulation and an interprofessional training event during the fall semester. This suggests that more research should look into the most beneficial timing for introducing students to simulations.

The standard of accuracy may have been set too high at 80% for the ADIME notes. What was included in each dietetics student's note depended upon what s/he uncovered during the simulation, which varied by student. Although the students were debriefed after each patient simulation, if the student missed something with the patient, it may not have been included in the ADIME note. However, this observation was not recorded.

One possible explanation for the lack of improvement from pretest to posttest for the nursing students may be because the role of the dietitian was never fully explained even though we did mention aspects of the dietitian's role during debriefing. We did not design the simulation specifically for the nursing students to pick up on what they should learn about the dietitian, so once again, this was circumstantial. Some of the students suggested it would have been helpful to give a short presentation regarding the role of each member of the healthcare team.

The simulation could have been improved in various ways. The most critical first step in developing the simulation is to determine the main objective. Educators must determine if they want the activity to focus on development of clinical skills or if they want the simulation to be focused on increasing interprofessional interaction. Once the objectives for all parties are clearly defined, the individuals who are leading the debriefing can hone in on these objectives. Furthermore, if the objective of the simulation is to focus on the interprofessional component, then more opportunities for interaction should be built into the simulation. For example, a patient's weight could be missing in the chart, cuing the dietetics student to ask the nurse for a current weight. The only problem with this is that the students must pick up on these cues in order for it to facilitate learning.

It was obvious that the patient charts were lacking some information that should have been included such as laboratory values. Therefore, the simulation could be improved by refining the patient charts and cases. Also, the students may have benefited from exposure to students from other disciplines such as medicine, physical therapy, respiratory therapy, and social work. Finally, some of the students' performance during the simulation may have been improved if they had more time during the simulation and if they were allowed a second chance to repeat the simulation.

In addition to improving the simulation, the tool used to measure outcomes could be improved. After seeing the simulation played out multiple times, it is apparent that the student pre-test and post-test evaluations could be modified in a way such that the specific questions that are asked on the evaluations are addressed in the simulation. Additionally, more research could be done into evaluating behaviors verses attitudes.

One of the most apparent observations from watching the students and speaking with them during debriefing was the variation in clinical experience based on which clinical site the student had been assigned to for supervised practice rotations. Some of the students had completed clinical rotations, but did so in a children's hospital, and had never worked with adult patients. Furthermore, different policies and procedures at the various clinical sites affected how the student interacted in the simulation. For example, many of the students called the physician right away with enteral nutrition recommendations for one of the patients, while some of the students revealed during debriefing that they never contacted a physician to make recommendations. Also, some students thought it was appropriate to give the nurse the order for enteral nutrition directly, while many of the students understood that most of the time the

physician writes the order and that order has to be in the patient's chart before it can be administered.

Not only did students gain from the experience, but it also allowed a chance for the educator to watch the students practice skills that are typically not evaluated in a classroom setting such as bedside manner, counseling strategies, and use of professional jargon. Gaps in knowledge and professional skill could be identified, which allowed the educator to review key components of medical nutrition therapy with the students. For example, many of the students identified carbohydrate counting as a major teaching point with the diabetic patient, but many of them forgot to mention other aspects of education such as hypoglycemia management, goals for monitoring blood glucose levels, and strategies to incorporate physical activity.

Overall, this pilot study demonstrated that simulations can provide an opportunity for dietetics students to interact with other healthcare professionals and practice delivering clinical care in a safe setting. Additionally, gaps in current curriculums can be identified based on student performance during the simulation. By modifying the patient cases slightly, more interprofessional interaction can be facilitated in order to encourage learning and awareness of other professional roles in providing patient care.

References

1. Cates LA. Simulation training: a multidisciplinary approach. Advances in neonatal care : official journal of the National Association of Neonatal Nurses 2011;11(2):95-100. doi: 10.1097/ANC.0b013e318210d16b.
2. Schmidt E, Goldhaber-Fiebert SN, Ho LA, McDonald KM. Simulation exercises as a patient safety strategy: a systematic review. Annals of internal medicine 2013;158(5 Pt 2):426-32. doi: 10.7326/0003-4819-158-5-201303051-00010.
3. Jeffries PR. A framework for designing, implementing, and evaluating simulations used as teaching strategies in nursing. Nursing education perspectives 2005;26(2):96-103.
4. Hampl JS, Herbold NH, Schneider MA, Sheeley AE. Using standardized patients to train and evaluate dietetics students. J Am Diet Assoc 1999;99(9):1094-7. doi: 10.1016/s0002-8223(99)00261-8.
5. Henry BW, Duellman MC, Smith TJ. Nutrition-based standardized patient sessions increased counseling awareness and confidence among dietetic interns. Topics in Clinical Nutrition 2009;24(1):25-34.
6. Turner RE, Evers WD, Wood OB, Lehman JD, Peck LW. Computer-based simulations enhance clinical experience of dietetics interns. Journal of the American Dietetic Association 2000;100(2):183-90.
7. Dearmon V, Graves RJ, Hayden S, Mulekar MS, Lawrence SM, Jones L, Smith KK, Farmer JE. Effectiveness of simulation-based orientation of baccalaureate nursing students preparing for their first clinical experience. The Journal of nursing education 2013;52(1):29-38. doi: 10.3928/01484834-20121212-02.
8. Schubert CR. Effect of simulation on nursing knowledge and critical thinking in failure to rescue events. Journal of continuing education in nursing 2012;43(10):467-71. doi: 10.3928/00220124-20120904-27.
9. Kaddoura MA. New graduate nurses' perceptions of the effects of clinical simulation on their critical thinking, learning, and confidence. Journal of continuing education in nursing 2010;41(11):506-16. doi: 10.3928/00220124-20100701-02.
10. Ogilvie S, Cragg B, Foulds B. Perceptions of nursing students on the process and outcomes of a simulation experience. Nurse educator 2011;36(2):56-8. doi: 10.1097/NNE.0b013e31820b4fd5.
11. Norman J. Systematic review of the literature on simulation in nursing education. The ABNF journal : official journal of the Association of Black Nursing Faculty in Higher Education, Inc 2012;23(2):24-8.
12. Beshgetoor D, Wade D. Use of actors as simulated patients in nutritional counseling. Journal of Nutrition Education & Behavior 2007;39(2):101-2.
13. Sinclair B, Ferguson K. Integrating simulated teaching/learning strategies in undergraduate nursing education. International journal of nursing education scholarship 2009;6:Article7. doi: 10.2202/1548-923x.1676.
14. Hope A, Garside J, Prescott S. Rethinking theory and practice: pre-registration student nurses experiences of simulation teaching and learning in the acquisition of clinical skills in preparation for practice. Nurse education today 2011;31(7):711-5. doi: 10.1016/j.nedt.2010.12.011.

15. Kowitlawakul Y, Ignacio J, Lahiri M, Khoo SM, Zhou W, Soon D. Exploring new healthcare professionals' roles through interprofessional education. Journal of interprofessional care 2014. doi: 10.3109/13561820.2013.872089.
16. Lasater K. Clinical judgment development: using simulation to create an assessment rubric. The Journal of nursing education 2007;46(11):496-503.
17. Jensen R. Clinical reasoning during simulation: comparison of student and faculty ratings. Nurse education in practice 2013;13(1):23-8. doi: 10.1016/j.nepr.2012.07.001.
18. Ironside PM, Jeffries PR, Martin A. Fostering patient safety competencies using multiple-patient simulation experiences. Nursing outlook 2009;57(6):332-7. doi: 10.1016/j.outlook.2009.07.010.
19. Posmontier B, Montgomery K, Smith Glasgow ME, Montgomery OC, Morse K. Transdisciplinary teamwork simulation in obstetrics-gynecology health care education. The Journal of nursing education 2012;51(3):176-9. doi: 10.3928/01484834-20120127-02.
20. Kameg K, Howard VM, Clochesy J, Mitchell AM, Suresky JM. The impact of high fidelity human simulation on self-efficacy of communication skills. Issues in mental health nursing 2010;31(5):315-23. doi: 10.3109/01612840903420331.
21. Becker KL, Rose LE, Berg JB, Park H, Shatzer JH. The teaching effectiveness of standardized patients. The Journal of nursing education 2006;45(4):103-11.
22. Singh S, Sedlack RE, Cook DA. Effects of Simulation-based Training in Gastrointestinal Endoscopy: a Systematic Review and Meta-analysis. Clinical gastroenterology and hepatology : the official clinical practice journal of the American Gastroenterological Association 2014. doi: 10.1016/j.cgh.2014.01.037.
23. Dorton LH, Lintzenich CR, Evans AK. Simulation model for tracheotomy education for primary health-care providers. The Annals of otology, rhinology, and laryngology 2014;123(1):11-8. doi: 10.1177/0003489414521144.
24. Thistlethwaite J. Interprofessional education: a review of context, learning and the research agenda. Medical education 2012;46(1):58-70. doi: 10.1111/j.1365-2923.2011.04143.x.
25. Tofil NM, Morris JL, Peterson DT, Watts P, Epps C, Harrington KF, Leon K, Pierce C, White ML. Interprofessional simulation training improves knowledge and teamwork in nursing and medical students during internal medicine clerkship. Journal of hospital medicine : an official publication of the Society of Hospital Medicine 2014;9(3):189-92. doi: 10.1002/jhm.2126.
26. Curran VR, Sharpe D, Flynn K, Button P. A longitudinal study of the effect of an interprofessional education curriculum on student satisfaction and attitudes towards interprofessional teamwork and education. Journal of interprofessional care 2010;24(1):41-52. doi: 10.3109/13561820903011927.
27. Kaas MJ. Evaluation of simulated learning: looking backward and forward. Journal of the American Psychiatric Nurses Association 2011;17(3):253-4. doi: 10.1177/1078390311403626.
28. Adamson KA, Kardong-Edgren S. A method and resources for assessing the reliability of simulation evaluation instruments. Nursing education perspectives 2012;33(5):334-9.
29. Lusk JM, Fater K. Postsimulation debriefing to maximize clinical judgment development. Nurse educator 2013;38(1):16-9. doi: 10.1097/NNE.0b013e318276df8b.

30. Arafeh JM. Simulation-based training: the future of competency? The Journal of perinatal & neonatal nursing 2011;25(2):171-4. doi: 10.1097/JPN.0b013e3182116e55.
31. Lambert L, Pattison DJ, de Looy AE. Dietetic students' performance of activities in an objective structured clinical examination. Journal of Human Nutrition & Dietetics 2010;23(3):224-9. doi: 10.1111/j.1365-277X.2010.01076.x.

Appendix A: Consent Forms

January 21, 2014

Dear Potential Subject,

This letter serves to answer some of the questions you may have about participating in the research study, "Incorporating Interprofessional Simulations in Dietetics Education." Prior to your simulation, a research team member will review this letter with you and answer any further questions you have.

You will fill out surveys regarding the simulations you will be participating in as part of this class. During those surveys, you will be asked if your data can be used for this research study. If you do not want to participate in the research, indicate that you would not like to have your data used when you are filling out the survey. Please read on for further information.

You are being asked to participate in this study because you are a dietetics student who is enrolled in DN 826 in the Spring 2014 semester and will be participating in the interprofessional simulation in the School of Nursing (SON) simulations laboratory at the University of Kansas Medical Center. You do not have to participate in this research study. The main purpose of the research is to determine outcomes of incorporating dietetics students in the simulations and to develop future curriculums that involve hands on learning activities. Research studies may or may not benefit the people who participate.

Research is voluntary and you may change your mind at any time. There will be no penalty to you if you choose not to participate or if you start the study and decide to stop early. Participation in the study will not affect your grade.

You can ask questions now or at any time during the study. This study will take place at the SON simulations laboratories at KUMC. It will involve about 96 nursing students and 16 dietetics students.

Why is this study being done?

Simulations are commonly used in educating health professionals, especially nursing and medical students. However, simulations are less common in dietetics education and the outcomes of interprofessional simulations are less researched. We are investigating whether participating in interprofessional simulations improves knowledge and skills for nursing and dietetics students.

What will I do if I participate in this study?

You will fill out a pre-test survey that will take 10 to 15 minutes as part of the requirements for this class. After your simulation, you will fill out a similar post-test survey. If you choose to participate in this study, you will indicate during the survey that your data can be used. These surveys are online surveys and your data will be kept confidential.

What are the risks of the study?

There are no known risks associated with filling out the surveys. However, if you are uncomfortable with any of the questions that are contained in the survey, you can choose not to answer those questions. There may be other risks of the study that are not yet known. You will be told anything new that might affect your decision to participate in the study.

Are there any benefits to being in the study?

You will not personally benefit from the study. Researchers hope the information gained from the study will benefit future students in developing curriculums to help them learn more effectively.

Do I have to be in this study?

Participation is voluntary. Participation in this study will have no effect on the grade you receive in this simulation or in your classes at KUMC.

Will it cost anything to be in the study?

There is no cost associated with participating in the study.

Will I get paid to be in this study?

You will not receive any form of payment for participating in the study.

How will my privacy be protected?

The researchers will protect your information. All surveys will be anonymous. The researchers may publish the results of the study. If they do, they will only discuss group results. Your name will not be used in any publication or presentation of this study.

Can I stop being in this study?

You may stop being in this study at any time. Your decision to stop participating will not affect your grade in the simulation or in your coursework.

We look forward to speaking with you about this exciting research!

Sincerely,

Heather Gibbs, PhD, RD

Clinical Assistant Professor

School of Health Professions

Department of Dietetics and Nutrition

Katie George, RD

Graduate Teaching Assistant

School of Health Professions

Department of Dietetics and Nutrition

January 21, 2014

Dear Potential Subject,

This letter serves to answer some of the questions you may have about participating in the research study, "Incorporating Interprofessional Simulations in Dietetics Education." At the time of your simulation, a research team member will review this letter with you and answer any further questions you have.

Your further participation in filling out surveys will be considered your consent to participate. Please read on for further information.

You are being asked to participate in this study because you are a fourth year nursing student and will be participating in the interprofessional simulation in the School of Nursing simulations laboratory at the University of Kansas Medical Center. You do not have to participate in this research study. The main purpose of the research is to determine outcomes of incorporating dietetics students in the simulations and to develop future curriculums that involve hands on learning activities. Research studies may or may not benefit the people who participate.

Research is voluntary and you may change your mind at any time. There will be no penalty to you if you choose not to participate or if you start the study and decide to stop early. Participation in the study will not affect your grade.

You can ask questions now or at any time during the study. This study will take place at the SON simulations laboratories at KUMC. It will involve about 96 nursing students and 16 dietetics students.

Why is this study being done?

Simulations are commonly used in educating health professionals, especially nursing and medical students. However, simulations are less common in dietetics education and the outcomes of interprofessional simulations are less researched. We are investigating whether participating in interprofessional simulations influences knowledge and skill attainment for nursing and dietetics students.

What will I do if I participate in this study?

If you choose to participate in the study, you will fill out a pre-test survey that will take 10 to 15 minutes. After your simulation, you will fill out a similar post-test survey. These surveys are written surveys and your data will be anonymous and confidential.

What are the risks of the study?

There are no known risks associated with filling out the surveys. However, if you are uncomfortable with any of the questions that are contained in the survey, you can choose not to answer those questions. There may be other risks of the study that are not yet known. You will be told anything new that might affect your decision to participate in the study.

Are there any benefits to being in the study?

You will not personally benefit from the study. Researchers hope the information gained from the study will benefit future students in developing curriculums to help them learn more effectively.

Do I have to be in this study?

Participation is voluntary. Participation in this study will have no effect on the grade you receive in this simulation or in your classes at KUMC.

Will it cost anything to be in the study?

There is no cost associated with participating in the study.

Will I get paid to be in this study?

You will not receive any form of payment for participating in the study.

How will my privacy be protected?

The researchers will protect your information. All surveys will be anonymous. The researchers may publish the results of the study. If they do, they will only discuss group results. Your name will not be used in any publication or presentation of this study.

Can I stop being in this study?

You may stop being in this study at any time. Your decision to stop participating will not affect your grade in the simulation or in your coursework.

We look forward to speaking with you about this exciting research!

Sincerely,

Heather Gibbs, PhD, RD

Clinical Assistant Professor

School of Health Professions

Department of Dietetics and Nutrition

Katie George, RD

Graduate Teaching Assistant

School of Health Professions

Department of Dietetics and Nutrition

Appendix B: Student Pre-Tests

ROLES OF HEALTHCARE PROFESSIONALS (Pre-Test for Dietetics Students)

1. Which of the following statements is NOT true regarding the patient assignment process for Nurses:
    a. Each patient is assigned to a Nurse.
    b. Patients may be assigned to both an RN and unlicensed nursing personnel (CNA, PCT).
    c. There is a screening process by which patients are determined to be at risk and then a nurse is assigned to care for them.
    d. Patients with lower acuity may be cared for by a CNA only.

2. Sometimes the roles of the interprofessional team members overlap. Identify the situation where there is role overlap:
    a. The nurse has never suctioned a patient's airway so he/she asks the respiratory therapist to do it.
    b. The nurse and the dietitian provide diabetes education.
    c. The physician orders a dietitian consult.
    d. The dietitian is consulted for tube feeding recommendations.

3. A nurse recognized the dietitian had not been consulted by the physician to see a patient who was newly diagnosed with diabetes. The nurse contacted the dietitian and asked if she could make time to provide nutritional education before the patient was discharged. The nurse demonstrated which of the following?
    a. Used the full scope of knowledge, skills, and abilities of available health professionals and healthcare workers to provide care that is timely and efficient.
    b. Improper delegation of tasks.
    c. Gave timely, sensitive, instructive feedback to others about their performance on the team.
    d. Was careful not to use jargon when communicating with patients and families.

4. There is role overlap between the dietitian and the RN related to the administration of tube feeding. Which of the following statements is correct?
    a. Making specific tube feeding recommendations is central to the role of the dietitian.
    b. It is the responsibility of the RN to assess for complications and patient intolerance of the tube feeding.
    c. Dietitians commonly administer intermittent tube feedings.
    d. Nurses are responsible for monitoring nutrients provided.

5. I understand the role of RNs and unlicensed nursing staff in patient care.
    a. Strongly agree

b. Agree
c. Neutral
d. Disagree
e. Strongly Disagree

6. The role of other healthcare professionals has been addressed in my coursework.
    a. Strongly Agree
    b. Agree
    c. Neutral
    d. Disagree
    e. Strongly Disagree

CONFIDENCE IN COMMUNICATING WITH OTHER HEALTHCARE PROFESSIONALS
(Pre-Test for Dietetics Students)

7. How many weeks of clinical rotations have you had in your dietetic internship?
    a. 0 weeks
    b. 1-6 weeks
    c. 6-12 weeks
    d. 12 weeks or more

8. I am confident in my ability to effectively gather patient information from a medical chart and understand what other healthcare professionals are communicating.
    a. Strongly Agree
    b. Agree
    c. Neutral
    d. Disagree
    e. Strongly Disagree

9. I am confident in my ability to communicate patient care information to other healthcare professionals via the electronic medical record.
    a. Strongly Agree
    b. Agree
    c. Neutral
    d. Disagree
    e. Strongly Disagree

10. I am confident in my ability to communicate patient care information to other healthcare professionals via face to face interactions or on the phone.
    a. Strongly Agree
    b. Agree
    c. Neutral
    d. Disagree
    e. Strongly Disagree

11. I am confident in communicating my role as the nutrition expert to other professionals on the healthcare team.
    a. Strongly Agree
    b. Agree
    c. Neutral
    d. Disagree
    e. Strongly Disagree

12. It is important to collaborate with other healthcare professionals to provide effective patient care.
    a. Strongly Agree
    b. Agree
    c. Neutral
    d. Disagree
    e. Strongly Disagree

13. I have had opportunities during my dietetic education to reflect on team performance with other professionals in order to determine how and where improvements in patient care can be made.
    a. Strongly Agree
    b. Agree
    c. Neutral
    d. Disagree
    e. Strongly Disagree

14. What do you see as barriers to effectively communicating with other professionals?

15. I agree to allow the data generated from this survey and the post-test survey to be used for research purposes.

a. Yes, my data can be used for research purposes.
b. No. I do NOT agree to allow my data to be used for research purposes.

ROLE OF REGISTERED DIETITIANS (Pre-Test for Nursing Students)

1. Dietitians are:
    a. Nutrition experts on the healthcare team.
    b. Always involved in making patient meals in the hospital.
    c. In charge of writing diet orders.
    d. Responsible for taking patient orders at mealtimes and delivering trays.

2. Who is typically in charge of writing diet and enteral nutrition orders for patients? Who should be asked regarding recommendations for enteral nutrition formulas, tube placement, and regimen?
    a. Physician; Physician
    b. Dietitian; Dietitian
    c. Dietitian; Physician
    d. Physician; Dietitian

3. Which is NOT a role of a clinical registered dietitian in an acute care setting? Choose the false statement.
    a. Assess patients who are determined to be at risk by a screening process, although they do not always perform the screen themselves.
    b. Responsible for taking patient orders and delivering trays at mealtimes.
    c. Design interventions and help patients set goals.
    d. Educate patient on nutrition topics for adopting a healthier lifestyle and eating choices.

4. All of the following are reasons a dietitian might be interested in obtaining an accurate weight for a patient EXCEPT: (choose the false statement)
    a. To make more accurate calculations for energy and protein needs for formulating a diet or for formulating an enteral nutrition regimen.
    b. To ensure medication dosages are appropriate.
    c. To compare current weight to usual body weight to assess for malnutrition
    d. To assess presence of edema in relation to fluid needs.

5. Which of the following might a dietitian recommend for a patient?
    a. Probiotic supplementation to restore the microflora when antibiotics have been used
    b. Lactulose to prevent hepatic encephalopathy
    c. Dietary supplements to supply most of nutrients in the diet
    d. Restrictive dietary patterns for patients with diabetes in order to limit sugar and carbohydrates

6. Which is NOT the role of the dietitian in caring for a person who has diabetes? Choose the incorrect statement.
    a. Refer to an outpatient dietitian who can extensively counsel on diet and exercise in relation to disease management.
    b. Prescribe specific insulin regimens.
    c. Educate on carbohydrate counting and individualized eating patterns.
    d. Educate on hypoglycemia management.

7. A dietitian is seeing your patient post-operatively. The nurse can expect the dietitian to:
    a. Write diet order for patient to be NPO prior to surgery.
    b. Recommend parenteral nutrition if patient cannot be fed within 3 days.
    c. Encourage consumption of adequate calories and protein for optimal healing.
    d. Recommend clear liquid diet for at least one week.

8. I have had the opportunity to collaborate with a dietitian to provide patient care in the past.
    a. Strongly Agree
    b. Agree
    c. Neutral
    d. Disagree
    e. Strongly Disagree

9. In your own words, describe what you think is the dietitian's role on the healthcare team.

Appendix C: Student Post-Tests

ROLES OF HEALTHCARE PROFESSIONALS (**POST**-Test for Dietetics Students)

1. Which of the following statements is NOT true regarding the patient assignment process for Nurses:
    a. Each patient is assigned to a Nurse
    b. Patients may be assigned to both an RN and Unlicensed nursing personnel (CNA, PCT)
    c. There is a screening process by which patients are determined to be at risk and then a nurse is assigned to care for the patient.
    d. Patients with lower acuity may be seen by a CNA only.

2. Sometimes the roles of the interprofessional team members overlap. Identify the situation where there is role overlap
    a. The nurse has never suctioned a patient's airway so he/she asks the respiratory therapist to do it.
    b. The nurse and the dietitian provide diabetes education.
    c. The physician orders a dietitian consult.
    d. The dietitian is consulted for tube feeding recommendations.

3. A nurse recognized the dietitian had not been consulted by the physician to see a patient who was newly diagnosed with diabetes. The nurse contacted the dietitian and asked if she could make time to provide nutritional education before the patient was discharged. The nurse demonstrated which of the following?
    a. Used the full scope of knowledge, skills, and abilities of available health professionals and healthcare workers to provide care that is timely and efficient.
    b. Improper delegation of tasks.
    c. Gave timely, sensitive, instructive feedback to others about their performance on the team.
    d. Was careful not to use jargon when communicating with patients and families.

4. There is role overlap between the dietitian and the RN related to the administration of tube feeding. Which of the following statements is correct?
    a. Making specific tube feeding recommendations is central to the role of the dietitian.
    b. It is the responsibility of the RN to assess for complications and patient intolerance.
    c. Dietitians commonly administer intermittent tube feedings.
    d. Nurses are responsible for monitoring nutrients provided.

5. I understand the role of RNs and unlicensed nursing staff in patient care.
    a. Strongly agree
    b. Agree
    c. Neutral
    d. Disagree
    e. Strongly Disagree

6. The role of other healthcare professionals has been addressed in my coursework?
    a. Strongly Agree
    b. Agree
    c. Neutral
    d. Disagree
    e. Strongly Disagree

7. Overall, the simulation was a valuable experience in helping me learn the role of other healthcare professionals in patient care.
    a. Strongly Agree
    b. Agree
    c. Neutral
    d. Disagree
    e. Strongly Disagree

8. The simulation enhanced my appreciation for interprofessional teamwork.
    a. Strongly Agree
    b. Agree
    c. Neutral
    d. Disagree
    e. Strongly Disagree

9. How did this experience help you learn more about your role within in the healthcare team?

10. How does interprofessional teamwork enhance quality patient care?

11. How will you apply what you learned during the simulation in your future career?

12. Additional Feedback you would like to share:

CONFIDENCE IN COMMUNICATING WITH OTHER HEALTHCARE PROFESSIONALS
(**POST**-Test for Dietetics Students)

13. I am confident in my ability to effectively gather patient information from a medical chart and understand what other healthcare professionals are communicating.

a. Strongly Agree

b. Agree

c. Neutral

d. Disagree

e. Strongly Disagree

14. I am confident in my ability to communicate patient care information to other healthcare professionals via the electronic medical record.

a. Strongly Agree

b. Agree

c. Neutral

d. Disagree

e. Strongly Disagree

15. I am confident in my ability to communicate patient care information to other healthcare professionals via face to face interactions or on the phone.

a. Strongly Agree

b. Agree

c. Neutral

d. Disagree

e. Strongly Disagree

16. I am confident in communicating my role as the nutrition expert to other professionals on the healthcare team.

a. Strongly Agree

b. Agree

c. Neutral

d. Disagree

e. Strongly Disagree

17. It is important to collaborate with other healthcare professionals to provide effective patient care.

a. Strongly Agree

b. Agree

c. Neutral

d. Disagree

e. Strongly Disagree

18. I have had opportunities during my dietetic education to reflect on team performance with other members of the healthcare team in order to determine how and where improvements in patient care can be made.

a. Strongly Agree

b. Agree

c. Neutral

d. Disagree

e. Strongly Disagree

19. This activity enhanced my interprofessional communication skills.

a. Strongly Agree
b. Agree
c. Neutral
d. Disagree
e. Strongly Disagree

20. What do you see as barriers to effectively communicating with other professionals?

21. Additional feedback you would like to share:

ROLE OF REGISTERED DIETITIANS (**POST**-Test for Nursing Students)

1. Dietitians are:
    a. Nutrition experts on the healthcare team.
    b. Always involved in making patient meals in the hospital.
    c. In charge of writing diet orders.
    d. Responsible for taking patient orders at mealtimes and delivering trays.

2. Who is typically in charge of writing diet and enteral nutrition orders for patients? Who should be asked regarding recommendations for enteral nutrition formulas, tube placement, and regimen?
    a. Physician;Physician
    b. Dietitian; Dietitian
    c. Dietitian; Physician
    d. Physician; Dietitian

3. Which is NOT a role of a clinical registered dietitian in an acute care setting? Choose the false statement.
    a. Assess patients who are determined to be at risk by a screening process, although they do not always perform the screen themselves.
    b. Responsible for taking patient orders and delivering trays at mealtimes.
    c. Design interventions and help patients set goals.
    d. Educate patient on nutrition topics for adopting a healthier lifestyle and eating choices.

4. All of the following are reasons a dietitian might be interested in obtaining an accurate weight for a patient EXCEPT: (choose the false statement)
    a. To make more accurate calculations for energy and protein needs for formulating a diet or for formulating an enteral nutrition regimen.
    b. To ensure medication dosages are appropriate.
    c. To compare current weight to usual body weight to assess for malnutrition
    d. To assess presence of edema in relation to fluid needs.

5. Which of the following might a dietitian recommend for a patient?
    a. Probiotic supplementation to restore the microflora when antibiotics have been used
    b. Lactulose to prevent hepatic encephalopathy
    c. Dietary supplements to supply most of nutrients in the diet
    d. Restrictive dietary patterns for patients with diabetes in order to limit sugar and carbohydrates

6. Which is NOT the role of the dietitian be in caring for a person who has diabetes? Choose the false statement.
    a. Refer to an outpatient dietitian who can extensively counsel on diet and exercise in relation to disease management.
    b. Prescribe specific insulin regimens.
    c. Educate on carbohydrate counting and individualized eating patterns.
    d. Educate on hypoglycemia management.

7. A dietitian is seeing your patient post-operatively. The nurse can expect the dietitian to:
    a. Write diet order for patient to be NPO prior to surgery.
    b. Recommend parenteral nutrition if patient cannot be fed within 3 days.
    c. Encourage consumption of adequate calories and protein for optimal healing.
    d. Recommend clear liquid diet for at least one week.

8. Did you play the role of the diabetic patient who received nutritional counseling from the dietitian in sequence 2 of the simulation?
    a. Yes
    b. No

9. Overall, the simulation was a valuable experience in helping me learn the role of a dietitian in patient care.
    a. Strongly Agree
    b. Agree
    c. Neutral
    d. Disagree
    e. Strongly Disagree

Appendix D: Student Checklist

INTERPROFESSIONAL SIMULATION DIETETIC STUDENT CHECKLIST

GREG PETERSON

_____ Comes prepared with EN recommendations for patient

_____ Student introduces him or herself as RD or dietetic intern and explains purpose for visit.

_____ Assesses tube feeding regimen and tolerance prior to coming to hospital

_____ Asks about weight loss/usual weight

_____ Communicates recommended tube feeding regimen to physician/nurse.

PARKER RICHARDS

_____ Asks about current diet and knowledge of diabetic diet

_____ Asks about weight loss/usual weight

_____ Discusses typical day or 24 hour recall

_____ Addresses carbohydrates and carbohydrate counting

_____ Discusses goals for glycemic management and laboratory values (A1c, pre-prandial and post-prandial glucose)

_____ Asks about physical activity and exercise

_____ Asks about insulin regimen or plans for insulin at home

_____ Educates on hypoglycemia management

_____ Educates on sick day management

_____ Referral to outpatient dietitian

MILLIE THOMPSON

_____ Assesses tolerance of current diet/GI symptoms

_____ Asks for diet history/typical diet/24 hour recall

_____ Addresses weight loss and usual weight

_____ Educates on colostomy diet

_____ Addresses components of nutrition-focused physical exam (B12, iron, hydration)

_____ Discusses protein for healing from surgery

Appendix E: ADIME Standard Notes

Greg Peterson

A: Patient is a 60 y/o male admitted with aspiration pneumonia. Patient is paraplegic d/t MVA. He had a tracheostomy and PEG placed 10 years ago, but can communicate with a speaking valve. He receives bolus feedings TID at the nursing home where he resides, although he is unsure of the formula. He reports that he had recently began choking on feedings after meals. He is alert and oriented but experiences episodes of delirium. RD consulted to make EN recommendations.

Current Diet Order: NPO

Current EN Order: 250 mL bolus of Jevity 1 Cal TID via PEG, flush with 100 mL flushes water at feedings. Provides 795 kcal, 33 g protein, 926 mL total water, and 54% of amount to meet RDI's.

Anthropometrics: Ht. 5'10" (177.8 cm) Wt. 154 lb. (70 kg) BMI: 22.1 Normal Range UBW (per patient report): 160 lb. (72.7 kg)

Labs: Unavailable; BP 135/82 mmHg (pre-hypertensive)

Kcal needs: 1890-2100 kcal (27-30 kcal/kg); MSJ x 1.25 = 1900 kcal

Protein needs: 56-84 g (0.8 – 1.2 g/kg)

Fluid needs: 2100 mL (30 mL/kg)

D: NI 2.3 Inadequate enteral nutrition infusion related to poor feeding tolerance as evidenced by patient reports he has not received EN feeding since being admitted to hospital. Also, current EN order only meets 42% kcal, 59% protein, and 44% fluid needs.

NI 2.1 Inadequate oral intake related to feeding intolerance and aspiration pneumonia evidenced by need for nutrition via PEG and feedings currently being held.

I: Switch from bolus gastric feedings via PEG to continuous small bowel feedings. Suggest placing nasoenteric tube. Change EN order to: Jevity 1.5 @ 55 mL/hr continuous feeds, flushing with 275 mL water q 6 hrs. At goal, will provide 1980 kcal, 84 g protein, 2103 mL total water, 100% RDI's vitamins/minerals. Initiate at 20 mL/hr and increase by 20 mL/hr q 4 hrs until goal rate is achieved. Also, maintain head of bed elevated at least 30 to 45 degrees.

- If patient not tolerating EN due to fiber content, recommend Osmolite 1.5 @ 55 mL/hr continuous feeds, flushing with 275 mL water q 6 hrs.

M/E: This RD will monitor for placement of tube, initiation, and route of feeding. Once feedings begin, will monitor for signs of intolerance such as n/v/c/d, and further choking. Also monitor I/O, hydration status, weight/weight change, labs (Na, K, Mg, Phos, Alb).

Parker Richards

A: Patient is a 26 y/o male/female (depends on student) with **newly diagnosed Type 1 DM.** He was **admitted to the ICU with DKA** with BG 500 mg/dL and anion gap. Patient is currently stable and plans to d/c tomorrow; he requested nutrition education. RD was consulted for diabetic education.

Current Diet Order: Diabetic (unspecified)

Anthropometrics: Ht. 5'9" (175.3 cm) Wt. 142 lbs. (64.5 kg) BMI 21 (normal range)

UBW: ~145-150 lbs. per patient report

Labs: BG currently in normal range (was 500 mg/dL on admission)

Medications: Lantus, Regular Insulin with meals, SS insulin regimen (2-6 units)

Kcal Needs: male: 2480 – 2650 kcal (Harris-Benedict with AF 1.5-1.6); female; 2172 to 2315 (H-B for female with AF 1.5 to 1.6)

Protein: 93-133 g (15-20% kcal); will accept 1.0 to 1.3 g/kg = 64-83 g

Fluids: 1935 mL (30 mL/kg)

Diet History: Diet is high in processed and refined carbohydrates and in low-quality fats, while it is low in fruits, vegetables, whole grains, lean sources of protein, and higher quality fats such as omega-3's and MUFA. Patient eats out frequently and includes fast food.

Typical Day (per patient report):

Breakfast: sausage, egg and cheese biscuit with orange juice and coffee

Lunch: (eaten out with coworkers) cheeseburger and french fries or sub sandwich and chips

Dinner: meat, potatoes, vegetable, bread, and 2 or 3 beers

Snack: ice cream

Beverages: 12 oz. Pepsi in the afternoon

Physical Activity: Patient plays basketball 2 x/week with friends for 2 hours.

D: Impaired nutrient utilization related to insulin deficiency as evidenced by elevated glucose levels and DKA on admission.

Food and nutrition-related knowledge deficit related to lack exposure to diet education as evidenced by new diagnosis of Type 1 Diabetes and patient request for education.

Less than optimal intake of refined carbohydrates related to lack of knowledge about nutrition as evidenced by patient reports eating several servings of processed, refined, and high sugar foods in a typical day.

I:

- Goal in hospital will be to optimize glycemic control and provide adequate energy for metabolic needs. Recommend changing diet order from diabetic diet to: **2400-2700 kcal consistent carbohydrate diet (90 g/meal) if male; 2100 to 2400 kcal consistent carbohydrate diet (75 g/meal) if female.**
- This RD educated patient on carbohydrate counting, food/meal planning, management of short term illness, treatment of hypoglycemia, physical activity/exercise, and use of alcohol.
- This RD assisted patient in setting goals for managing disease:
    - Patient will monitor blood glucose 3-8 times per day with goal of pre-prandial glucose 70-130 mg/dL and peak post-prandial glucose <180 mg/dL. Discussed A1c goal of <7%.
    - Patient will consume meals and snacks at consistent times throughout the day with meal plan to include 5 carbohydrate choices at breakfast, 6 carbohydrate choices at lunch and dinner, and 2 carbohydrate choices for an afternoon and evening snack. Evening snack is to contain a source of protein. RD also discussed low glycemic index foods, whole grains, increasing fiber (25-30 g), and increasing good quality fats (omega-3's, MUFA). Patient will dose bolus insulin accordingly (1 unit per 15 g/carb choice).
- Patient will follow-up with outpatient dietitian (contact information provided). Suggest more in-depth education on carbohydrate counting and education on heart healthy eating pattern to reduce risk for CVD.

M&E: Future follow-ups: will monitor adherence to diet, ability to self monitor, weight, and labs (A1c, fasting blood glucose).

Millie Thompson

A: 70 y/o female admitted with ischemic bowel confirmed by KUB and CT. Currently POD #2 s/p bowel resection with permanent colostomy. Noted patient tested positive for C. Diff earlier this morning. PMH includes Crohns disease, CHF with murmur, arthritis, chronic back pain, anxiety, and depression. Patient has history of 11.3% weight loss in last couple months due to Crohns disease and recent surgery. She stated she was tolerating clear liquid diet until diarrhea started up.

Diet: clear liquid x 3 days

Anthropometrics: Ht. 5'2" (157.5 cm) Wt. 102 # (46.7 kg) BMI 18.7 (low normal)

UBW 115 lbs. (52.3 kg) per patient report

Labs:

Meds: has been on broad spectrum abx, lasix

Colostomy Output: varies

Nutrition Focused Physical Findings: Suspect B12 deficiency due to angular stomatitis, glossitis of tongue, patient report of tingling and numbness in extremities, and feeling of fatigue. Also noted patient with pale pallor and inner eyelids, indicative of iron deficiency. Patient's skin is dry with poor turgor, indicating dehydration.

Kcal Needs: 1400-1635 kcal (30-35 kcal/kg)

Protein: 61-79 g/day (1.3-1.7 g/kg)

Fluids: 1400 mL (30 mL/kg)

Diet History: Patient currently eating only jello and broth. Typical day at home per patient is low in calories, protein, and most essential nutrients.

Breakfast: piece of toast with jam and tea

Lunch: tomato soup and saltine crackers

Dinner: Patient's daughter usually prepares dinner. Sometimes they have chicken and rice or spaghetti.

D: Unintentional weight loss related to poor appetite and history of Crohn's disease as evidenced by 11% (5.3 kg) weight loss in last couple months and patient report of poor appetite.

I: Recommend advancing to full liquid diet with goal of low-fiber diet while in hospital. Educated patient on colostomy diet to decrease risk of obstruction, decrease output, and minimize flatulence. Also, discussed consuming adequate fluids for hydration and protein for healing. Suggested oral nutrition supplements for increased protein once diet is advanced from clear liquids. Recommend probiotic supplementation due to C. Diff infection. Also recommend B12 injection, iron supplementation, and multivitamin/mineral. If patient not able to consume adequate kcal and protein due to diet intolerance/C. Diff infection, recommend starting enteral feedings via nasojejunal tube.

M&E: Will follow up in 2 days to monitor diet tolerance and nutritional intake/need for enteral feedings. Will also monitor weight, weight loss, labs, colostomy output, and tolerance to iron and MV supplement.

Appendix F: ADIME Checklist

ADIME Checklist

Greg Peterson:

- _____ Admitting dx aspiration pneumonia
- _____ Trach and PEG Tube placed
- _____ Receives bolus feedings (TID) at nursing home
- _____ RD consulted to make EN Rec's
- _____ Current Diet Order NPO
- _____ Current EN Order (250 mL bolus Jevity 1 Cal TID; flush with 100 mL water @ feedings)
- What does current EN order provide (as amt or % of needs):
    - _____ Kcal (795)
    - _____ Protein (33 g)
    - _____ Fluid (926 mL)
    - _____ RDI Vitamins/minerals (54%)
- _____ Height 5'10" (177.8 cm)
- _____ Weight 154 # 70 kg
- _____ BMI 22.1
- _____ Kcal needs using MSJ x 1.2 to 1.4 OR 27-30 kcal/kg (189-2100 kcal)
- _____ Protein needs using 0.8 to 1.2 g/kg = 56 to 84 g
- _____ Fluid needs using 30 mL/kg or 1 mL/kcal
- _____ Diagnosis: Inadequate Enteral Nutrition Infusion
- _____ Diagnosis: Inadequate oral intake
- _____ Switch from bolus gastric feedings to continuous post-pyloric feeds
- _____ Change EN Order to: (has to make sense regarding needs)
- _____ Lists what new EN order would provide
- _____ Elevate HOB 30 to 45 degrees
- _____ Monitor for placement of tube/route of feeding
- _____ Monitor for initiation of EN
- _____ Monitor I/O's
- _____ Monitor Weight
- _____ Monitor Labs
- _____ Monitor tolerance to EN

Parker Richards:

- _____ Newly diagnosed Type I DM
- _____ Admitted with DKA
- _____ Current Diet Order Diabetic
- _____ Height 5’9” 175.3 cm
- _____ Wt 142 # 64.5 kg
- _____ BMI 21
- _____ Labs
- _____ Medications lantus, SS insulin
- _____ Kcal needs using H-B x 1.4 to 1.7 OR MSJ equation x 1.4 to 1.7
    - Should be ~ 2400 to 2700 kcal for male and 2100 to 2400 for female
- _____ Protein needs as 15 to 20% kcal or 1.2 to 1.5 g/kg
- _____ Fluids as 30 mL/kg or 1 mL/kcal
- _____ Evaluative statement of typical diet (does not just list diet hx)
- _____ Physical Activity
- _____ Diagnosis: Food and nutrition-related knowledge deficit
- _____ Educated on CHO Counting
- _____ Educated on tx of hypoglycemia
- _____ Educated on Physical activity/exercise
- _____ Set goals for monitoring blood glucose/Self-Monitoring
- _____ Lists meal plan with CHO choices/meal and snack
- _____ Follow up with outpatient RD or provided contact info
- _____ Monitor adherence to diet
- _____ Monitor weight
- _____ Monitor labs
- _____ Monitor ability to self monitor

Millie Thompson:

- _____ POD #2
- _____ Colostomy in place
- _____ PMH includes Crohn’s, etc.
- _____ Tested positive for C. Diff/C. Diff pending
- _____ ~11% weight loss
- _____ Current diet order clear liquid
- _____ Height 5’2” 157.5 cm
- _____ Wt 102# 46.7 kg
- _____ BMI 18.7
- _____ Meds broad spectrum abx, Lasix

- _____ Colostomy Output
- _____ Suspect B12 deficiency
- _____ Suspect Iron deficiency
- _____ Suspect Dehydration
- _____ Kcal needs as 30 to 35 kcal/kg (1400 to 1650)
- _____ Protein needs as 1.3 to 1.7 g/kg
- _____ Fluid needs as 30 mL/kg or 1 mL/kcal
- _____ Evaluative Statement of Typical Diet
- _____ Diagnosis: Unintentional weight loss
- _____ Recommend diet advancement (can be specific or not)
- _____ Educated on colostomy diet
- _____ Encouraged fluids for hydration
- _____ Discussed protein for healing after surgery
- _____ Oral Nutrition Supplements
- _____ Probiotic Supplement
- _____ B12 injection or Supplement; or Rec checking levels first
- _____ Iron supplement; or Rec checking levels first
- _____ Multivitamin/Mineral
- _____ Follow up in 1 to 3 days
- _____ Monitor weight
- _____ Monitor labs
- _____ Monitor colostomy output
- _____ Monitor intake/diet tolerance

Appendix G: Dietetics Students' Responses to Surveys

Table 1. Summary of dietetics students' responses to multiple-choice questions. (n=16)

	Pre-Test		Post-Test	
Question	**Correct**	**Incorrect**	**Correct**	**Incorrect**
1. Which of the following statements is NOT true regarding the patient assignment process for nurses? (Patients are determined to be at risk by screening process and RN is assigned to care for them.)	3 (18.8%)	13 (81.3%)	3 (18.8%)	13 (81.3%)
2. Sometimes the roles of the interprofessional team members overlap. Identify the situation where there is role overlap. (The nurse and dietitian provide diabetes education.)	11 (68.8%)	5 (31.3%)	11 (68.8%)	5 (31.3%)
3. A nurse recognized the dietitian had not been consulted by the physician to see a patient who was newly diagnosed with diabetes. The nurse contacted the dietitian and asked if she could make time to provide nutritional education before the patient was discharged. The nurse demonstrated which of the following? (Used full scope of knowledge, skills, and abilities of professionals.)	15 (93.8%)	1 (6.3%)	16 (100%)	0 (0%)
4. There is role overlap between the dietitian and the RN related to the administration of tube feeding. Which of the following statements is correct? (Making specific tube feeding recommendations is central to the role of the dietitian.)	10 (62.5%)	6 (32.5%)	11 (68.8%)	5 (31.3%)

*Correct answers in parentheses

Table 2. Summary of dietetics students' responses to questions on Likert scale. (n=16)

		Response Categories				
Question	**Survey**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
5. I understand the role of unlicensed nursing staff in patient care.	**Pre-Test**	1 (6.3%)	12 (75%)	1 (6.3%)	2 (12.5%)	0 (0%)
	Post-Test	2 (12.5%)	14 (87.5%)	0 (0%)	0 (0%)	0 (0%)
6. The role of other healthcare professionals has been addressed in my coursework.	**Pre-Test**	2 (12.5%)	7 (43.8%)	1 (6.3%)	6 (37.5%)	0
	Post-Test	1 (6.3%)	12 (75%)	1 (6.3%)	2 (12.5%)	0 (0%)
8 (13 on post-test). I am confident in my ability to effectively gather patient information from a medical chart and understand what other healthcare professionals are communicating.	**Pre-Test**	2 (12.5%)	14 (87.5%)	0 (0%)	0 (0%)	0 (0%)
	Post-Test	3 (18.8%)	13 (81.3%)	0 (0%)	0 (0%)	0 (0%)

9 (14 on post-test). I am confident in my ability to communicate patient care information to other healthcare professionals via the electronic medical record.	**Pre-Test**	1 (6.3%)	15 (93.8%)	0 (0%)	0 (0%)	0 (0%)
	Post-Test	5 (31.3%)	9 (56.3%)	2 (12.5%)	0 (0%)	0 (0%)
10 (15 on post-test). I am confident in my ability to communicate patient care information to other healthcare professionals via face to face interactions or on the phone.	**Pre-Test**	2 (12.5%)	12 (75.0%)	1 (6.3%)	1 (6.3%)	0 (0%)
	Post-Test	5 (31.3%)	10 (62.5%)	1 (6.3%)	0 (0%)	0 (0%)
11 (16 on post-test). I am confident in communicating my role as the nutrition expert to other professionals on the healthcare team.	**Pre-Test**	3 (18.8%)	12 (75.0%)	1 (6.3%)	0 (0%)	0 (0%)
	Post-Test	8 (50.0%)	8 (50.0%)	0 (0%)	0 (0%)	0 (0%)
12 (17 on post-test). It is important to collaborate with other healthcare professionals to provide effective patient care.	**Pre-Test**	14 (87.5%)	2 (12.5%)	0 (0%)	0 (0%)	0 (0%)
	Post-Test	13 (81.3%)	3 (18.8%)	0 (0%)	0 (0%)	0 (0%)
13 (18 on post-test). I have had the opportunities during my dietetic education to reflect on team performance with other professionals in order to determine how and where improvements in patient care can be made.	**Pre-Test**	2 (12.5%)	10 (62.5%)	3 (18.8%)	1 (6.3%)	0 (0%)
	Post-Test	4 (25.0%)	11 (68.8%)	0 (0%)	1 (6.3%)	0 (0%)
7 (post-test). Overall, the simulation was a valuable experience in helping me learn the role of other healthcare professionals in patient care.	**Post-Test**	3 (18.8%)	11 (68.8%)	1 (6.3%)	1 (6.3%)	0 (0%)
8 (post-test). The simulation enhanced my appreciation for interprofessional teamwork.	**Post-Test**	3 (18.8%)	12 (75.0%)	1 (6.3%)	0 (0%)	0 (0%)
19 (post-test). This activity enhanced my interprofessional communication skills.	**Post-Test**	4 (25.0%)	11 (68.8%)	1 (6.3%)	0 (0%)	0 (0%)

Table 3. Wilcoxon Signed Ranks Test for difference between pre-test and post-test answers.

Test or Question	p-value
Pre-test mean/Post-Test Mean	0.713
1 (pre-test)/1 (post-test)	1.000
2 (pre-test)/2 (post-test)	1.000
3 (pre-test)/3 (post-test)	0.317
4 (pre-test)/4 (post-test)	0.705
5 (pre-test)/5 (post-test)	0.084
6 (pre-test)/6 (post-test)	0.275

8 (pre-test)/13 (post-test)	0.655
9 (pre-test)/14 (post-test)	0.414
10 (pre-test)/15 (post-test)	0.160
11 (pre-test)/16 (post-test)	0.083
12 (pre-test)/17 (post-test)	0.655
13 (pre-test)/18 (post-test)	0.190

Level of significance set at $p<0.05$.

Table 4. Summary of dietetics students' responses regarding clinical experience. (n=16)

Question	**Response Categories**			
7. How may weeks of clinical rotations have you had in your dietetic internship?*	**0 weeks**	**1-6 weeks**	**6-12 weeks**	**12 weeks or more**
	0 (0%)	7 (43.8%)	0 (0%)	9 (56.3%)

*Refers to question 7 on pre-test.

Table 5. Kruskall-Wallis test for significant difference on survey scores regarding clinical experience.

Question	**Pre-Test p-value**	**Post-Test p-value**
1 (pre-test)/1 (post-test)	0.390	0.101
2 (pre-test)/2 (post-test)	0.056	0.211
3 (pre-test)/3 (post-test)	0.257	1.000
4 (pre-test)/4 (post-test)	0.705	0.392
5 (pre-test)/5 (post-test)	0.728	0.197
6 (pre-test)/6 (post-test)	0.955	0.296
7 (post-test)	n/a	0.137
8 (post-test)	n/a	0.208
8 (pre-test)/13 (post-test)	0.197	0.696
9 (pre-test)/14 (post-test)	0.378	0.812
10 (pre-test)/15 (post-test)	0.365	0.577
11 (pre-test)/16 (post-test)	0.059	0.626
12 (pre-test)/17 (post-test)	0.197	0.696
13 (pre-test)/18 (post-test)	0.463	0.242

Level of significance set at $p<0.05$.

Table 6. ADIME Notes (n=48)

Simulated Patient	Mean Percent Accuracy
Greg Peterson	69%
Parker Richards	74%
Millie Thompson	75%
Overall	73%

Table 7. Qualitative Analysis of Dietetics Students' Responses to Open-Ended Questions.

Pre-test question 14. What do you see as barriers to effectively communicating with other professionals?		
Themes Identified	**Number of Comments Identified with Theme**	**Responses**
Lack of understanding of and/or disrespect for others' roles	8	• "understanding what their roles are and respecting these roles" • "Not understanding the roles of other health professionals, disrespect, and close minded." • "Which responsibilities belong to specific healthcare professionals often remains unclear when it comes to providing effective patient care." • "Not having a clear understanding of roles. Lack of respect for other professionals." • "not knowing what skills and services other professions provide" • "Not realizing the scope of other professionals' skills and knowledge" • "Other professionals do not understand a Dietitian's job." • "It can be difficult to truly understand other professional's jobs and their scope of practice."
Inadequate time and/or high patient load	5	• "Time" • "High patient loads" • "Time" • "a busy work schedule and patient work load is one example." • "Feeling pressure for time – if you feel rushed or as if you don't have enough time before the next patient or doing the next tast, [sic] I don't think communication is as effective."

Use of professional jargon	2	• "Medical jargon specific to certain profession" • "Use of language specific to profession that other professions may not be familiar with"
Feeling disvalued and/or anxiety about feeling disvalued by others	2	• "Anxiety/nerves, not wanting to make other professionals feel like their education/expertise is being questioned." • "Lack of feeling valued"
Established hierarchies	2	• "There certainly seems to be a 'hierarchy' of healthcare professionals that often creates communication barriers." • "Also, seniority or medical hierarchy is probably another barrier if the person delivering the message feels inferior or as if they are a lower ranking member on the health care team. They may feel intimidated and therefore will not be as open or candid with their communication"
Electronic medical record miscommunications	1	• "Electronic medical records miscommunication/errors"

Post-test question 9. How did this experience help you learn more about your role within the healthcare team?		
Themes Identified	**Number of Comments Identified with Theme**	**Responses**
Learned own role in communicating with others	4	• "This experience allowed me to learn how to properly communicate with nurses and doctors and helped me learn about the place of an RD in an acute hospital setting." • "It helped me to understand how to communicate orders with a physician and how to interact with the nurses caring for a patient." • "saw the importance of communication between a dietitian and a nurse on a patient" • "This experience helped me learn more about my role because it encouraged me to communicate directly with the physician in certain instances where I wanted to make recommendations to change a patient's diet order or make recommendations for a tube feedings. In my previous clinical experience I did do this, but this simulation was a good way for me to practice communicating important messages to physicans [sic] instead of relying on the medical charts or RNs to convey information."

Learned how other healthcare professionals can use RD's assistance with patient care	2	• "This experience helped me to see where nurses/doctors need me to step in and use my expertise to help with the care plan" • "I learned more about how I can help nursing staff in my role and vice versa."
Emphasized teamwork	2	• "It [also] put me in difficult situations that made me rely on teamwork and the roles of other professions ex: nurses, physicians." • "It helped me to understand when I should consult other health professionals for efficent [sic] care."
Highlighted information other professionals can inform the RD of	1	• "Working with other professionals highlighted my responsibilities in patient care and some of the information that I needed to be informed of (like the finding of a pressure ulcer)."
Provided reminder of need to advocate for role as RD	1	• "It was a good reminder of the need to advocate for our roles as dietitians within the healthcare team. I think that many healthcare professionals are unaware of what dietitians have to offer, but I believe if given the chance and knowledge of our usefulness they would gladly utilize our skill set. It was a good remind of all dietitians do have to bring to the healthcare team."
Provided forum for positive feedback from other members of the healthcare team	1	• "It provided a forum for poositive [sic] feedback from other members of the interprofessional team."
Learned how others view the RD	2	• "It helped me realize how other people in the healthcare team view dietitians." • "I didn't realize how much nurses appreciated RD's until today, they love how we can spend more time and give them our full attention and care while we are talking to them and educating them."

Post-test question 10. How does interprofessional teamwork enhance quality patient care?		
Themes Identified	**Number of Comments Identified for Theme**	**Responses**
Allows for provision of patient-centered care to improve outcomes and/or reduce error	6	• "It all comes down to the patient. Our ability to communicate effectively is centered around better patient care at the end of the day, less hospitalization, less returns, and lower costs." • "All of the team members should be on board with the plan for patient care and be aware of what each person is doing or working on with the patient." • "Helps everyone to be on the same page with treatment

		plans and also helps to reduce errors." • "more effective in reaching a patient's goal" • "Teamwork with a patient focus is essential and leads to better patient care. Working together helps to prevent mistakes and ensure that all aspects of the patient are being considered." • "Working as a team interprofessionally truly allows the patient to be at the center of what we are doing and gives him/her the best care possible."
Combines expertise and different scopes of practice	5	• "Everyone has their own scope and expertise in a certain subject. By using all the expertise and skills, we can really make the best plan of care for the patient." • "A variety of professionals look at the patient through a different ""lens,"" so one professional may catch an issue that another professional seeing through a different lens may not catch. It is important for the professionals that are caring for a patient to communicate with one another so that optimal care is provided for that patient." • "All members of the team are give the responsibility to monitor patient care across professions." • "Since we are all experts in different areas, when we work together we combine our expertise and are able to help the patient in every way they need to be helped." • "So often I only see my patient through the lens of diet and nutrition. However, there are obviously so many other aspects to a person's health. When working interprofessionally, we gain knowledge about the patient by simply getting to look at a patient the way our coworkers do. This helps enhance how we treat our patients personally and allows us to integrate our care with the other professionals to avoid gaps and duplicating efforts. This brings about a more holistic patient care while aiding in efficiency as well."
Enhances provision of efficient, timely care for patient	1	• "Provides more efficient and timely care for the patient. Each team member communicates with one another to make sure the patient is receiving the care they need."

Post-test question 11. How will you apply what you learned during the simulation in your future career?		
Themes Identified	**Number of Comments Identified with Theme**	**Responses**
Will better be able to communicate with others and have more confidence in communication skills	8	• "I will know who to talk to when I need a specific item or when a certain task needs to be completed." • "I will now be more confident when speaking with nurses and when talking to doctors about consults they have requested." • "I won't be nervous about speaking up in group meetings, especially when I discover something the team should be aware of or if I'm concerned about something." • "I think that I will have a little more confidence when communicating with other professionals now that I understand my role as a dietitian and the role of nursing in caring for the patient." • "I will communicate openly with other members of the patient's healtcare [sic] team." • "be more open to talking with nurses about patients and obtaining certain information that will help me as a dietitian and assessing/counseling a patient" • "I will be less shy about talking to those in other health professions. I will be part of huddles and debriefs as often as possible. I will be sure to keep in mind how I can help other health professionals by anticipating their needs." • "I will be more willing to collaborate with other professionals in the future and encourage better communication among the health care team now that I understand it's importance for patient care."
Learned valuable clinical information for providing medical nutrition therapy and/or patient care	2	• "I learned some practical information about treating patients." • "This simulation was also a good environment to receive feedback from professors about my performance - it reaffirmed what I already knew and encouraged me to ask questions about things that I was uncertain about."
Will consult with others and/or seek others' help and resources	5	• "I will make sure to consult other interprofessions [sic] all the time. Nurses seem to be one of the best spokesperson for the pt." • "I will remember to seek help from other members of the healthcare team when I need it, and that it's ok to ask others for help." • "I will know how to manage multiple patients

		and contact other health professionals when needed." • "I will call on other health professionals when appropriate." • "In the future, I will be able to identify resources that are available to me in the form of other health care professionals."
Will build relationships and learn roles of others and/or focus on teamwork	2	• "I will build relationships with other team members and learn about their roles so that I can provide the best patient care." • "Knowing that teamwork is very important and necessary to get the patient to the point they need to be at to know how to take care of themselves after they leave the hospital."

Appendix H: Nursing Students' Responses to Surveys

Table 1. Summary of responses on evaluations

Question	Experimental (n=39)				Control (n=39)			
	Pre-test		Post-test		Pre-test		Post-Test	
	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
1. Dietitians are: (Nutrition experts on the healthcare team.)	38 (97.5%)	1 (2.6%)	38 (97.5%)	1 (2.6%)	36 (92.3%)	3 (7.7%)	37 (94.9%)	2 (5.1%)
2. Who is typically in charge of writing diet and enteral nutrition orders for patients? Who should be asked regarding recommendations for enteral nutrition formulas, tube placement, and regimen? (Physician; Dietitian)	29 (74.4%)	10 (25.6%)	28 (71.8%)	11 (28.2%)	29 (74.4%)	10 (25.4%)	32 (82.1%)	7 (17.9%)
3. Which is NOT a role of a clinical registered dietitian in an acute care setting? Choose the false statement. (Responsible for taking patient orders and delivering	37 (94.9%)	2 (5.1%)	33 (84.6%)	6 (15.4%)	33 (84.6%)	6 (15.4%)	34 (87.2%)	5 (12.8%)

trays.)								
4. All of the following are reasons a dietitian might be interested in obtaining an accurate weight for a patient EXCEPT: (choose the false statement). (To ensure medication dosages are appropriate.)	27 (69.2%)	12 (30.8%)	23 (59.0%)	16 (41.0%)	26 (66.7%)	13 (33.3%)	24 (61.5%)	15 (38.5%)
5. Which of the following might a dietitian recommend for a patient? (Probiotics to restore microflora.)	5 (12.8%)	34 (87.2%)	8 (20.5%)	31 (79.5%)	10 (25.6%)	29 (74.4%)	8 (20.5%)	31 (79.5%)
6. Which is not the role of the dietitian in caring for a person who has diabetes? Choose the incorrect statement. (Prescribe specific insulin regimens.)	32 (82.1%)	7 (17.9%)	32 (82.1%)	7 (17.9%)	32 (82.1%)	7 (17.9%)	31 (79.5%)	8 (20.5%)
7. A dietitian is seeing your patient post-operatively. The nurse can expect the dietitian to: (Encourage consumption	31 (79.5%)	8 (20.5%)	20 (51.3%)	19 (48.7%)	30 (76.9%)	9 (23.1%)	31 (79.5%)	8 (20.5%)

of adequate calories and protein for optimal healing.)								

Question	Group	Survey	Response Categories				
			Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
8. I have had the opportunity to collaborate with a dietitian to provide patient care in the past.	Experimental	Pre-test	2 (5.1%)	10 (25.6%)	11 (28.2%)	13 (33.3%)	3 (7.7%)
	Control	Pre-test	0 (0%)	8 (20.5%)	16 (41.0%)	12 (30.8%)	3 (7.7%)
9 (post-test). Overall, the simulation was a valuable experience in helping me learn the role of a dietitian in patient care.	Experimental	Post-test	26 (66.7%)	11 (28.2%)	2 (0%)	0 (0%)	0 (0%)
	Control	Post-Test	10 (25.6%)	10 (25.6%)	10 (25.6%)	6 (15.4%)	3 (7.7%)

Table 2. Independent groups t-test for comparing experimental vs. control scores on pretest and posttest questions 1-7

Test							
Pre-test	**Control Mean (n=39)**	**Std. Deviation**	**Std. Error**	**Experimental Mean (n=39)**	**Std. Deviation**	**Std. Error**	**p-value**
	72.1%	16.8	2.7	72.5%	15.6	2.5	0.911
Post-test	**Control Mean (n=39)**	**Std. Deviation**	**Std. Error**	**Experimental Mean (n=39)**	**Std. Deviation**	**Std. Error**	**p-value**
	72.4%	13.4	2.1	67.0%	19.7	3.2	0.160

Question	Group	Mean Response*	Std. Deviation	Std. Error	p-value
8 (pre-test)	Control	3.26	0.88	0.14	0.562
	Experimental	3.13	1.06	0.17	
9 (post-test)	Control	2.54	1.25	0.20	0.000
	Experimental	1.39	0.59	0.09	

Level of significance set at $p<0.05$

*1= Strongly Agree, 2= Agree, 3= Neutral, 4= Disagree, 5= Strongly Disagree

Qualitative analysis of nursing students' responses to open-ended question on surveys (experimental group only)

9 (pre-test). In your own words, describe what you think is the dietitian's role on the healthcare team.

Theme 1 (13 responses): Assesses dietary needs

- "I have never collaborated with a dietitian but I believe their main role is to assess the patient condition and their dietary needs based on their condition."
- "Aiding in the health care team with the dietary management of care."
- "To make assessments of patients' nutritional needs and provide feedback and evaluate patients' nutrition status."
- "The Dietitian's role is to assess the patients health concernes/issues [sic] regarding their nutrition while at the hospital and make sure that they are receiving adequate nutrition while they are at the hospital. It's also part of their role to provide education to the patient about the importance of nutrition and the purposes for their orders."
- "The dietitian can be consulted for any patient to assess their current eating habits and reccommend [sic] changes."
- "Assess, Recommend, Educate patients, physicans, [sic] other staff on dietary care plans for patients"
- "To recommend and evaluate nutritional needs based on patients various diagnoses and illnesses"
- "The dietician is the expert on nutrition related to health care needs. They recommend diets and assess patients' dietary needs.
- "They provide patient teaching about diet and exercise regimen specific to patient's diets."
- "To assess a patient's nutritional needs and if the patient is currently meeting them."
- "To assess for malnutrition, recommend TPN feeding kcals, and help with diabetic education.

- “The dietician's role is to assess nutritional needs, create meal plans and educate patient on food choices.
- “Managing a patients diet that is specifically tailored to that patient's specific needs.”

Theme 2 (7 responses): Optimizes nutrition and/or healing

- “Reference for the health care team to make suggestions and recommendations for optimal nutrition and healing for the patient while they are in the hospital”
- “I think dietitian's [sic] have a very important role on the healthcare team. Dietitian's [sic] are experts in nutrition and they can help makes make better nutritional decisions. Nutrition is very important in healing and for the overall health of a patient.”
- “The dietitian recognizes patients that are nutritionally at risk, and works with the patient and his or her health care team to provide an individualized diet plan
- “Dieticians are experts in maintaining proper nutrition”
- “The dietitian is there to provide expert guidance in determining the dietary needs relative the specific disease process or process of healing post procedures.
- “ensure adqeuate [sic] nutritional needs for the patient”
- “to provide excellent knowledge about a patients diet helping the patient maintain a healthy weight and promote healing”

Theme 3 (8 responses): Educates other healthcare professionals and/or patients on nutrition and make recommendations

- “The dietician can advise the health care team on nutritional needs for the patient. The dietician can also counsel patients to ensure they understand their diet needs and restrictions to encourage optimal health and healing”
- “The dietician is an expert when it comes to choosing types of food for specific patients, methods for encouraging patient to eat, and educating the patient on living a healthy lifestyle in relation to consumption.”
- “They are responsible for educating patients about their nutrition and diet regimens and how to adjust their diets after a diagnoses or surgery”
- “To provide recommendations for adequate nutritional intake.”
- “The dietician is a specialist who can recommend the dietary needs on a patient specific basis.”
- “Dietitan's [sic] work collaboratively with a team of physicians and nurses to provide education and assess nutritional needs for patients with specific diagnoses.”
- “The dietitian works with all other healthcare providers to recomend [sic] dietary supplements and nutrition based on the patients current diagnosis and nutritional intake.”
- “The dietician's role is to assess nutritional needs, create meal plans and educate patient on food choices”

Theme 4 (5 responses): Serves as reference for other healthcare professionals

- "I think they are a great point of reference and team member when around."
- "to help the doctor make nutrition decisions for patient and to do patient education regarding nutrition and food selection"
- "Provide expertise knowledge in nutritional based judgement" [sic]
- "The dietitian is a crucial component to the healthcare team. They work with other team members to individualize care for the patient to achieve best patient outcomes and use their expertise in nutrition to holistically contribute to patient goals."
- "The dietitian is a valued team member who coordinates patient care as it relates to nutrition. They are often consulted for items such as weight management and proper nutrition to manage a disease process."

Theme 5 (7 responses): Monitors and/or regulates nutritional intake of patients

- "Dietician's help control/manage/regulate a patient's diet regimen. They are vital in helping meet the patient's nutritional needs."
- "The dietition's [sic] role is to help monitor the patient's nutritional intake as well as be active in the patient's care providing recommendations to the rest of the health care team."
- "A dietitian helps ensure patients are receiving adequate nutrition, regardless of if they can speak for themselves or not. A dietitian can add extra knowledge about nutrition that physicians or nurses lack."
- "I think a dietitian's role is to help ensure the patient is recieving [sic] adequate nutrition based on current issues"
- "Ensure that patients are recieving [sic] adequate nutrition. Recommend specific diets and restrictions for patients."
- "The dietitian provides patients' nutritional needs (i.e. what type of diet they are on - Jevity 1.5 or Jevity 1.0)."
- "The dietician is responsible for monitoring the nutritional status of the patient and deciding what dietary requirements are needed"