Knowledge, Comfort Level and the Perceived Role of Nurses in Promoting Nutritional Management of Diabetes

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ABSTRACT
Knowledge, Comfort Level and the Perceived Role of Nurses in Promoting Nutritional Management of Diabetes
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Diabetes Mellitus affects 18 million people in the United States. While the responsibility of diabetes education lies primarily with registered dietitians (RDs) and certified diabetes educators (CDEs) these professionals may not be available to patients as often as nurses. Ninety percent of nurses report receiving requests for nutrition advice from patients. A review of the literature suggests the current knowledge level of nutritional management of diabetes may be low among nurses. The objective of this research was to investigate the knowledge, comfort level and perceived role among nursing students regarding nutritional facts and the nurse’s role in promoting nutritional management of diabetes.

Three focus groups were conducted with nursing students who had already completed the nutrition requirements for their program. Participants were recruited via flyers and mass emails. A trained moderator led each group using open-ended questions. Discussions were audio recorded, transcribed and analyzed. A survey was developed based on the American Diabetes Association’s nutrition guidelines and modified based on focus group results. The survey was then reviewed by a focus group expert, 2 doctoral nursing professionals and 2 Certified Diabetes Educators/Registered Dietitians and further modified as needed. The survey was administered via a mass emailing to all nursing students at Drexel University and nurses at Hahnemann University Hospital.
Seven to eleven nursing students participated in each of three focus groups. Analysis of focus group transcripts revealed 4 main themes: 1) nurses play a vital role in providing basic nutrition advice to patients with diabetes 2) nursing students were not confident that they could recall many details learned in nutrition courses 3) nursing students were generally comfortable giving basic nutrition advice but 4) they were not able to identify carbohydrate content of foods to give specific advice.

A total of 231 and nurses and nursing students participated in the survey. Survey results showed that 43% of respondents were not able to identify the carbohydrate content of 4oz orange juice and 56% did not consider milk a carbohydrate food. Thirty-one percent of respondents incorrectly selected one or more macronutrients to be excluded from diabetic meal plans and 50% of respondents were not aware that the carbohydrate content of foods is listed as “total carbohydrate” on food labels. Both focus group and survey results showed that greater than 80% of nurses and nursing students reported that when caring for a patient with diabetes nurses have a responsibility to provide and reinforce basic nutrition education and felt it is “very important” for nurses to have at least basic nutrition knowledge for diabetes management.

Nursing students perceive nurses to have an important role in promoting nutrition management of diabetes to patients however they are not able to consistently identify accurate carbohydrate content of foods. This study indicates there may be a need for better nutrition education of nurses and nursing students with respect to nutrition knowledge for diabetes management given the growing number of patients with diabetes.
CHAPTER 1: BACKGROUND AND LITERATURE SURVEY

1.1 Diabetes

In 2004, more than 70,000 non-traumatic amputations were performed in people with diabetes, a disease that is also the leading cause of kidney failure and blindness among adults. Diabetes, currently a leading cause of death in the United States, is an endocrine disorder characterized by elevated blood glucose levels due to a lack of insulin production in the body or the inability of present insulin to lower blood glucose levels (1). Diabetes currently affects approximately 18 million people in the United States and it is estimated that another 5.7 million people have undiagnosed diabetes (1, 2). The exact cause is unknown however many factors seem to put individuals at an increased risk for developing the condition. Risk factors include family history of diabetes, race, obesity, lack of physical activity, 40 years of age or older and stress (1, 3). If left untreated, people with diabetes are at an increased risk for developing serious complications of diabetes including heart disease, kidney failure, blindness and neuropathy (1, 3, 4). An individual’s risk for long-term complications can be greatly reduced by controlling blood sugar levels (1, 3, 4).

1.1.2 Hypoglycemia

Hypoglycemia is an acute medical issue that occurs when blood sugar levels fall below the recommended before and after meal levels. Individuals taking diabetes medications or insulin are at an increased risk for experiencing low blood sugar reactions compared to those who do not take insulin or diabetes medications (5). Hypoglycemia occurs when an individual’s blood sugar falls below 60-70ml/dl, likely causing symptoms
such as headache, dizziness, light headedness, shaky hands, confusion and seizures (6).

If hypoglycemia is not treated immediately the consequences may be coma or death (5, 6).

1.1.3 Diabetes Management

The American Association of Clinical Endocrinologists (AACE) has reported that 2 out of 3 people in the United States with type 2 diabetes are not managing their diabetes properly based on blood glucose goals (7). In Pennsylvania alone, 71% of people with type 2 diabetes have average blood sugar levels above target levels (7). The American Diabetes Association recommends that people with diabetes maintain blood glucose levels between 70 and 130mg/dl when fasting and less than 180mg/dl 2 hours after meals (post prandial) (8).

In order for patients to be able to manage their diabetes, they must receive education from the professionals involved in the healthcare team. However, the patient must be included as part of the healthcare team because diabetes is a self-managed disease and without the energy and commitment of the patient diabetes management becomes difficult. For patients to be able to self-manage their disease they must receive accurate diabetes education from the healthcare team. This includes the primary physician, nurse, certified diabetes education, registered dietitan, pharmacist, podiatrist, ophthalmologist and the patient (9).

According to the Standards of Medical Care for Diabetes, written by the American Diabetes Association (ADA), all diabetes patients should receive diabetes self-management education (DSME)(8). It is through DSME that patients learn the tools that
are needed to control their diabetes. Diabetes management tools include blood sugar monitoring, oral medications or insulin, meal planning, physical activity and stress management (8). When these tools are utilized on a regular basis, patients are more likely to achieve blood glucose levels at optimal or near optimal levels (4). However, utilizing diabetes management tools on a regular basis often requires many lifestyle changes for the patient. Changes for the patient include adjusting to testing their blood sugar daily, taking diabetes medication and or insulin, incorporating physical activity into their already busy schedules, and learning how to make smarter food choices. Because patients must make so many lifestyle changes in order to manage their diabetes, the healthcare team must play an active role in continually encouraging patients to follow the recommendations (4).

DSME programs must be accredited by an accrediting organization such as the American Association of Diabetes Educators (AADE), the American Diabetes Association (ADA) and the Indian Health Services (IHS). Together these organizations have accredited approximately 2,050 programs at over 3,000 sites in the U.S.

1.1.4 Nutritional Management of Diabetes

Carbohydrates

Nutrition intake is one of the most important components of Diabetes Self-Management Education (DSME) programs based on numerous evidence based research recommendations(1, 4). All foods containing carbohydrates are broken down into sugar (glucose) molecules during digestion which are moved into the blood stream causing increased blood sugar levels (4). Carbohydrate foods include bread, pasta, rice, cereal,
milk, fruit and starchy vegetables such as corn and peas, all of which are consumed daily by most people (4). Foods that contain minimal carbohydrates such as meat, fish, poultry, nuts, cheese and green beans, have little or no effect on blood sugar levels (4).

Often, people with diabetes assume that they must avoid all carbohydrate containing foods in order to minimize the risk of high blood sugar levels. However, glucose is the body’s preferred source of energy so patients need to be taught to include sufficient carbohydrate in each meal. It is recommended that people with diabetes consume a minimum of 130 grams of carbohydrate daily (4). This baseline recommendation is based on the amount of energy the brain needs to function throughout the day (4). When spread throughout the day, an individual can tolerate 130 grams of carbohydrate or more, depending on weight and activity level. However, if an individual (non-athlete) consumes 130 grams of carbohydrate in one meal their blood sugar levels will increase above the recommended range.

Meal Planning

Meal planning plays a major role in the nutritional management of diabetes by guiding individuals to spread their carbohydrate intake throughout the day. Meal planning is a nutrition tool that patients with diabetes can use to develop healthy nutrition habits. Meal planning is also important because it allows people with diabetes to have control and flexibility over what they eat by consuming appropriate portion sizes of both carbohydrate foods and non-carbohydrate foods (6). Planning meals with appropriate portion sizes is a major step toward achieving good nutrition habits which will help to maintain normal or near normal blood sugar levels (10). When blood sugar goals are reached, the risk of developing major complications of diabetes is reduced (11). Thus, it
may be possible to reduce diabetes healthcare costs by using good nutrition to improve blood sugar control and reduce the risks of major complications of diabetes.

Nutrition in Diabetes Self-Management Education Programs

When patients attend DSME programs they are taught the following nutrition topics: 1) nutrients in food and their effect on blood glucose levels, 2) carbohydrate counting and exchanges, 3) the plate method and portion control, 4) food labels, 5) alcohol and 6) sweeteners. Carbohydrate counting is one of the main focuses of the nutrition education component. It is a technique used for meal planning to keep track of how many carbohydrates are consumed at each meal or snack. On average, it is recommended that people with diabetes consume about 45-60 grams of carbohydrate per meal when eating 3 meals per day. This range may be higher or lower when individualized based on age, gender and weight goal. Patients are taught how to read food labels to determine the amount of carbohydrate in foods. The American Diabetes Association provides a list of foods that contain about 15 grams of carbohydrate, a key number when carbohydrate counting. Many basic foods contain about 15 grams of carbohydrate including a slice of bread, a small (4 ounce) piece of fruit, one-half cup oatmeal and 8 ounces of milk. Participants at DSME classes are taught to plan their meals by choosing foods with carbohydrate that add up to the recommended total amount of carbohydrate per meal that has been established by diabetes education or dietitian (6).

Carbohydrate Exchanges

Another method taught is use of Carbohydrate Exchange Lists (12). This method does not require use of food labels which is helpful because there are many times when a
The Diabetes Teaching Center at the University of California describes carbohydrate exchanges, or the “exchange system”, as a method that groups together foods with a similar amount of carbohydrate. Foods within the same group can be “exchanged” for one another during a meal because they are similar in carbohydrate content. According to this system, one carbohydrate exchange is equivalent to 15 grams of carbohydrate. This method allows the individual to be flexible in their food choices. For example, 2 chips-ahoy cookies have about 15 grams of carbohydrate (or 1 carbohydrate exchange) which is similar to 8 ounces of milk. Thus, an 8 ounce glass of milk could be exchanged for 2 chips-ahoy cookies without affecting the total carbohydrate intake. Since the total amount of carbohydrate consumed at one meal is generally more important than the type consumed, this exchange would be appropriate (6, 13).

The Plate Method

“The Plate Method”, or “Create Your Plate”, is a quick and simple meal planning technique used to estimate appropriate portion sizes in a meal. First, patients are taught to fill one half of their plate with non-starchy vegetables, vegetables with little or no carbohydrate content. Examples of non-starchy vegetables include spinach, lettuce, green beans, broccoli, peppers and cucumbers. The remaining half of the plate is then divided in half again so that there are two quarters of the plate left. One quarter should be filled with protein and the one quarter should be filled with carbohydrate. Carbohydrate foods would include foods such as whole grain pasta, potatoes or rice. Protein foods would include such foods as lean meat, poultry or fish, eggs, cheese or tofu. When using The Plate Method it is important to count the carbohydrate content of foods
that are placed around your plate. For example, an 8 ounce glass of milk and ½ cup of fruit is recommended in order to include all food groups at each meal. Since each of these foods is considered 1 carbohydrate exchange, an individual could exchange these for 2 carbohydrate exchanges (30 grams of carbohydrate) of pasta or rice (14, 15). Use of The Plate Method, carbohydrate counting and carbohydrate exchange lists represent the methods available and recommended by the American Diabetes Association for use by people with diabetes when meal planning

1.1.5 Economic Impact of Diabetes

The Centers for Disease Control and Prevention (CDC) reported that in 2007 the total cost of healthcare for diabetes was $174 billion (2, 16). Medical costs for diabetes accounted for $116 billion, or 66%, of total healthcare costs for diabetes care. Medical costs include inpatient care in hospitals, diabetes medication and supplies, prescriptions to treat diabetes complications and physician office visits (16). As noted earlier, people with diabetes have increased risk of developing chronic complications resulting from poor diabetes management. These complications require healthcare attention and often result in longer length of hospital stay (up to 50% longer) requiring additional healthcare costs (16). This data emphasizes an economic need for proper diabetes management. Hospital admissions, length of hospital stay and healthcare costs may be reduced with improved diabetes control with sufficient education delivered to patients from the healthcare team.
1.2 The Role of Health Care Professionals

Registered Dietitians

Registered Dietitians (RDs) are licensed healthcare professionals qualified and trained to provide nutrition therapy. When a dietitian is consulted in acute and long term healthcare facilities, it is the dietitian’s responsibility to conduct a nutrition assessment and develop a nutrition intervention and plan for monitoring and evaluating the patient. One of the challenges dietitians face when providing nutrition education in the hospital setting is that patients with diabetes often have several coexisting medical conditions. There may only be enough time for the dietitian to conduct the initial assessment and nutrition education before the patient is discharged (17). Another challenge for nutrition education for the hospitalized patient is that RDs typically work 40 hours per week and often are not staffed during evening and weekend hours.

Certified Diabetes Educators

Certified Diabetes Educators (CDEs) are healthcare professionals whose work focuses on providing diabetes education to people with pre-diabetes or diabetes and relevant caregivers. To qualify to take the Certification Examination for Diabetes Educators healthcare professionals must meet specific criteria from the National Certification Board of Diabetes Educators. To summarize, individuals must be a licensed healthcare professional (clinical psychologist, registered nurse, registered dietitian, occupational therapist, optometrist, pharmacist, physical therapist, physical or podiatrist) or healthcare professional with a minimum of a master’s degree in social work, nutrition, health education or public health. After meeting the appropriate discipline requirements,
individuals must also meet requirements for professional practice experience. This includes a minimum of 2 years working in one’s discipline, a minimum of 1000 hours of DSME experience of which 40% of these hours must have been accrued in the most recent year prior to applying for the certification exam and a minimum of 15 hours of continuing education activities within the past 2 years prior to application.

The responsibility of promoting the nutritional management of diabetes among patients is primarily held by Certified Diabetes Educators (CDEs) and Registered Dietitians (RDs), but they are not always available for patients to consult. In a hospital or long-term care setting, CDEs and RDs usually are not on staff during evening hours and may not be available at all during weekends. The need for diabetes care does not stop when nutrition professionals are not available and so diabetes care requires involvement of all members of the diabetes healthcare team.

According to the Bureau of Labor Statistics the largest healthcare occupation is nursing accounting for approximately 2.6 million jobs in the U.S. in 2008 with an expected growth of 22% by 2018. Registered Dietitians (RDs) accounted for approximately 60,300 jobs in the U.S. in 2008 with an expected growth of only 9% by 2018. The American Association of Diabetes Educators (AACE) reports that there are approximately 15,000 certified diabetes educators practicing in the U.S (19). Clearly, the number of nurses far exceeds the number of dietitians and certified educators combined.

The Centers for Disease Control and Prevention has reported that the number of hospital discharges with diabetes as any-listed diagnosis has more than doubled from 1980 to 2006 rising from 2.2 million to 5.2 million (20). As the number of hospitalized
individuals with diabetes rises, nurses become more likely to encounter patients with diabetes. As part of the healthcare team, nurses are staffed 24 hours per day and 7 days each week which allows nurses to have constant access to these patients. It is common for nursing staff to assist patients with meals and snacks. Approximately 90% of nurses receive regular requests for nutrition advice from patients (21, 22). Therefore, nurses should have at least a basic knowledge level of the nutrition guidelines for diabetes management so that they can provide all patients with appropriate assistance with meals and snacks and accurately respond to patient questions.

The nursing protocol for diabetes in adults, written by the Georgia Department of Community Health (23) includes goals for medical nutrition therapy, assessment of effectiveness of meal plan and addressing nutrition changes. The protocol also suggests use of The Plate Method, also known as Create Your Plate, nationally accepted by the American Diabetes Association as described above.

Nursing students are expected to have some nutrition knowledge based on the nutrition content on the National Council Licensure Examination for Registered Nurses (NCLEX-RN®). Prior to obtaining licensure to practice, eligible nurses must pass the NCLEX-RN® examination which includes nutrition and oral hydration under the category of ‘basic care and comfort’ (24).

A study by Siminerio et al. (25) showed that nursing professionals from 13 countries across Asia, Australia, Europe and North America believe that nurses should have a larger role in diabetes care (25). Most of the nurse respondents in this study reported willingness to take on more responsibility for diabetes care and that nurses are
more likely than physicians to give dietary advice for diabetes. All nurses in the study reported a high need for increased training in diabetes management (25).

1.2.1 Hypoglycemia: Role of Nurses

Nursing professionals are responsible for helping patients test blood glucose levels and administer insulin and diabetes medications. Again, individuals who take diabetes medication or insulin are at a higher risk for hypoglycemia (5). When left untreated, hypoglycemia will lead to confusion, dizziness, coma and death (5, 6). These serious consequences indicate the need for nursing professionals to understand the risk, symptoms and nutritional treatment of hypoglycemia.

When individuals experience hypoglycemia, nutritional treatment requires the consumption of approximately 15 grams of fast-acting carbohydrate which may include 3-4 glucose tablets, 1 tube of glucose gel or 4 ounces of juice or regular soda (10). The type of food consumed is extremely important because it must be able to raise blood sugar levels quickly. For example, some people may consider a candy bar to be a good option because of the high sugar content. A candy bar would actually be a poor choice for the treatment of hypoglycemia because of the high fat content which slows down the rate of glucose entering the blood stream while in the meantime blood sugar levels could drop even lower. In addition to consideration of the source of carbohydrate, the total amount of carbohydrate should be considered as well. Too little carbohydrate may not be enough to return blood sugar levels to normal levels and too much carbohydrate may result in hyperglycemia, elevated blood glucose levels. After nutritional treatment has been administered, the individual should be sure to eat a meal within the next hour or, if the next meal is several hours away, the individual should eat a carbohydrate containing
snack to maintain their blood sugar level. Clearly, nutrition plays an important role in diabetes management and treatment for hypoglycemia. It is within the nursing scope of practice to treat patients with hypoglycemia. Thus, it is important that nurses are aware of how to treat hypoglycemic reactions with appropriate nutrition in order to reduce the risk of serious consequences including confusion, coma and death (1, 4, 6).

1.2.2 General Nutrition Knowledge Levels among Nurses

When using the term “general nutrition” the authors of this study are referring to nutrition knowledge that is not related or focused on nutritional management of diabetes. The term “general nutrition knowledge” has also been used in the literature and refers to studies assessing nutrition knowledge of a variety of basic nutrition aspects which have assessed the following topics: prevention of cardiovascular disease, functions of vitamins and minerals, nutrition during lactation, food policy, food preparation, and food-labeling information. Studies assessing general nutrition knowledge among nurses also included areas such as nutrition screening, nutrition support and malnutrition. Questions related to diabetes management among these studies were limited to none. These studies have shown that general nutrition knowledge among nurses may be lacking (21, 26-37).

A 32-item questionnaire was used to assess attitude of nutrition knowledge and knowledge of nutrition problems and treatment among 4,512 physicians and nurses. This large population of physicians and nurses reported that insufficient nutrition knowledge was the greatest cause of inadequate nutritional practice (30) which suggests there is a need to improve knowledge levels in order to reduce inadequate nutrition practices. A study by Riva Touger-Decker et al. supports the need to improve nutrition education among nurses. Using a 4 page survey, developed based on competence statements from
the American Diabetes Association position paper on nutrition education of healthcare professionals, it was found that more than half of nursing program directors reported the need to have more nutrition education in their nursing program (35). The authors of this study suggest that it is important to determine the nutritional knowledge needs and nutritional competency levels of nursing students at various university level institutions (35).

In order to assess general nutrition knowledge among nurses in Victoria, Australia, a validated instrument by Henderson-Sabry et al. (26) was modified by Schaller and James (21). The final version of the modified instrument consisted of 48 questions assessing nutrition principles and food policy, nutrition during the life cycle, cultural nutrition and the role of diet and disease. The questionnaire was completed by 103 registered nurses between ages 26 and 50 years old who scored an average of 60.2% out of total possible score of 100%. Older nurses with more experience scored higher than younger nurses with less experience (21), a relationship that has been shown in other studies as well (27, 37). These results showed that approximately 90% of nurse respondents reported having requests from patients for nutrition advice (21). This data supports the importance of nurses needing to have at least basic nutrition knowledge and suggests that there may be a need for increasing nutrition education in nursing programs so that younger nurses have a better baseline of nutrition knowledge when entering the field.

Lindseth (37) also modified and used the Henderson-Sabry survey to assess general nutrition knowledge among nurses. Graduating nurses greater than 26 years of age score significantly higher than nurses 25 years and younger (P=0.05). Nurses with
more years of work experience in healthcare scored significantly higher than those with less work experience in healthcare (P=0.03). The mean nutrition knowledge score was 60% out of a total possible score of 100% which is similar to the mean score of 60.2% found by Schaller and James using the same, but slightly modified, survey (21, 37).

Another survey instrument used to assess general nutrition knowledge is the Nutrition Test-Item Bank developed by the University of Alabama in Birmingham School of Medicine (36). Warber et al. administered the Nutrition Test-Item Bank to assess general nutrition knowledge among adult and family certified nurse practitioners with a master’s degree or nursing certificate (33). The Nutrition Test-Item Bank included 55 questions based on basic nutrition knowledge of cardiovascular disease, food preparation, menu planning, food labels and healthy food choices. A total of 68 nurse practitioners completed the survey with an average test score of 66%. As noted by the authors, one limitation of this study was the possibility that those who completed the survey may have had higher nutrition knowledge than those who did not complete the survey. An implication of this study, also described by the authors, is that nutrition education should be emphasized in nursing education programs to provide nursing professionals with basic nutrition skills (33).

Ozcelyk et al. developed a 20-item questionnaire assessing general nutrition knowledge covering a variety of nutrition topics. The results showed that greater than 90% of nurses correctly answered questions about appropriate methods for weight loss, building blocks of proteins, mineral in bone formation and foods for cancer prevention. About 50% or less of nurses correctly answered questions about low glycemic index foods, foods that affect cholesterol and body mass index classifications. Nutrition
knowledge scores were significantly higher among nurses with more experience. The authors suggested that improving nutrition education in nursing programs would likely increase nutritional knowledge levels among nurses (34) which may improve nutrition practice among nurses.

Crogan et al. utilized a 50-item survey, developed by registered nurses and registered dietitians, to assess nurses’ knowledge of nutritional deficiencies of institutionalized older adults (13 items), nutritional status of aging adults (18 items), protein-energy malnutrition in older adults (6 items) and principles of nutrition assessment (13 items). Mean score for nurses was 65% based on a total possible score of 100%. Registered nurses scored significantly higher than licensed practicing nurses. Overall the results showed that nurses may lack sufficient knowledge of nutrition status in older adults (32).

Cadman and Findlay assessed the change in nutrition knowledge among practicing nurses following training from a registered dietitian. The nutrition questionnaire utilized assessed nurses’ perceptions of their nutrition knowledge and confidence as well as their actual nutrition knowledge. The nutrition training consisted of eight 1-hour sessions to educate nurses on nutrition counseling, healthy eating, obesity, diabetes and heart disease, nutrition for older adults, pediatric nutrition and vegetarianism. Nurses completed the same questionnaire pre and post training sessions. After completing the nutrition training sessions, 88% of nurses reported “excellent” or “good” confidence in their nutrition knowledge compared to 27% prior to the nutrition training (P<0.001) (31). Actual knowledge scores were also increased on an average of
11.6 percentage points. These results suggest that nutrition interventions from registered dietitians may be beneficial to improve nutrition knowledge among nurses.

Overall, the studies assessing general nutrition knowledge among nurses have focused on cardiovascular disease, vitamins and mineral function, nutrition throughout the life-cycle, malnutrition, food preparation, and food labels. Questions related to diabetes management among these studies were limited to none. These studies have shown that general nutrition knowledge among nurses may be lacking which could suggest that nutrition knowledge related to diabetes management is lacking as well.

1.2.3 General Diabetes Knowledge Levels Among Nurses

When using the term “general diabetes” the authors of this study are referring to diabetes knowledge that is not related or focused on the nutritional management of diabetes. The term “general diabetes knowledge” has also been used in the literature and refers to studies assessing knowledge of diabetes related topics including blood sugar monitoring, hypoglycemia, diabetes medications and insulin. Several survey instruments have been developed to assess general diabetes knowledge among nurses. For example, a 21-item questionnaire was developed by a team of endocrinologists, medical residents and a diabetes educator to assess general diabetes knowledge among nurses (48) and medical residents (115). This questionnaire covered topics such as diagnostic criteria of diabetes, blood pressure goals, insulin and treatment for hypoglycemia and perioperative management. The results showed that the mean score among nurses was 66% out of a total 100% and that nurses scored significantly higher than physicians. Nurses scored slightly lower on a 20-item Diabetes Survival Skills Knowledge Test (DKSST) developed by Modic et al. The DKSST consisted of only 2 diet-related questions and 18
questions related to diabetes medications, blood glucose monitoring and symptom and insulin management. Ninety nurses participated in the DKSST with a total mean score of 50 percent. The mean score for diet-related questions was 20% which was the lowest mean score compared to mean scores of all other topics on the questionnaire. There was a significant relationship between increased years working as a nurse and increased mean scores as well as between increased age and increased mean scores (P<0.05)(38).

Trepp et al. (39) developed and administered a 42-item questionnaire based on questionnaires developed by Derr et al.(40) and Rubin et al (41). This questionnaire covered the topics of insulin therapy and diabetes medications, hypoglycemia and diabetes complications. A total of 232 medical and nursing staff completed the questionnaire for a total mean score of 43%. Among nurses and nursing students the total mean score was 41% and 40% (respectively). The mean scores of this test were lower than the previously noted studies with mean test scores from 50% to 66%. Unlike the findings from the DKSST, this study showed no significant difference between scores among nurses and nursing students.

A 36-item questionnaire was administered by Knight et al. to assess diabetes knowledge of medical and nursing staff. The questionnaire, completed by 86 nursing staff, covered topics including basic theory of diabetes, insulin, symptoms and management of hyperglycemia and hypoglycemia, basics of carbohydrate exchanges and diet. Seventy-percent had incorrect responses to questions about carbohydrate exchanges and 86% incorrectly responded to questions about the description of a diabetes diet. Results were not stratified by group (physicians and nurses) so these scores could be skewed by percentage of incorrect answers by physicians (42). The results of the studies
reviewed here collectively suggest that there may be a knowledge gap among nurses regarding general diabetes knowledge (41).

Only one study was found that assessed diabetes knowledge among senior nursing students. A 34-item questionnaire was administered by Feustel (43) to senior nursing students. Of the 34 questions, there were only 10 questions focusing on nutrition related to a diabetes diet. A total of 144 nursing students participated. The total percentage of students who correctly answered each nutrition-related question ranged from 0.7% to 22.3% suggesting that there may be limited knowledge among nursing students regarding nutritional management of diabetes.

**Perceived Versus Actual Knowledge**

A review of the literature suggests that nurses may have higher perceived knowledge than actual knowledge pertaining to nutrition and diabetes. El-Deirawi and Zuraikat (44) used a Diabetes Basic Knowledge Test (DBKT) developed by Drass et al. (45) to assess perceived and actual knowledge of diabetes among Registered Nurses (RNs). Seventy-nine nurses participated in the study. The results showed that approximately 80% of nurses practicing in a community hospital and home healthcare agency had not attended a diabetes education in-service in over 2 years attended or had not attended a diabetes education in-service ever (44). Only 9% were able to identify the appropriate treatment for hypoglycemia. The mean score of the DBKT was approximately 72% out of 100%. Actual knowledge was significantly related to perceived knowledge. There was also a significant relationship between higher education and higher scores (P<0.001). Baxley et al. also used the DBKT to assess perceived and actual knowledge of diabetes management among nursing staff at an acute-care hospital
in the United States (28). This time, the DBKT was completed by 32 staff nurses who had an average score of 88% for perceived knowledge and 75% for actual knowledge. Only 53% of respondents considered themselves competent in diabetes knowledge. Alarmingly, only 7 of 32 nurse respondents (22%) knew the nutritional treatment for hypoglycemic reactions (28). While this study was limited, the results suggest there may be a need for diabetes and nutrition education among nurses, who often encounter patients with diabetes and hypoglycemia.

*Continuing Education for Diabetes*

Using a 35-item questionnaire based on client lifestyle and behavior change, McDonald et al. found that of 103 nurses who reported that they provide diabetes care, 28% had not received diabetes education updates in the past 2 to 15 years (29). A study by Baxley et al. also showed that 44% of respondents had not received a diabetes in-service in over 2 years (28). This is a concern because nutrition guidelines for diabetes management are continually updated and health professionals are responsible for staying current with the most current information.

*Instruments Developed for Assessing Diabetes Knowledge*

Additional instruments developed for assessing diabetes knowledge include a 16-item questionnaire, “Test Your Diabetes Knowledge”, developed by Husband et al. and is available by the Canadian Diabetes Association. The questionnaire consists of 3-diet focused questions while the remaining focus on general diabetes management, prevalence of type 1 diabetes and blood glucose monitoring and management (46).
Association, has a Diabetes Knowledge Test available on their website (47). This test consists of 25 questions assessing general diabetes knowledge and 5 questions assessing knowledge of insulin. Nine of the total 30 questions are diet focused while the remaining questions focus on diabetes symptoms, blood glucose management, exercise, diabetes complications and insulin.

An expert panel at the Michigan Diabetes Research and Training Center has also developed an instrument to assess diabetes knowledge known as the Diabetes Knowledge Test (DKT). The DKT consists of 14-items assessing general knowledge of diabetes and 9-items assessing knowledge of insulin. Of the 14-items assessing general knowledge a total of 6 questions were diet focused. The reliability and validity of this DKT was evaluated by Fitzgerald et al. and administered to people with diabetes in a community in Michigan (48). Mean scores for general test items ranged from 66-88%. The DKT was found to be both reliable and valid ($\alpha \geq 0.70$).

The survey instruments reviewed here assessed general diabetes knowledge including topics such as diagnostic criteria for diabetes, insulin and diabetes medications, blood glucose monitoring and management and perceived and actual knowledge. Several studies included a few nutrition questions related to diabetes management but no studies focused on nutritional management for diabetes. Each of the study’s results showed that there exists a knowledge gap of diabetes knowledge among nurses.

1.2.4 Knowledge of Nutrition for Diabetes Management Among Nurses

There appear to be low levels of general nutrition knowledge and general diabetes knowledge among nursing professionals. It is important to gain an understanding of the combined knowledge levels that nurses have specific to the nutritional management of
diabetes. A few studies have suggested that nutrition knowledge for diabetes treatment and management may be low among nurses (27, 29, 43). Feustel’s study showed that, on a 35-item questionnaire containing 10 nutritional questions related to a diabetic diet, the number of students who correctly answered a nutritional question did not exceed 23% of total respondents on any nutritional question (43). A 20-item Diabetes Survival Skills Knowledge Test (DKSST), showed that only an average of 20% out of a total of 90 nurses were able to correctly answer nutrition related questions (38). This 20-item DKSST included mostly general diabetes questions and only a few nutrition related questions. There remains a need for studies focusing on nutrition related to diabetes.

1.2.5 Surveys Evaluating Nurses’ Knowledge of Nutrition for Diabetes Management

Uses of surveys in the literature that examine diabetes knowledge among nurses tend to focus on one of two areas: general diabetes knowledge or general nutrition knowledge. Surveys that focus on general diabetes knowledge contain only a few questions, if any, related to nutritional management of diabetes. Surveys that focus on general diabetes knowledge, such as the survey used by Knight et al. (42) and Michigan Diabetes Research and Training Center (48), cover topics such as diabetes medications, insulin therapy, blood glucose monitoring and hypoglycemia with only a few nutrition related questions. General nutrition surveys also cover topics such as nutrition in the life cycle, the role of diet and disease and food policy. Schaller et al. used a survey based on basic nutrition principles, cultural nutrition, role of diet and disease and food policy (21). The survey used by Warber et al. examined nutrition for cardiovascular disease, food labeling and nutritious food selections (33). Crogan et al. used a survey to examine
nutrition knowledge among nursing staff in nursing homes but was not diabetes related (32).

1.3 Drexel University College of Nursing and Health Professions

Drexel University’s College of Nursing and Health Professions (CoNHP) is home to approximately 2,000 nursing students including approximately 1,150 undergraduate and 800 graduate nursing students. CoNHP offers a wide range of healthcare programs and has been educating nursing students for over 130 years. CoNHP students have many options for learning as CoNHP provides both on-campus and online programs including more than 20 fully online programs that provide both clinical and didactic coursework(49). Undergraduate nursing students have a choice between the BSN Co-operative (Co-op) program and BSN Accelerated Career Entry Degree (ACE) program. All Co-op nursing students are required to take two nutrition courses within their first two years of the program: Nutrition Principles and Nutrition in the Life Cycle. ACE students take the equivalent of these courses prior to applying to the program. The majority of nurses receive requests from patients for nutrition advice. Thus, it is important to determine nursing students’ nutrition knowledge to assess the need to improve nutrition education in nursing programs. With the prevalence of diabetes increasing, it is likely that graduating nursing students entering their first jobs as nurses will encounter patients with diabetes. People with diabetes often have several co-morbidities and so even if the patient is not admitted to the hospital with a primary diagnosis of diabetes it is likely that many patients will have diabetes in their medical history. Some studies have shown that there is a significant relationship between years of work experience or age and survey scores assessing nutrition knowledge and diabetes knowledge among nurses (21, 27, 34,
This suggests that nutrition education may need to be improved so that younger nurses with less experience have improved nutrition and diabetes knowledge. At least one study has shown that there was no significant relationship between years of experience and knowledge levels (39). This suggests that nursing students who lack nutrition knowledge may not learn nutrition through experience as a nurse which places a greater emphasis on adequate nutrition education in nursing programs. Studies that focus on nursing students are needed in order to determine the importance and adequacy of nutrition education in nursing programs.

1.4 Use of Focus Groups and Surveys

Focus groups, known as group interviews, are a qualitative research tool used to bring together participants to meet as a group with trained experts to discuss a particular subject (50). Focus groups allow individuals to express their concerns, experiences, attitudes and beliefs related to the topic of interest (50) and may also provide unanticipated and useful results. This type of qualitative data is often lacking from other methods of collecting data such as surveys and questionnaires. Focus groups may be conducted for several purposes: (1) to create a hypothesis for a new research area, (2) to interpret survey responses, (3) to offer insight into research findings, and (4) to assist with program development and evaluation.

Focus groups have been utilized in many areas including nursing, nutrition and diabetes research. For example, researchers have used focus groups to understand the barriers among nurses to using evidence-based nursing practices (51), to determine patient preferences for diabetes self-management programs among patients with diabetes (52), and to determine nursing students’ perceptions of online nursing programs (53).
The qualitative information obtained from focus groups in these studies is valuable and may not have been possible to obtain with other methods of research such as surveys or questionnaires.

Surveys are a quantitative research tool that can be used to identify demographic information about a population, knowledge of a topic or attitude toward a particular issue (54). Surveys can be administered by hand, telephone, mail or electronically. Electronic surveys offer several advantages including: 1) they can be administered to a large population, 2) participants may complete the survey at their own convenience, and 3) inexpensive. Numerous studies have utilized surveys to assess both diabetes knowledge and nutrition knowledge among nurses (28, 44, 45).

1.5 Summary of Literature Review

Both the number of people diagnosed with diabetes and those who are hospitalized continue to rise (20). The entire healthcare team is responsible for providing the standards of medical care to patients with diabetes however there may be a knowledge gap among nurses. The literature consists of studies and surveys that focus on general diabetes knowledge (42, 55) or general nutrition knowledge among nurses (21, 33, 37). The results of these studies have consistently suggested that among nurses, general knowledge levels of diabetes and nutrition are suboptimal, especially among younger nurses with the least work experience. The majority of the studies reviewed assess the knowledge levels among nurses instead of nursing students. No studies reviewed focus solely on the current knowledge level of nutrition for the management of diabetes among nurses or nursing students.
1.6 Rationale and Significance

Managing diabetes can be overwhelming for individuals as they often have to adapt to many lifestyle changes including diet, exercise, blood sugar monitoring, medications and stress management. Diabetes management can become even more difficult when individuals receive dietary advice that is not accurate. A review of the literature indicates that general diabetes and general nutrition knowledge levels are low among nurses. Low knowledge levels of nutrition for diabetes management could lead to patients receiving inaccurate information causing patients to follow inappropriate dietary recommendations. This can lead to an increase in diabetes complications and healthcare costs when patients with diabetes are hospitalized or placed in long-term care facilities.

Nurses have been described as the patients’ first line of defense to making sure patients receive the best care for their disease (56). In hospitalized settings nurses are available to patients 24 hours per day and are often asked for nutrition advice from their patients. Patients generally see nurses more than any other healthcare professionals and so patients may also learn to trust the nurses more than other healthcare professionals. Therefore, it is likely that if a nurse gives incorrect nutrition advice to a patient, it may be remembered and put into practice by that patient. The patient may then share this inaccurate advice with other people with diabetes. In a world where the internet, marketing ads and television talk shows are dominating sources of nutrition information, and often inaccurate nutrition information, it is imperative that nurses are able to give accurate advice.

While it would be helpful if all nurses had a basic nutrition knowledge for all disease states, it is critical that they have at least a basic knowledge of nutrition for
diabetes management in order to help reduce the incidence of diabetes complications such as amputations, blindness and kidney failure. Of course, it is noted that nurses are extremely busy and have a very large scope of practice. However, if a nurse has time to tell a patient incorrectly, for example, that “sugar-free” cookies won’t raise their blood sugar then one would think that nurses would have the same amount of time to accurately tell a patient, for example, that “sugar-free” cookies do contain carbohydrate and will raise blood sugar levels. Simple steps such as this could go a long way in helping to lower incidence of diabetes related complications.

Limited studies have evaluated knowledge levels of nutritional management of diabetes among nursing students. This information would be helpful to determine if an intervention is needed to increase knowledge levels among nursing students so that they will be prepared to enter the field as a nurse and give accurate nutrition advice to patients with diabetes. An improvement in nutrition advice to patients with diabetes may lead to a reduction in diabetes complications and diabetes healthcare costs.
Chapter 2. Knowledge, Comfort Level and the Perceived Role of Nurses in Promoting Nutritional Management of Diabetes

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ABSTRACT

Knowledge, Comfort Level and the Perceived Role of Nurses in Promoting Nutritional Management of Diabetes

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Ninety percent of nurses report receiving requests for nutrition advice from patients. A review of the literature suggests knowledge of nutrition for diabetes management is low among nurses.

Objective: To investigate the knowledge, comfort level and perceived role among nursing students regarding nutritional facts and the nurse’s role in promoting nutritional management of diabetes.

Research Design and Methods: Three focus groups were conducted with nursing students. Focus group results were used to develop a survey which was administered to nurses and nursing students to assess attitude and knowledge levels.

Results: Undergraduate nursing students (N=28) participated in three focus groups. A total of 231 subjects (151 nurses and 80 nursing students) participated in the survey. Greater than 80% of nursing students reported that when caring for patients with diabetes nurses have an important role in reinforcing nutrition education to patients. Fifty-one percent of nurses and 44% of students were not able to identify carbohydrate content of 4oz orange juice. Twenty-three percent and 35% incorrectly indicated that one or more macronutrients should be excluded from diabetic meal plans and greater than 50% did not know where to locate carbohydrate content of foods on a food label. When asked to select
the best treatment for symptomatic hypoglycemia 34% and 61% (respectively) of nurses and students incorrectly selected ice cream, cake or a candy bar instead of glucose tablets indicating that approximately $\frac{1}{3}$rd or more of nurses and nursing students may not be aware of the appropriate treatment for hypoglycemia.

**Conclusion:** This study indicates there may be a need for improving education of nurses with respect to nutrition knowledge for diabetes management.
2.1 INTRODUCTION

Diabetes Mellitus (DM) affects 18 million people in the United States (U.S.), is a leading cause of death and is associated with serious complications such as heart disease, blindness, kidney failure and body limb amputations. People with diabetes can reduce their risk of developing diabetes related complications by maintaining normal or near normal blood glucose levels (1). In order to learn how to manage blood glucose levels patients are encouraged to attend diabetes self-management programs (DSME) taught by physicians, nurses, certified diabetes educators, dietitians and other healthcare professionals (10). One of the most important components of DSME is nutrition. Nutrition education includes teaching patients meal planning techniques, carbohydrate counting and exchanges, how to read food labels, use of sweeteners and the plate method (6). While the responsibility of nutrition education for diabetes management lies primarily with registered dietitians (RDs) and certified diabetes educators (CDEs) these professionals may not be available to patients as often as nurses. There are 40 times more nurses than dietitians and 100 times more nurses than certified diabetes educators in the U.S. (18). Studies have shown that 90% of nurses reported receiving requests for nutrition advice from patients. However, a review of the literature suggests the current knowledge level of nutritional management of DM is low among nurses.

The purpose of the study was to investigate nurses’ and nursing students’ knowledge, comfort level and the perceived role of nurses in the nutritional management of diabetes. Focus groups and a survey were used to collect qualitative and quantitative data regarding nurses’ and nursing students’ knowledge, confidence and perceived role of
nurses of the nutritional management of diabetes. The study protocol was approved by Drexel University’s Institutional Review Board (IRB).

2.2 Research Design and Methods

2.2.1 Focus Groups

Participants were self-selected, responding to either an email invitation (Appendix A) or flyers (Appendix B) posted on a university campus. Flyers were posted in buildings utilized frequently by nursing students. All flyers included the title of the study, eligibility criteria, explanation to interested volunteers to self-select themselves based on the eligibility criteria listed, compensation, researcher’s contact information and stamp of approval from the IRB. Prior to posting the flyers, a stamp of approval was received from Student Services at Drexel University’s College of Nursing and Health Professions (CoNHP). Permission was received to make copies of the stamped flyer. Email invitations were sent via a mass emailing to all nursing students with approval from the Provost and assistance from Drexel University’s Office of Information Resources and Technology (IRT). The researchers of the study complied with IRT’s policies for the distribution of mass emails (57). Interested students contacted the researchers almost immediately following distribution of the mass email. The mass emailing to students seemed to be much more effective than the flyers. Word of mouth was also utilized to recruit students by attending a nursing class and a meeting for the Undergraduate Nursing Diversity Organization.

Inclusion criteria for participants: 18 years or older and either a junior or senior nursing student in Co-operative program (Co-op) or any level student in the Accelerated
Career Entry Degree (ACE) program. The sample was limited to junior or senior nursing students in the Co-op program and all ACE students because these students would have completed their nutrition requirements for the nursing program. Co-op students are required to complete 2 nutrition courses during their freshman and sophomore year while ACE students are required to complete 1 nutrition course prior to beginning Drexel’s nursing program.

Interested students contacted the researchers via telephone. Eligibility was confirmed via a telephone screening questionnaire (Appendix C) and again prior to the focus group session using a brief screening questionnaire (Appendix D). Only the first name and telephone number of participants were recorded. First names and telephone numbers were used to make reminder phone calls to each student within 48 hours prior to each focus group. The final list of participants for each focus group was used as a check-off list to ensure that the people who showed up for the focus group were the same people who had completed the telephone eligibility screeners. Only two individuals attended a focus group who had not previously signed up via telephone. The screening questionnaires were conducted with these students prior to their participation in the focus group. Following each focus group, telephone numbers and names were destroyed.

At the beginning of each focus group, participants were informed of the following: that their participation was voluntary, that they were free to leave at any time without consequence, that they did not have to answer any questions that they were not comfortable answering and that there were no right or wrong answers. The participants were also informed that the discussion was audio recorded and that results would be kept anonymous.
Three focus groups were conducted with eligible nursing students from Drexel University’s CoNHP nursing programs. Focus groups were held in January and February of 2010 each lasting no longer than 90 minutes. All focus groups were held on Drexel University’s Center City Campus in the New College Building Room 3204 based on this being a convenient location for nursing students.

Following a brief screening upon arrival, participants were asked to complete a short questionnaire (Appendix E) which familiarized the participants with the discussion topic. The questionnaire also provided data on participants’ opinions prior to being influenced by a group discussion. The questionnaire consisted of the following three questions 1) In your opinion, what is the role of nurses in providing general nutrition advice in healthcare settings?, 2) In your opinion, what is the role of nurses in providing nutrition advice for diabetes in healthcare settings? and 3) Explain how you would respond to a patient who has asked you for nutrition advice.

The focus group moderator was a Drexel University graduate student who had previously completed a university course involving training and experience in moderating focus groups. The moderator had no nutrition or diabetes background which allowed her to have an unbiased approach toward the topic. The graduate student researcher of this study, who also completed a university course on focus groups, observed each focus group discussion while taking field notes.

Participants were seated in a circular arrangement so that each participant’s voice could be heard and body language seen. Participants were asked to wear a name tag to enhance group discussion. Name tags were destroyed at the end of the focus groups. Each focus group session began with an introductory statement by the moderator and a
welcoming message to the participants. Participants were informed that the session was audio recorded and were reassured that the results were kept anonymous. The moderator explained that all participants were encouraged to share their opinions but could refrain from answering any question they were not comfortable answering.

After the introduction, the moderator used a questioning route (Appendix F) that was developed by the researchers of this study. The questioning route included a list of open-ended questions for the purpose of directing each focus group discussion and maintaining consistency of questions asked to each group. The list of questions consisted of opening, introductory, key, ending and conclusion questions. The opening question invited all participants to introduce themselves and state their current status in their nursing program. Introductory questions were related to the topic and prompted the participants to think about the focus group topic. Key questions focused on nursing students’ comfort level, perceived confidence and perceived role of nurses in giving nutrition advice to patients with diabetes. Ending questions prompted participants to list 3 words or phrases to summarize their perceived role of nurses in giving nutrition advice to patients with diabetes and if there were any other issues they would have liked to discuss. Finally, the participants’ thoughts and ideas were summarized and the moderator asked for any additional input that they would like to share. The participants were thanked for sharing their time and opinions. At the end of each focus group, each participant received a $40 cash payment for their participation.

2.2.2 Survey

Recruitment of participants to complete the survey was done using a mass email (Appendix G) sent to approximately 2,000 Drexel nursing students and 350 nurses at
Hahnemann University Hospital. The researchers complied with IRT and Hahnemann University Hospital policies on distributing mass emails. The email included the eligibility criteria, explanation to interested volunteers to self-select themselves based on eligibility criteria listed, incentive, researcher’s contact information and statement of approval from Drexel University’s Institutional Review Board. Inclusion criteria included: 18 years or older AND 1 of the following: nursing student at Drexel University or a registered or licensed nurse. Interested subjects were prompted to click the survey link within the email only if they consented to participate in the survey. At the end of the survey, participants were asked whether or not they would like provide their email to be entered in the drawing for $100. Participants were given the option of clicking “no” if they chose not to submit their email address. At that point, the participant was directed to the final page of the survey thanking them for their time. All surveys were anonymous except for the responders who submitted their email address voluntarily. These email addresses were obtained for the sole purpose of informing the winner of random drawing for the $100 incentive that he or she has been selected.

Survey Development and Administration

The survey of this study focused specifically on the attitude and current knowledge level among nurses and nursing students regarding the nutritional management of diabetes. The survey was developed by the researchers of this study based on the American Diabetes Association nutrition guidelines (6) and review of surveys found in the literature that focus on diabetes and/or nutrition knowledge levels among nurses (33, 34, 38, 42, 46-48). After completion and analysis of the focus groups, the survey was modified based on the results of the focus group discussions. For
example, many participants in the focus groups suggested that the carbohydrate content of whole milk is much greater than the carbohydrate content in low-fat or nonfat milk. Carbohydrate content is actually the same in milk regardless of the fat content and so this belief was formulated into a question format and added to the survey. The survey was then reviewed by a focus group expert, members of the Drexel nursing faculty and two Certified Diabetes Educators/Registered Dietitians for content validity and clarity. Appropriate changes were made based on the reviewers’ feedback. Several questions were eliminated from the survey if they were interpreted differently by reviewers indicating unreliability. The survey was pilot tested with graduate nutrition students who had received similar diabetes education as nursing students. Nutrition students reported that it took approximately 10-15 minutes to complete the survey. The approved survey was administered to Drexel nutrition students to determine the length required to complete the survey and to assess perception of survey questions. The final instrument was a 36-item survey (Appendix H) including 7 demographic questions, 9 attitude questions and 20 knowledge questions.

After receiving IRB approval for the final version of the survey, a mass email was used to distribute the survey to all Drexel Nursing students and nurses at Hahnemann University Hospital (HUH). The researchers complied with all IRT and hospital policies regarding mass email distribution. The mass email contained a link to the online survey and participants were asked to click on the survey link to complete the study.

2.3 Data Analysis

Each focus group discussion was audio recorded. Once the focus groups were completed the audio recordings were transferred onto a laptop using the program Express
After transferring the audio recordings onto the computer the recordings were erased from the recording device. The discussions were transcribed and transcripts (Appendices I-K) were printed.

The researchers used a qualitative analysis process, described by Krueger and Casey (59), to analyze the transcripts. This method involved thoroughly reading and re-reading the transcripts of each focus group. Highlighting pens and markers were used to highlight and organize the participants' comments into categories of information.

Survey results were analyzed using Predictive Analysis Software (PASW) Statistics 18 and Microsoft Excel. Descriptive statistics including frequencies and percentages were used to interpret the results. The one-way analysis of variance testing was used to compare mean scores between groups. The Pearson correlation was used to describe relationships between responses and nurses and students.

2.4 RESULTS

2.4.1 Focus Group Results

A total of 36 nursing students (7-11 per group) participated in the focus groups. Each group included nursing students from both the 5-year Co-op program and the accelerated degree (ACE) program.

Based on results from the questionnaire administered at the beginning of each focus group, nursing students perceived nurses to have an important role in promoting healthy eating and in giving nutrition advice to patients with diabetes. These comments were similar to comments made during each focus group indicating that nursing students’
perspectives were not influenced by discussing the topic in front of their peers during the focus group sessions.

The focus group discussions yielded four main themes of information: 1) nutrition education 2) perceived role of nurses in nutritional management of diabetes 3) perceived knowledge and comfort level of nutrition for diabetes management and 4) inaccurate nutrition statements.

*Nutrition Education*

The nutrition education category included all comments related to nutrition education in nursing students’ current nursing program as well as suggestions for improvement. Drexel nursing students in the Co-op program confirmed that they were required to complete 2 nutrition courses during their 1st and 2nd year of the undergraduate Co-op nursing program. Nursing students in the ACE program confirmed that they were required to take 1 nutrition course prior to beginning the ACE nursing program. Nursing students in both the Co-op and ACE programs reported that additional nutrition education was received in clinical classes and clinical rotations throughout their student career. Few nursing students felt that nutrition is adequately covered in their nursing program, with the majority of nursing students feeling that nutrition was only “touched upon” during clinical nursing classes while discussing various disease states. Nursing students also reported that hands-on nutrition learning during clinical rotations was helpful but varies among student experiences and could be improved by implementing nutrition related objectives to the clinical rotation requirements.

When nursing students were asked how nutrition education could be improved within the nursing program, their suggestions included lectures, role playing activities
and incorporating additional nutrition examples during clinical classes and rotations. Nursing students also expressed interest in attending classes and lectures taught by dietitians rather than learning nutrition from nurses alone. These results indicated that nursing students learn nutrition primarily during nutrition course requirements which consists of 1 (ACE) or 2 (Co-op) nutrition courses. Additional nutrition information may be learned in clinical classes and rotations but varies among individual experiences. Nutrition objectives may be helpful to enhance nutrition learning during clinical rotations and nursing students may benefit from classes or lectures taught by registered dietitians.

The Role of Nurses in Promoting Nutritional Management for Diabetes

The majority of nursing students were aware that diabetes is prevalent and may be encountered in many healthcare settings. Nursing students stated that, “this [diabetes] is a disease we’re going to see coming through the door every day”. Nursing students agreed that, “sometimes you don’t have the luxury of having a dietitian”. Because dietitians and diabetes educators are not always available to give nutrition advice, nursing students felt that nurses have an important role in giving nutritional advice to patients with diabetes. The perceived role of nurses among nursing students was also to emphasize and reinforce nutrition information that may have already been taught by the physician, dietitian or diabetes educator. Nursing students agreed that in order to reinforce nutrition information to patients, a minimum of basic knowledge is necessary. Nursing students also agreed that the role of nurses is to provide total patient care which includes assisting with meals and educating patients about all aspects of their disease including basic nutrition information.
When asked to list three words or phrases to describe the role of nurses in promoting nutritional management of diabetes, 86% of participants listed at least one of the following: 1) to educate patients, 2) to reinforce nutrition information and 3) that their role in giving nutrition advice to patients is important or necessary. These results indicate that nursing students strongly believe that giving nutrition education to patients with diabetes is part of the nursing scope of practice.

Perceived Comfort and Knowledge Level

Nursing students described their current knowledge level as “minimal” and “not good” to “fair” or “good”. The majority of nursing students reported feeling comfortable giving basic nutrition advice to patients with diabetes but that they would refer to a dietitian to give specific, detailed nutrition information. Nursing students reported that they are trained primarily to treat “crisis” situations such as hypoglycemia and may not be as well trained to treat daily blood sugar management. These results indicate that nursing students feel most comfortable with basic nutrition knowledge and are likely to refer to dietitians or other resources for specific nutrition information related to diabetes.

Inaccurate Nutrition Statements

Though many nursing students report feeling comfortable when giving nutrition advice to patients with diabetes, they are not able to correctly identify the carbohydrate content of several foods. In general, nursing students in this study have inaccurate knowledge of the carbohydrate content of milk. While some nursing students are unaware that milk contains carbohydrate, others stated that whole milk contains more carbohydrate than nonfat or low-fat milk. When presented with a breakfast meal
consisting of bran cereal with milk, berries and 4oz of orange juice, nursing students stated that the bran cereal and berries would have a minimal effect on blood sugar levels.

Many nursing students stated that if a patient receives insulin injections then the patient may eat unlimited amounts of carbohydrate because the nurse will just “fix” their blood sugar by giving insulin.

In terms of treating hypoglycemia, one student reported that if a patient’s blood sugar was below 50, they would inform the patient to “add sugar to the cereal”. These results suggest that nursing students’ perceived knowledge level may be greater than their actual knowledge level of basic nutrition for diabetes management.

*Nutrition Terms*

When the focus group questioning route was originally developed a goal was to determine currently used and preferred terminology used to describe a diet appropriate for a patient with diabetes. This information was to be incorporated on the survey tool to ensure that the terminology used on the survey would be appropriate for a nursing population. The information was also to be used to determine if nursing students were familiar with the American Diabetes Association’s terminology that uses terms and phrases such as “healthy eating” and “healthy food choices” (6).

Nursing students were presented with a list of diet terms in which they were to identify which term they were most likely to use when describing the appropriate diet to a patient with diabetes. The diet terms included 1) Diabetes Diet 2) ADA Diet 3) Low Carbohydrate Diet 4) Well-Balanced Diet 5) Healthy Eating for Diabetes and 6) Healthy Eating for Diabetes Management. Overall, nursing students preferred the term “healthy eating for diabetes management” because it was the most comprehensive term, described
the appropriate lifestyle in a positive manner and did not include the word “diet”. Nursing students were least likely to use the term “ADA diet” mostly because they felt patients would not be familiar with the meaning of the acronym. Several nursing students were not aware of the meaning of “ADA”. Those who knew “ADA” to be the acronym for the American Diabetes Association were more likely to use this term to describe a diet for a patient with diabetes because it references a nationally respected organization that provides credited information for diabetes management. This topic could have been translated into a question for use on the survey however it was determined that the purpose of the study was to identify knowledge of nutrition in regards to diabetes management. The researchers of this study felt that with the final survey consisting of close to 40 questions already that it was not imperative to include an additional question regarding diet terminology.

The results of the focus group discussion regarding nutritional terms showed that the majority of nursing students disliked the term “diabetes diet” and other terms that included the word “diet” which is consistent with the ADA who does not support the use of the term “diabetes diet”. Unfortunately, many students were not aware of the meaning of “ADA” acronym for the American Diabetes Association which is a concern because the ADA is a valuable resource for both healthcare professionals and people with diabetes.

2.4.2 Survey Results

A mass email with the survey link was initially sent to approximately 2,000 nursing students over a 2 week period. This population included both undergraduate and graduate students. During this 2-week period there was a response rate of approximately
9% out of the 2,000 undergraduate and graduate nursing students. A second mass email with the survey link was then sent to approximately 350 nurses working at Hahnemann University Hospital. Within this population there was a response rate of 15% out of the 350 nurses.

A total of 231 individuals participated in the study. The demographic results showed that all graduate level nursing students, who participated in the study, had also worked as a nurse or were currently working as a nurse. For analysis purposes, the graduate level nursing students were counted as nurse. This accounted for a total of 151 nurse participants. The remaining 80 participants were undergraduate nursing students. The results are therefore grouped into results among nurses (including graduate students) versus nursing students (undergraduates only). Table 1 shows the demographic characteristics of respondents.

<table>
<thead>
<tr>
<th>Table 1. Demographics of survey respondents</th>
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<tr>
<td>Characteristic</td>
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<td>----------------------------------------</td>
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<tr>
<td>Total</td>
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<tr>
<td>Male, %</td>
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<tr>
<td>Female, %</td>
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<tr>
<td>Mean Age (years)</td>
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<tr>
<td>Mean Number of Nutrition Courses Taken</td>
</tr>
<tr>
<td>Enrolled in Graduate School, %</td>
</tr>
<tr>
<td>Co-op Program, %</td>
</tr>
<tr>
<td>ACE Program, %</td>
</tr>
<tr>
<td>Undergraduate Students</td>
</tr>
<tr>
<td>1st year, %</td>
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<tr>
<td>2nd year, %</td>
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<tr>
<td>3rd year, %</td>
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<tr>
<td>4th year, %</td>
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<tr>
<td>5th year or above, %</td>
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</tbody>
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The survey consisted of 20 knowledge questions. One point was given for each correct answer. Some questions had multiple correct answers and so one point was given for each correct answer within the question. There was a total possible score of 37 points which was equivalent to a score of 100%. A mean score of 53% was achieved among nurses and a mean score of 50% was achieved among nursing students (P > 0.05). Nursing students in the Co-op program had a mean score of 53% and nursing students in the ACE program had a mean score of 51% (P > 0.05).

Attitude

The survey consisted of 9 attitude questions. As shown in Table 2, the majority (69%) of nurses and nursing students rated their knowledge of nutritional management of diabetes as “good” or “excellent”. Forty-four percent of nurse respondents and forty-three percent of student respondents were “very” or “moderately” confident in providing nutrition advice to people with diabetes. About fifty percent of both nurse and student respondents were only “somewhat” or “not” confident.
Table 2. Attitude Questions

<table>
<thead>
<tr>
<th>Attitude Responses</th>
<th>% Nurses (N=151)</th>
<th>% Students (N=80)</th>
</tr>
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<tbody>
<tr>
<td><strong>Perceived Knowledge</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excellent/good</td>
<td>69</td>
<td>63</td>
</tr>
<tr>
<td>Fair/poor</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td><strong>Satisfaction of Nutrition Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very satisfied/satisfied</td>
<td>74</td>
<td>83</td>
</tr>
<tr>
<td><strong>Perceived Responsibility of Nurses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic nutrition education</td>
<td>72</td>
<td>86*</td>
</tr>
<tr>
<td>Comprehensive nutrition education</td>
<td>21</td>
<td>29</td>
</tr>
<tr>
<td>Reinforce nutrition education</td>
<td>86</td>
<td>83</td>
</tr>
<tr>
<td>Provide initial nutrition education</td>
<td>38</td>
<td>49</td>
</tr>
<tr>
<td>Assist with meals</td>
<td>60</td>
<td>81*</td>
</tr>
<tr>
<td>Treating high/low blood sugars</td>
<td>91</td>
<td>84</td>
</tr>
<tr>
<td>Teach daily management</td>
<td>72</td>
<td>85*</td>
</tr>
<tr>
<td>Patient discharge education</td>
<td>63</td>
<td>78*</td>
</tr>
<tr>
<td>Not responsible</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td><strong>Importance for Nurses to have Basic Knowledge</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not/somewhat</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Very/moderately</td>
<td>92</td>
<td>96</td>
</tr>
<tr>
<td><strong>Nurses responsibility to Give Nutrition Advice to Patients with Diabetes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not/somewhat</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>Very/moderately</td>
<td>77</td>
<td>88</td>
</tr>
<tr>
<td><strong>Confident Giving Nutrition Advice</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not/somewhat</td>
<td>52</td>
<td>54</td>
</tr>
<tr>
<td>Very/moderately</td>
<td>44</td>
<td>43</td>
</tr>
<tr>
<td><strong>Patients’ Compliance with Diabetes Meal Plans</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To a great extent/Somewhat</td>
<td>58</td>
<td>64</td>
</tr>
<tr>
<td>Very little/Not sure</td>
<td>38</td>
<td>33</td>
</tr>
<tr>
<td><strong>Patients who Receive Adequate Education/Support to Follow a Diabetes Meal Plan</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All/Majority</td>
<td>22</td>
<td>16</td>
</tr>
<tr>
<td>Few/None</td>
<td>62</td>
<td>53</td>
</tr>
<tr>
<td><strong>Familiar with “The Plate Method”</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, comfortable</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>No, never heard this term</td>
<td>64</td>
<td>65</td>
</tr>
</tbody>
</table>

*P<0.05

Greater than 70% of nurse and nursing student respondents were satisfied with the nutrition education received during their nursing program and reported that when caring
for a patient with diabetes, the role of nurses is to 1) provide basic nutrition education 2) reinforce nutrition education 3) treat high and low blood glucose levels and 4) teach daily management of diabetes. Approximately 60% and 80% (respectively) of nurses and nursing students believe that nurses have a responsibility to assist patients with meals and provide nutrition education to each patient upon their discharge from the hospital setting. Less than 30% of both nurse and nursing student respondents reported that they are responsible for comprehensive nutrition education. There was a significantly greater (P<0.05) percentage of nursing students compared to percentage of nurses who reported nurses are responsible for the following: 1) basic nutrition education, 2) assisting with patient meals, 3) teaching daily management of diabetes and 4) patient discharge education.

Approximately 60% of respondents from both groups felt that patients “greatly” or “somewhat” adhere to a diabetes meal plan. Greater than 50% of respondents from both groups believe that “few” or “none” of patients receive adequate education and support for following a diabetes meal. Approximately 65% of both groups had never heard of “The Plate Method”. Overall, these results indicate that in general nurses and nursing students believe that nutrition management of diabetes is within their scope of practice. See Table 2 for results of Attitude Questions.

Knowledge of Basic Meal Planning

The survey consisted of 20 knowledge questions assessing knowledge of basic meal planning, carbohydrate content of foods and hypoglycemia. When nurses were asked what is the primary resource used when a patient asks for nutrition advice, the majority (42%) reported using the dietitian as a resource, 34% reported patient teaching
materials, 12% reported using scholarly websites or nutrition fact sheets and only 2% reported using other nurses as a resource. Similarly, 45% of nursing students reported using patient teaching materials and only 4% refer to other nurses. A higher percentage of nursing students reported using scholarly websites and nutrition fact sheets which is appropriate for nursing students who are in school and have easy access to lecture materials and online resources. A lower percentage of nursing students reported using dietitians (15%) compared to nurses. Again, this is reasonable considering that nursing students have limited access to dietitians during their nursing program.

As described in table 3, when assessing knowledge of basic meal planning for people with diabetes, it was found that the majority (77% nurses, 65% students) correctly identified that no nutrients should be excluded from meals. Only 34% of nurses and 30% of nursing students correctly selected that “45-65 grams” carbohydrate should generally be included at each meal. Forty-six percent of nurse respondents and 34% of nursing student respondents were unaware of where to find the total carbohydrate listed on the food label and thought that the listed “sugars” on the food label should be added to “total carbohydrate” to determine the amount of carbohydrate per serving of a food item. Significantly more nurses (58%) compared to students (38%) knew that “sugar-free” foods may not always be the best option because they may still raise blood sugar levels (P<0.05). Less than 30% of both nurse and student respondents correctly identified that in general, the total “amount” of carbohydrate at each meal is more important than the “type” of carbohydrate at each meal.
Table 3. Knowledge of Basic Meal Planning for Diabetes Management: Percentage of Correct Responses Among Nurses and Students*

<table>
<thead>
<tr>
<th>Multiple Choice Questions: Correct Answers</th>
<th>% Nurses (N=151)</th>
<th>% Students (N=80)</th>
</tr>
</thead>
<tbody>
<tr>
<td>People with diabetes should exclude NO nutrients from their meals</td>
<td>77</td>
<td>65</td>
</tr>
<tr>
<td>“Sugar-free” foods may still raise blood sugars levels.</td>
<td>58</td>
<td>38*</td>
</tr>
<tr>
<td>Sugar alcohols may cause a laxative effect in people with diabetes.</td>
<td>80</td>
<td>60*</td>
</tr>
<tr>
<td>When compared to the original version, “fat-free” foods often contain more carbohydrate.</td>
<td>57</td>
<td>34*</td>
</tr>
<tr>
<td>On average, 45-65 grams of carbohydrate is suggested per meal.</td>
<td>34</td>
<td>30</td>
</tr>
<tr>
<td>On a food label, “total carbohydrate” indicates the carbohydrate content in one serving of that food.</td>
<td>46</td>
<td>34</td>
</tr>
<tr>
<td>In regards to blood sugar, the total <em>amount</em> of carbohydrate is more important than the <em>type</em> of carbohydrate at each meal or snack.</td>
<td>28</td>
<td>24</td>
</tr>
<tr>
<td>Nonfat or low-fat milk contain:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>less fat than whole milk</td>
<td>47</td>
<td>51</td>
</tr>
<tr>
<td>less calories than whole milk</td>
<td>27</td>
<td>30</td>
</tr>
</tbody>
</table>

*P<0.05

When assessing knowledge of *trans* fat and sugar alcohols it was found that 61% and 51% (respectively) of nurse and nursing student respondents knew the food sources of *trans* fats. Seventy-percent and 61% (respectively) knew that *trans* fats may increase LDL cholesterol while only 31% of both nurse and nursing student respondents were aware that *trans* fats may also lower HDL cholesterol. Eighty-percent of nurses and 60% of students (P< 0.05) knew that sugar alcohols may cause a laxative effect in people with diabetes. Forty-three percent of nurses and 66% of students (P<0.05) did not know that “fat-free” versions of food often contain more carbohydrate than the original.
The percentage of nurses and nursing students who answered each question correctly is shown in Table 3. The percentage of nurses who correctly answered each question listed was determined based on the total number of nurse participants (N=151). The percentage of nursing students who correctly answered each question listed was determined based on the total number of nursing student participants (N=80).

These results indicated that nurses scored significantly higher compared to nursing students on questions assessing knowledge of food labels, sugar alcohols and carbohydrate content in “fat-free” foods. These results also showed that nurses and nursing students primarily rely on patient teaching materials and dietitians as resources for nutrition information and that they may not be familiar with basic meal planning techniques or carbohydrate content of basic foods.

Knowledge of Carbohydrate Content of Foods

The percentage of respondents who correctly answered each question is based on the total number of nurses and total number of students for each group. It was found that greater than 80% of both nurses and nursing students knew that potatoes and plain oatmeal contains carbohydrate. Less than 50% of both nurses and nursing students knew that skim milk, bran cereal and sugar-free ice cream raise blood sugar levels or that skim milk, berries, dried beans and sugar-free syrup contain carbohydrate. Forty-nine percent of nurses and 56% of students were able to identify the amount of carbohydrate in 4 ounces of orange juice which indicates that approximately half of respondents did not know the answer. Approximately 50% of both nurse and student respondents were not able to identify the amount of carbohydrate in a small piece of fruit (size of tennis ball). The majority of nurses (81%) and nursing students (76%) knew that eggs do not contain
carbohydrate. Approximately one-third of both nurse and student respondents thought that cheese contained carbohydrate. Significant differences were found between nurses and nursing students on only four knowledge questions. Significantly more nurses correctly identified that peas contain carbohydrate and that orange juice, crescent rolls and 2% milk raise blood sugar levels (P<0.05). These results indicate that in general nurses and nursing students scored highest in correctly identifying that bran cereal, oatmeal, orange juice and potatoes are foods that contain carbohydrate and raise blood sugar levels whereas eggs do not contain blood carbohydrate. On the other hand, nurses and nursing students do not have basic knowledge for identifying the amount of carbohydrate in several basic foods such as milk, juice and cheese however. The results of nurses’ and nursing students’ knowledge of carbohydrate content of foods are described in Table 4.
Table 4. Carbohydrate Content of Food: Percentage of Correct Responses Among Nurses and Students*

<table>
<thead>
<tr>
<th>Multiple Choice Questions: Correct Answers</th>
<th>% Nurses (N=151)</th>
<th>% Students (N=80)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 ounces of orange juice contain about 15 grams of carbohydrate.</td>
<td>49</td>
<td>56</td>
</tr>
<tr>
<td>Skim milk contains carbohydrate</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td>Whole milk contains carbohydrate</td>
<td>59</td>
<td>50</td>
</tr>
<tr>
<td>Peas contain carbohydrate</td>
<td>52</td>
<td>38*</td>
</tr>
<tr>
<td>Berries contain carbohydrate</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>Potatoes contain carbohydrate</td>
<td>90</td>
<td>88</td>
</tr>
<tr>
<td>Fruit contains carbohydrate</td>
<td>64</td>
<td>55</td>
</tr>
<tr>
<td>Dried beans contain carbohydrate</td>
<td>48</td>
<td>36</td>
</tr>
<tr>
<td>Bran cereal contains carbohydrate</td>
<td>79</td>
<td>85</td>
</tr>
<tr>
<td>Sugar-free syrup contains carbohydrate</td>
<td>18</td>
<td>16</td>
</tr>
<tr>
<td>Plain oatmeal contains carbohydrate</td>
<td>85</td>
<td>86</td>
</tr>
<tr>
<td>Eggs do NOT contain carbohydrate</td>
<td>81</td>
<td>76</td>
</tr>
<tr>
<td>Cheese does NOT contain carbohydrate</td>
<td>68</td>
<td>64</td>
</tr>
<tr>
<td>A piece of fruit (size of tennis ball) has about 15 grams of carbohydrate.</td>
<td>58</td>
<td>46</td>
</tr>
<tr>
<td>1 cup milk has the same amount of carbohydrate as ½ cup juice.</td>
<td>63</td>
<td>56</td>
</tr>
<tr>
<td>Half a regular bagel has more carbohydrate than 2 chips-ahoy cookies, 1 slice of bread and 1 small apple</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>Skim milk raises blood sugar</td>
<td>41</td>
<td>33</td>
</tr>
<tr>
<td>Bran cereal raises blood sugar</td>
<td>44</td>
<td>39</td>
</tr>
<tr>
<td>Blueberries raise blood sugar</td>
<td>62</td>
<td>60</td>
</tr>
<tr>
<td>Orange juice raises blood sugar</td>
<td>85</td>
<td>71*</td>
</tr>
<tr>
<td>Crescent roll raises blood sugar</td>
<td>76</td>
<td>51*</td>
</tr>
<tr>
<td>1 cup 2% milk raises blood sugar</td>
<td>58</td>
<td>43*</td>
</tr>
<tr>
<td>Sugar-free ice cream raises blood sugar</td>
<td>26</td>
<td>16</td>
</tr>
<tr>
<td>Berries raise blood sugar</td>
<td>70</td>
<td>60</td>
</tr>
</tbody>
</table>

*P<0.05
Hypoglycemia

As shown in Table 5, seventy-five percent of nurse respondents and 60% of student respondents (P<0.05) were aware that a blood sugar level of 60mg/dl would be considered “hypoglycemia”. When asked to select the most appropriate treatment of symptomatic hypoglycemia when given the options of a small candy bar, piece of cake, ice cream or glucose tablets 66% of nurses and only 39% of nursing students correctly selected glucose tablets (P<0.05). These results indicate that both nurses and nursing students are more likely to be able to recognize hypoglycemia based on blood sugar levels but are not as likely to know the most appropriate method to treat hypoglycemia. These results also indicate that nurses scored significantly higher on both diagnostic criteria and treatment methods for hypoglycemia when compared to nursing students.

Table 5. Hypoglycemia: Percentage of Correct Responses Among Nurses and Students*

<table>
<thead>
<tr>
<th>Multiple Choice Questions: Correct Answers</th>
<th>% Nurses (N=151)</th>
<th>% Students (N=80)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A blood sugar of 60mg/dl is considered “hypoglycemia”</td>
<td>75</td>
<td>60*</td>
</tr>
<tr>
<td>3-4 glucose tablets is the best method to treat a patient with symptomatic hypoglycemia</td>
<td>66</td>
<td>39*</td>
</tr>
</tbody>
</table>

*P<0.05

2.5 Discussion

2.5.1 Focus Groups

This study measured the perceived and actual knowledge of nutritional management of diabetes among nurses and nursing students using focus groups and surveys. Focus
group discussions provided insight into nursing students’ perceptions of the role of nurses in promoting nutritional management of diabetes. The majority of nursing students reported that the role of nurses is to reinforce nutrition education to patients with diabetes which requires at least a basic knowledge level of the topic. This is consistent with a cross-national study showing that nurses from Asia, Australia, Europe and North America believe nurses should have a larger part in diabetes care and are willing to take on more responsibility because as nurses, they are more likely to give dietary advice to patients than physicians (25). It is clear that nursing students also consider nutrition advice for diabetes management to be part of the scope of practice for nurses.

Overall, nursing students were quick to describe their knowledge of nutrition for diabetes management as “good” but were hesitant when asked about the carbohydrate content of foods. This suggests that perceived knowledge levels may be higher than actual knowledge which has been shown in a previous study (28).

Focus group discussions revealed that nursing students were able to correctly state 1) it is important to individualize patients’ diets, 2) blood sugar levels should be used to assess appropriateness of meals and 3) that potatoes and orange juice raise blood sugar levels. Meal planning for patients with diabetes should be individualized based on the patient’s weight goal, physical activity, co-existing diseases and food preferences. During focus group discussions, nursing students recognized the importance of individualizing diets for their patients taking into account blood sugar levels. They were in general agreement that the patient’s blood sugar should be tested before making a decision about whether or not a given meal is appropriate for a patient.
Knowledge areas that seemed to be the weakest among nursing students included treatment for hypoglycemia and carbohydrate content of berries and low-fat milk. Nursing students stated that adding sugar to bran cereal was an appropriate treatment for hypoglycemia. The American Diabetes Association indicates that approximately 15 grams of carbohydrate is needed to raise a low blood sugar level (5, 60). One cup of bran cereal contains about 30 grams of carbohydrate (61). Thus, adding sugar to bran cereal would not be appropriate for treating hypoglycemia because the carbohydrate content would be much greater than 15 grams of carbohydrate likely transforming hypoglycemia into hyperglycemia. Among nurses, inadequate knowledge of the treatment for hypoglycemia has also been shown in previous studies (28, 44). This is a major concern because nurses are the primary healthcare professionals responsible for treating hypoglycemia in hospital and long-term care settings.

There was a general consensus among nursing students that patients who take insulin can eat unlimited amounts of carbohydrate because nurses will simply “fix” a high blood sugar with insulin. It is true that patients taking insulin may be able to consume a larger range of carbohydrate but the amount is certainly not unlimited and must be appropriate for the each patient’s weight goal. This may be an area that needs to be improved in nutrition education.

The majority of nursing students agreed that nutrition is only briefly covered throughout their nursing program. Nursing students felt they would benefit from lectures or seminars focusing on basic nutrition for diabetes management. Collaboration of dietitians and nurses was also suggested to improve nutrition education among nursing students. Collaboration of nutrition and nursing faculty is currently feasible at Drexel...
University because of the incorporation of the Department of Nutrition Sciences into the College of Nursing and Health Professions.

Focus groups were conducted with nursing students only (not with nurses) because the original intent of the research was to investigate the current knowledge level of nursing students to determine if they are prepared to enter the work field and give accurate nutrition advice to patients. This intent was based on review of the literature suggesting that younger nurses with less work experience have less nutrition knowledge for diabetes management compared to older nurses with more work experience. With the increasing prevalence of diabetes, newly graduating nursing students beginning their first jobs as nurses are likely to encounter patients with diabetes and need to be prepared with knowledge of carbohydrate content of basic foods and nutritional treatment for hypoglycemia.

2.5.2 Survey

While focus groups included only nursing students, the survey used in this study was administered to both nursing students and nurses. Nurses were included in the survey in order to compare current knowledge levels among nursing students with knowledge of working nurses.

Again, the mean scores were calculated based on a total possible score of 37 points from the knowledge questions. The mean scores (53% for nurses, 50% for nursing students) of this survey of are comparable to mean scores of previous studies assessing general diabetes knowledge ranging from 49% to 71.9% (30, 39, 41, 44). There was no significant difference between mean scores among nurses and nursing students which indicates that nutrition knowledge for diabetes management may not be learned with
years of work experience. There was also no significant difference between mean scores among Co-op students and ACE students. This is important because the students in the Co-op program complete 2 nutrition courses at Drexel while the ACE students are only required to complete 1 nutrition course prior to entering the nursing program at Drexel. This indicates that there is no significant difference between curriculums in terms of educating students about nutrition for diabetes management.

**Attitude**

Survey results were consistent with focus groups in that greater than 80% of survey respondents described the role of nurses in the nutritional management of diabetes as “important”. Greater than 70% of respondents reported that their job as a nurse is to provide and reinforce basic nutrition education for daily management of diabetes and treat episodes of hypoglycemia. The majority (69% nurses, 63% nursing students) rated their knowledge as “excellent” or “good” however more than half of respondents from both groups were “not confident” or only “somewhat confident” in giving nutrition advice to patients with diabetes. This is consistent with previous studies that have shown that perceived nutrition and diabetes knowledge is higher than actual knowledge among nurses (28, 44). Approximately 75% of both nurses and nursing students were satisfied with the nutrition education received during their nursing program which suggests at least one-third of respondents would welcome nutrition education improvements in nursing programs.

Approximately 65% of both nurse and student respondents had never heard of “The Plate Method”. It is concerning that the majority of respondents are not familiar with “The Plate Method,” a tool describe by the American Diabetes Association that has
been successful in helping people with diabetes to plan their meals (6, 62). It is a simple tool that can be taught to patients in just a few minutes and does not require advanced knowledge of carbohydrate content of foods. This is an important nutrition tool that should be taught during nutrition classes taken by nursing students and emphasized in clinical classes when learning about diabetes because it does not require advanced knowledge or in-depth training. Educators should be aware that nurses and nursing students are not aware of the “The Plate Method” and consider incorporating it into program curriculums and continuing education lectures.

In terms of nurses’ and nursing students’ attitudes toward individuals with diabetes it was found that approximately one-third believe that patients “somewhat” comply or have “very little” compliance with diabetes meal plans. Greater than 50% of both groups believe that “few” or “none” of people with diabetes receive adequate education and support to follow diabetes meal plans. This research indicates that nurses and nursing students may believe that patients with diabetes have little motivation to follow diabetes meal plans. This research also indicates that even though nurses and nursing students believe they have an important role in giving nutrition advice to patients and that they have high knowledge levels they are not confident using this responsibility or knowledge to give advice to patients.

Knowledge

For basic meal planning, at least one-third of nurses and nursing students would recommend that patients with diabetes should exclude one or more macronutrients (carbohydrate, protein or fat) from meals. This is not consistent with the American Diabetes Association guidelines recommending that meals should be well-balanced by
including all nutrients (6). Inclusion of all nutrients at meals is considered basic meal planning knowledge and is one of the first topics addressed during DSME nutrition classes.

Another deficiency area in nutrition knowledge found among nurses and nursing students is that approximately three-quarters of both groups did not know the average amount of carbohydrate to be consumed at each meal or that the total amount of carbohydrate consumed at one meal is generally more important than the type. More than half of the respondents from both groups thought that in order to find the total carbohydrate on a food label one should add the number of grams of “total carbohydrate” with grams of fiber and/or grams of sugar. Both of these areas are key parts of basic meal planning. Knowledge of these basic nutrition facts may help nurses to be able to accurately reinforce nutrition education to patients with diabetes.

When assessing knowledge of carbohydrate content of foods, survey results showed that nurses and nursing students had highest scores when identifying that bran cereal, crescent rolls, oatmeal, orange juice and potatoes contain carbohydrate and raise blood sugar levels. Other strengths in knowledge found in this study included >50% of respondents correctly answering questions about nutrients to include in meals, the laxative effect of sugar alcohols and identifying a hypoglycemic blood sugar level. Weakest areas of knowledge included identification of the carbohydrate content of many basic foods. It was found that less than 50% of respondents from both groups knew that skim milk contains carbohydrate. Milk, whether skim, 1%, 2% or whole contains approximately 12 grams of carbohydrate per 8 ounce cup (61) and so the carbohydrate content of milk is similar regardless of fat content. At least one-third of respondents did
not know that an 8-ounce glass of milk has similar carbohydrate content as 4-ounces of orange juice. Only 57% and 34% (respectively) of nurses and nursing students knew that “fat-free” versions of food often contain more carbohydrate than the original version of that product. Assuming that “fat-free” foods are always a healthier option is a common misconception. Low nutrition knowledge levels among nurses regarding the carbohydrate content of common foods such as milk, juice, eggs and cheese may lead to patients receiving poor nutrition advice. Patients may also become frustrated and confused when the nutrition education they receive is inconsistent due to lack of knowledge among professionals. Although we were not able to determine the scores of individual questions from surveys in other studies that included a few nutrition-diabetes related questions diabetes, the mean scores of nutrition-diabetes related questions as a whole are available. These studies have shown that mean scores of nutrition-diabetes related questions were approximately 20% (38), 14% (42) and 0.7% to 22.3% (43).

Knowledge scores of questions on this study that focused on nutrition-diabetes questions were higher and ranged from 53% (nursing students) to 60% (nurses). The survey of this study did not have a time limit and the survey link was distributed via email. One possibility for higher scores on this survey could be that nurses and nursing students completed the survey at the same time, and at adjacent computers, to other nurses and nursing students. Thus, respondents may have discussed answers while completing the survey or looked up answers to the survey questions resulting in higher scores than those seen in previous studies.
Hypoglycemia

Finally, results of questions assessing knowledge of hypoglycemia found that approximately one-third of nurse respondents and 61% of student respondents would choose a small candy bar, piece of cake or ice cream instead of 3-4 glucose tablets to treat a patient with hypoglycemia. This raises concern that both nurses and nursing students may not be aware of the appropriate nutritional treatment of hypoglycemia. These results are consistent with findings from the focus groups of this study as well as results from previous studies (28, 44).

It is interesting that only about 3% of respondents reported using other nurses as a resource when asked for nutrition advice. This may suggest that there is a general acknowledgement among nurses that nurses do not have basic nutrition knowledge for diabetes management thus are forced to use outside resources such as dietitians and patient teaching materials.

Differences between Nurses and Nursing Students

There were significant differences in correct responses between nurses and students in only a few areas. The areas where nurses scored significantly higher among nurses than nursing students included sugar-free foods, laxative effect of sugar alcohols, increased carbohydrate content of “fat-free” versions of food products and carbohydrate content of peas, orange juice, crescent rolls and 2% milk. Nurses also scored significantly higher on questions assessing knowledge of hypoglycemia. These results indicate that nurses may gain some nutrition knowledge throughout their work experience as a nurse.
Nevertheless a knowledge gap of nutrition for diabetes management remains among both nurses and nursing students.

Nursing students did not score significantly higher than nurses on any knowledge questions but did score significantly higher on several attitude questions. A significantly greater percentage of nursing students compared to nurses believed that the role of nurses is to: 1) provide basic nutrition education, 2) assist with patient meals, 3) teach daily management of diabetes and 4) provide nutrition education upon patient discharge. One explanation for these results may be that nursing programs teach nursing students that the scope of practice for nurses includes the total care of patients’ health. Combined nursing students’ obedience to providing total care to patients with the passion to care for patients it is logical that nursing students would strongly believe that nutrition for diabetes management is within their scope of practice. This belief may be stronger among nursing students than nurses because nurses learn quickly that they are responsible for many aspects of patient care and learn to consult specialists when appropriate such as dietitians for nutrition education.

These results are beneficial for use by both nutrition and nursing faculty in determining the need and methods for improving nutrition education in nursing programs at Drexel. Survey results provide baseline data of current knowledge of nutrition for diabetes management among nurses and nursing students. If an intervention, such as lectures or seminars, were developed then the effectiveness of the intervention may be evaluated after its completion.
2.6 Limitations

The response rate was approximately 4% among nursing students and 43% among nurses. The response rate among nurses is comparable to response rates of other studies that have ranged from 30% to 80.7% (30, 33, 35, 44). The highest response rate found among the studies reviewed was 80.7% for surveys that required participants to mail to the researchers when finished (35). It is surprising that a study requiring participants to mail in their survey would have a higher response rate than a survey that could be completed online with a direct link from potential participants’ email to the survey.

There is a possibility the email list developed for this study was not up-to-date with present nurses’ email addresses which was reported by the contact person who developed the email list of nurses at Hahnemann University Hospital. Another possibility for the low response rate may have been the combination of a relatively long (37-item) survey without a status toolbar to allow participants to see their progress while taking the survey. Because our survey required a self-selection process to participate, nurses with increased nutrition or diabetes knowledge may have been more likely to participate than those with less knowledge. If this is true, then the low response rate may suggest that the majority of nurses and students did not feel confident enough in their nutrition or diabetes knowledge to participate in the survey.

Time constraints for this study prevented the researchers from being able to conduct focus groups with nurses, nurses who were graduate students and the general population. These additional focus groups would have provided data to compare opinions and knowledge among nursing students, nurses, nurses who were graduate students and the general population. Time constraints also affected the duration in which
the survey was accessible to participants. The survey was open to nursing students for 2 weeks. A reminder email was sent to nursing students after the survey had been open for one week. Only a few additional students completed the survey after the reminder email was sent. The survey was open to nurses at HUH for only 1 week. Due to the lack of participation from students following the reminder email, and time constraints, no reminder email was sent to nurses. The majority of both students and nurses participated in the survey within the first few days of access. Previous use of surveys with college students using mass emails has shown that the majority of students participate within the first few days after receiving the survey and if they don’t participate within the first few days then it is unlikely that they will participate at all (63). Still, it is possible that a greater response rate could have occurred with longer duration of access to the survey. This could especially be true if the survey was administered during a busy time for nurses or nursing students which would have also contributed to a lower response rate.

The length of the study may have also served as a limitation. Perhaps nurses would have been more likely to complete the survey if it had consisted of only a few short questions. As nurses and nursing students are often limited in time, future studies should consider short, brief surveys when conducting studies with this population. Respondents were also able to skip questions throughout the survey. In this study, skipped questions were counted as “incorrect” for analysis purposes. It is possible that skipped questions indicate areas that the responders did not feel comfortable answered. A Nurses and students with less knowledge may have also been more likely to skip questions or quit the survey before completion. By allowing participants to skip questions, it becomes difficult to know whether or not nurses and nursing students would
be able to identify the correct answers in real life situations when caring for patients with diabetes. However, it seems more likely that skipped questions were due to length of the study because the number of respondents who skipped each question increased consistently throughout the survey. Four percent of respondents skipped the first knowledge question which steadily increased to 21% of respondents who skipped the last knowledge question.

Another consideration is that nursing students who participated in the focus groups of this study may have also participated in the survey of this study. No information was collected from survey participants to identify if anyone had also participated in the focus groups of this study. Those students who participated in the focus groups may have become more aware of the topic of nutrition for diabetes management as a result of participating in the focus group discussions which could have lead to improvements in their knowledge between the time of participating in the focus group and in the survey.

It should also be noted that nurses and students with greater nutrition knowledge for diabetes management may have been more likely to participate and complete the entire survey. Nurses and students with less knowledge may have been less likely to participate in the study at all. If this were true, then it is likely that the total mean score among respondents would even poorer if all nurses and nursing students at Drexel and HUH completed the study.

In order to receive IRB approval for an “Exempt” study, health information could not be obtained from participants. This information may have been helpful in identifying the prevalence of diabetes among participants because the average age among nurses was
41 years versus an average age of 22 years among students. There may have been a higher prevalence of diabetes among nurses who participated in this study compared to students in this study. This is relevant to questions that were correctly answered by a significantly greater percentage of nurses than students. Without this information it is difficult to assess whether more nurses were able to correctly answer nutrition questions because of having more work experience than students or because they had more knowledge due to living with diabetes themselves.

2.7 Conclusion

There seems to be a gap between knowledge of basic facts and the ability to apply knowledge of basic facts to real life situations. While almost three quarters of both nurses and nursing students were able to identify that orange juice raises blood glucose levels. only about half of respondents from each group were able to correctly identify the carbohydrate content in 4-ounces of orange juice. This indicates that nurses and nursing students may have difficulty making connections between basic nutrition facts. Nurses and nursing students also lack knowledge regarding the Plate Method which may indicate that they are not able to accurately give accurate nutrition advice to patients with diabetes. The prevalence of nurses and nursing students (%) not knowing the best treatment for hypoglycemia may indicate that patients are not receiving quality care in the management of their diabetes while in hospital settings.

Improvements in nutrition education for diabetes management should be integrated into nursing programs in order to improve basic knowledge among nursing students. It is understood that nursing students have an extremely busy curriculum making it difficult to incorporate an additional course that would focus on diabetes management. Incorporating
a lecture or seminar focusing on nutrition for diabetes management yearly or once each term would be more appropriate. Nurses at Drexel also have a simulation experience where they practice real life situations with patients in a controlled environment. This is a great learning tool that should be implemented nationally, and worldwide, if not already included in nursing programs. Nurses have busy schedules as well but are required to complete continuing education in areas of interest. Continuing education and in-services focusing on nutrition for diabetes management should be mandatory for all nurses given the prevalence of diabetes.

A suggestion for future studies is to administer the survey used in this study to nurses and nursing students nationwide to assess for the need to improve nutrition education. This would strengthen the ability to generalize the findings of this study. Administering the survey to the general population would also be helpful in order to determine knowledge level of nutrition for diabetes management compared to that of nurses and nursing students. It would also be interesting to ask the general population about their opinion on the role of nurses in the nutritional management of diabetes. If the general population perceives the role of nurses in this area of care to be high then this would suggest that patients place great emphasis and trust in nurses. Thus, if nurses are giving nutrition advice it would be likely that patients would take this advice seriously further emphasizing the need for nurses to have accurate basic nutrition knowledge for diabetes management.

In conclusion, this study indicates a need to strengthen nutrition education in nursing programs. Suggestions for improving nutrition education for nurses and nursing students include hands-on nutrition learning during clinical rotations and seminars held each
semester. These improvements are recommended given that nurses’ knowledge levels of nutrition for diabetes management may not be learned or improved with additional years of work experience after graduating from nursing programs.
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Dear Nursing Students,

Nutrition Researchers are looking for volunteers to participate in a Nursing and Nutrition Research Study. The researchers are interested in the role of nurses and nutrition in healthcare.

Volunteers will be asked to meet on one occasion for a focus group (group discussion). Volunteers will be asked to offer their opinions about the topic. There is no right or wrong answer. The focus group will last no longer than 90 minutes at Drexel University.

You can participate in this study if you meet the following criteria:

- 18 years or older
- Nursing student at Drexel University (Must be enrolled in either ACE program OR a Junior or Senior in Co-op program)

If you meet the above criteria, please contact:

Trish Carney

215-895-6693 or tc446@drexel.edu

Compensation: Each volunteer who completes the focus group will receive $40.

This research is approved by the Institutional review board.

This research is conducted by a researcher who is a member of Drexel University
Volunteers Needed for:

Nursing and Nutrition Research Study

VOLUNTEERS NEEDED for the following:

We are involved in a study using focus groups (group discussions) to understand the role of nurses and nutrition in healthcare.

CRITERIA

You can participate in this study if you are:

- 18 years or older
- Undergraduate Nursing student at Drexel University

(must be in ACE program OR a Junior or Senior in Co-op program.)

If you meet the above criteria, please contact us using the contact information provided below.

COMPENSATION

Each volunteer who participates in the study will receive $40.

This research is approved by the Institutional review board.

If you are interested in participating in this study, please contact:

Trish Carney
215-895-6693
Drexel University
Stratton Hall Room 223
APPENDIX C: TELEPHONE SCREENING QUESTIONNAIRE

1) Telephone Screening Questionnaire
Date: ________________________ Individual’s First Name: _______________________

Hi (individual’s name). Thank you for your interest in the focus group. My name is Trish Carney from Drexel University.

First, I will explain the study so you can decide if you are still interested. We’re getting together a small group of nursing students for a focus group (group discussion). We will ask you to attend one session where you will be asked questions about your experiences and opinions of the role of nurses and nutrition in healthcare. There is no right or wrong answer. We simply want to learn about your opinions. The focus group will last no longer than 90 minutes.

You will receive a $40 for your participation in the study. Are you still interested?
YES___NO___

I have a few quick questions to confirm that you are eligible.

<table>
<thead>
<tr>
<th>Screening Question</th>
<th>Answer</th>
<th>Eligible Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is your age?</td>
<td></td>
<td>18 years or older</td>
</tr>
<tr>
<td>What are you studying at Drexel? In what nursing program?</td>
<td></td>
<td>Nursing/ACE/Junior or Senior Co-op</td>
</tr>
<tr>
<td>If in Co-op program, what year student are you?</td>
<td></td>
<td>__Undergraduate Junior Co-op</td>
</tr>
<tr>
<td></td>
<td></td>
<td>__Undergraduate Senior Co-op</td>
</tr>
</tbody>
</table>

If eligible state, Great – you are eligible for the study.

Then offer available dates/time/location: 5:00pm-6:30pm on following dates:
Tues. Jan 19th, Tues. Jan 26th or Tues. Feb 9th. (circle date they will attend).

Will you be able to join us?
No _____ Okay. Thank you for your time.
Yes _____ Great. We will make reminder phone calls 1-2 days prior to the focus group session.
May I have a number where you can be reached?
____________________________________________

Great, thanks (patient’s name). We look forward to seeing you on (state date and time participant selected)
APPENDIX D: BRIEF SCREENING QUESTIONNAIRE

Please answer the following questions:

1) Which of the following nursing programs are you part of?
   i. Co-op
   ii. ACE
   iii. Master’s Level
   iv. Doctoral Level

2) Are you an undergraduate or graduate student? _______________________

3) What year are you in your program?(Freshman, Sophomore, Junior, Senior) _____
APPENDIX E: PRE-FOCUS GROUP QUESTIONNAIRE

1. In your opinion, what is the role of nurses in providing *general* nutrition advice in healthcare settings?

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

2. In your opinion, what is the role of nurses in providing nutrition advice for *diabetes* in healthcare settings?

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

3. Explain how you would respond to a patient who has asked you for nutrition advice.

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
APPENDIX F: FOCUS GROUP QUERITONING ROUTE

Opening Question

1. Tell us your name and what you enjoy most about nursing.

Introductory Question

2. Think about your current nursing program. In what ways have you learned about nutrition, if at all?
3. In your opinion, which professionals have a role in giving nutrition advice to patients with diabetes? Ask participants to explain their answer.

Key Questions

4. How would you feel if a patient with diabetes asked you for nutrition advice?

5. Which nutrition topics, if any, would you feel more comfortable discussing with patients than others? Least comfortable?
   a. Probe: What about that topic makes you feel comfortable or not so comfortable?

6. Activity 1: Give each person a piece of paper with a list of the following terms. State, when describing a diet for a patient with diabetes, what term would you most likely use to describe the diet?
   a. Ask subjects to circle the term they would most likely use and to put an “X” next to the term they would least likely use and write a brief explanation for each. Then have participants share answers and reasons.
   - Diabetes diet
   - ADA diet
   - Low Carbohydrate diet
   - Well balanced diet
   - Healthy eating for diabetes
   - Healthy eating for diabetes management

7. How do you feel about nurses being responsible for having basic knowledge of nutrition for diabetes management?

8. How would you describe your current knowledge level of nutrition management of diabetes?
9. **Activity 2: State** - “A meal has just been delivered to your patient. The meal consists of (show food models to represent a meal). The patient says to you, “I have diabetes – can I eat this?”
   a. How would you feel about giving nutrition advice to this patient?
   b. Describe how you would respond to the patient.
   c. How would you respond if you were not 100% confident in your knowledge?

10. **Repeat Activity 2 questions a, b and c using a different meal example.** (1 meal will be appropriate for a patient with diabetes and 1 will not be appropriate for a patient with diabetes, however this information will not be shared with the participants).

11. How do you feel about nurses being responsible to give nutrition advice to patients with diabetes?

12. In what ways, if any, might patient care be affected if all nurses were able to give nutrition advice for diabetes management?

13. In what ways might nurses be affected by adding basic nutrition to their responsibilities? In what ways, if any, could nutrition education be improved in nursing programs?

14. In what ways, if any, could nutrition education be improved in nursing programs?

**Ending Questions**

15. Ask each participant to **write** down **three words** to describe how they feel about the role of nurses in promoting nutritional management of diabetes.

16. Are there any questions that we should have asked?

**Closing Statement**

Thank you for sharing your time and opinions with us. (Distribute monetary compensation).
Dear Nurses/Nursing Students,

Nutrition Researchers are looking for volunteers to participate in a brief survey about the role of nurses and nutrition in healthcare. The survey should take no longer than 10 to 15 minutes to complete.

Eligibility to complete the study:
• 18 years or older

AND: 1 or more of the following:

• Nursing student at Drexel University
• Registered or Licensed Nurse

By clicking on the survey link below, you are consenting to participate in the survey, and for the information entered on the survey to be used in research analysis and reporting. All results will be anonymous.

At the end of the survey, you may choose to enter your email address to enter a drawing for the chance to win $100. Email addresses will be used ONLY to inform the winner that he/she has been selected. All email addresses will be disposed of after the winner has been notified.

This research is approved by the Institutional review board.

This research is conducted by a researcher who is a member of Drexel University.
APPENDIX H: SURVEY

1. Age:__________

2. Gender
   a. Male
   b. Female

3. Which describes you? (Select all that apply)
   a. Enrolled in Drexel’s Co-op program
   b. Enrolled in Drexel’s ACE program
   c. Enrolled in Graduate Level Nursing Program at Drexel (Please specify which program)
   d. Registered or Licensed nurse
   e. Other (Please Specify)
   f. Additional degree in area other than nursing (please specify)

4. Have you actively worked as a nurse?
   a. Not yet a nurse
   b. Nurse

5b. Only those who answer “b” nurse, will get this question: How would you describe the areas of nursing and settings in which you have worked? (both current and previous)

5. If currently enrolled in Drexel’s Co-op or ACE program, in what year are you in the program?
   a. 1st year
   b. 2nd year
   c. 3rd year
   d. 4th year
   e. 5th year or above
   f. Not currently enrolled in either program

6. How would you rate your knowledge of the nutritional management of diabetes?
   a. Excellent
   b. Good
c. Fair

d. Poor

7. How satisfied are you with the nutrition education you received in your current or previous nursing program?
   a. Very dissatisfied
   b. Dissatisfied
   c. Unsure
   d. Satisfied
   e. Very satisfied

8. How many **nutrition** courses have you completed?
   a. 0
   b. 1
   c. 2
   d. >2
   e. Don’t know

9. When caring for a patient who has diabetes, typically nurses are responsible for which of the following? (Select all that apply)
   a. Basic nutrition education
   b. Comprehensive nutrition education
   c. Initial nutrition education
   d. Reinforcing nutrition advice
   e. Assisting patients with meals
   f. Teaching daily management of diabetes
   g. Treating high and low blood sugar
   h. Education for patient discharge
   i. Nurses are not responsible for giving nutrition advice

10. How important do you feel it is for nurses to have basic nutrition knowledge for diabetes management?
    a. Not at all important
    b. Somewhat important
    c. Moderately important
    d. Very important

11. What level of responsibility do you feel nurses have in the role of giving nutrition advice to patients with diabetes?
    a. Not at all responsible
b. Somewhat responsible  
c. Moderately responsible  
d. Completely responsible

12. Rate your confidence in providing nutrition advice to people with diabetes  
   a. Not confident  
   b. Somewhat confident  
   c. Moderately confident  
   d. Very confident

13. In general, how well do patients adhere to a diabetes meal plan?  
   a. To a great extent  
   b. Somewhat  
   c. Very little  
   d. Not at all  
   e. I don’t know

14. In general, how many patients receive adequate education and support for following a diabetes meal plan?  
   a. All  
   b. Majority  
   c. Some  
   d. Few  
   e. None  
   f. I don’t know

15. Are you familiar with the “Plate Method”?  
   a. Yes and I would feel comfortable explaining it.  
   b. Yes, but not comfortable explaining it.  
   c. No, have never heard this term.  

16. Most of the time, where do you typically go for nutrition information for your patients?  
   a. Scholarly Websites  
   b. Nutrition Fact Sheets  
   c. Dietitian  
   d. Other Nurses  
   e. Patient teaching materials (in-house or built into EMR)  
   f. Other, please specify (blank field)
17. People with diabetes should exclude which nutrients from their meals? (Select all that apply)
   a. Carbohydrate
   b. Protein
   c. Fat
   d. None of the above

18. How many grams of carbohydrate are in 4 oz orange juice?
   a. 0 grams
   b. 15 grams
   c. 30 grams
   d. 45 grams

19. Which of the following foods contain carbohydrate? (Select all that apply)
   a. Skim Milk
   b. Whole Milk
   c. Peas
   d. Berries
   e. Potatoes
   f. Eggs
   g. Fruit
   h. Broccoli
   i. Dried beans
   j. Cheese
   k. Bran cereal
   l. Sugar-free syrup
   m. Plain Oatmeal

20. True or false? When consuming alcohol, people with diabetes should consume alcohol with a meal or snack to reduce risk of hypoglycemia. (select one)
   a. True
   b. False

21. Which of the following are TRUE regarding trans fat? (select all that apply)
   a. Increases LDL cholesterol levels
   b. Decreases HDL cholesterol levels
   c. Often found in crackers, muffins and margarine

22. A small piece of fruit (size of tennis ball) contains about how much carbohydrate?
a. 0 grams  
b. 15 grams  
c. 30 grams  
d. 45 grams  

23. True or false? One cup (8oz) of milk has the same amount of carbohydrate as ½ cup (4oz) juice.  
   a. True  
   b. False  

24. “Sugar-free” foods are helpful because they do not cause increases in blood sugar levels.  
   a. True  
   b. False  

25. Sugar alcohols may cause a laxative effect in people with diabetes.  
   a. True  
   b. False  

26. Which of the following is often true regarding “fat-free” foods when compared to the original version?  
   a. Contain less carbohydrate  
   b. Contain more carbohydrate  
   c. Contain equal amounts of carbohydrate  

27. For a person with diabetes, what is the average range of carbohydrate to include at each meal?  
   a. Minimal (no more than 15 grams)  
   b. 15-30 grams  
   c. 45-65 grams  
   d. 75-100 grams  

28. All of the following have about the same amount of carbohydrate except:  
   a. 1 slice of bread  
   b. 2 chips-ahoy cookies  
   c. 1 small apple  
   d. Half a regular bagel  

29. On the food label, where should a person look to determine how much carbohydrate is in one serving?  
   a. Total sugars  
   b. Total carbohydrate
c. Add total carbohydrate + sugars  
d. Add total carbohydrate + sugars + fiber

30. In the following breakfast, which items will raise blood sugar levels? (Select all that apply)
   a. Skim milk  
   b. Bran cereal  
   c. Blueberries  
   d. Orange juice  
   e. None

31. In regards to blood sugar, the **total amount** of carbohydrate is more important than the **type** of carbohydrate at each meal or snack.
   a. True  
   b. False

32. Which of the following would be considered “hypoglycemia”?  
   a. 60mg/dl  
   b. 75mg/dl  
   c. 85mg/dl  
   d. 95mg/dl

33. What is the **best** method to treat a patient with symptomatic hypoglycemia?  
   a. 3-4 glucose tablets  
   b. Piece of cake with icing  
   c. 1 cup ice cream  
   d. Candy bar

34. A patient with diabetes is recommended to use **nonfat** or **low-fat** milk instead of whole milk because nonfat and low fat milk contain: (select all that apply)
   a. Less fat than whole milk  
   b. Less calories than whole milk  
   c. Less carbohydrate than whole milk  
   d. More fiber than whole milk

35. In the following meal, which items will raise blood sugar levels? (Select all that apply)
   a. Grilled Whitefish fillet  
   b. Broccoli with cheese sauce
c. Crescent Roll  
d. 1 cup 2% milk  
e. Sugar-free ice cream  
f. Berries

36. Thank you for completing the survey. At this time, you may choose to enter your email address to be entered into a drawing for the chance to win $100.  
   a. If no, directed to screen that says, “Thank you for completing the survey.”  
   b. If yes, directed to screen to enter email address. After submitting email address, taken to screen that says “Thank you for completing the survey.”
APPENDIX I: FOCUS GROUP 1 TRANSCRIPT

Moderator designated by “M”
Participant designated by “P”
Observing Researcher designated by “R”

M: My name is Marisa. I’m letting everybody know what we’re here for. I’ve been asked by the Nutrition Sciences Department to be here and it’s going to be based on the role of nurses and nutrition in healthcare. We’re interested in hearing from everybody. If there’s a question you really don’t feel comfortable answering, you don’t have to. There’s a recorder here, don’t feel intimidated. It’s just so the department doesn’t miss anything. Everything will be confident – your names. That’s all. Please make sure your cell phones are on silent if you haven’t done so already. So what we’re first going to do is go around the room and just say your name, and what you enjoy most about nursing. Also what your previous work/degree is if you have any. Let’s start over here.

P: What was the question?

M: What you most enjoy and your previous work experience/degree.

P: Teaching clients.

P: My degree is in psychology and I worked at a homeless shelter.

P: I guess, my favorite thing would be what she said, working with all different kinds of people and meeting new people every day. My previous work experience was three years in the NICU at CHOP.

P: I like the human interaction with patients and families and I also work at CHOP.

P: I like the health promotion aspect. I have a business degree and worked in consulting.

P: I also have a business degree and also worked in consulting – the IT side. So far I really like patient education particularly around like health promotion and preventative things.

M: Can I ask both of you – what made you switch?

P: Um, for me, I just wasn’t really satisfied with what I was doing. I wanted a more human component.

P: Yea, there’s not a lot of impact of your work.
M: And how far along are you in your programs? We’re second years

P: I also like the human interaction of nursing. I just graduated from my undergraduate in May. My other degree was Bio-behavioral health.

P: I got a bachelor’s in Biology. I worked at Chop in research for 6 years. Then, I decided to go into nursing when my grandmother passed away because we had Hospice care for her and it just seemed to be a really important aspect to our family and being able to let her peacefully die. So I think that’s what really brought me into nursing. So that’s why I’m here.

P: My background is in exercise science and I ran a gym back in my hometown before I came here. Um, I got into nursing because I like the problem solving aspect of it and you kind of get to apply the human anatomy that I already learned.

P: I like the patient – family education aspect. And I work in the NICU at CHOP too.

P: I just like the human interaction and being able to be there for the patients and I work in the OR at CHOP.

M: Okay, um so, we’re gonna start off and all take a moment and think about your current nursing program. I know there’s varying ones. Think about – in what ways have you learned about nutrition at all in your nursing program? Disregarding any previous degree. And, if you learned about it at all. Whoever wants to volunteer can go ahead and start.

P: I know, I’m in the 5-year Co-op and we have Nutrition 1 and 2 throughout, I think, the 2nd year (sophomore year), and yea.

P: Pretty comprehensive nutrition from infancy to adulthood, diet plans, interactions, diseases.

P: Seems like every clinical course we touch on nutrition, like if it’s a renal patient they need this, or if it’s a diabetic patient they need this kind of diet. So we touch on it a lot.

M: so you feel like it’s prevalent? It doesn’t just end?

P: It definitely comes up with every disease process- when it’s relevant.

M: okay

P: Also comes up with certain drugs like what you can and cannot eat if you’re taking such and such medication.

M: okay
P: The ACE students, we just had an electrolyte and fluid, potassium, different conditions.

P: But we learned about it, like saying ok, um, you have low potassium, but I don’t know, I don’t feel like, for myself, that I know thoroughly like what you would do to correct for that. Like what foods are high in potassium? We touch on it but not… because we’re required to have nutrition coming into it (it) the program. So what we do now I don’t feel like I’m getting much

P: Yea.

P: When we go through there might be a question that we come across that has to do with nutrition so you kind of back into some of the nutrition components. We don’t specifically learn nutrition we’re expected to have it coming in.

P: Some of us took it, I dunno, so far back, that it’s not really still in our minds.


P: In my clinical experience, when I was working at this pediatrics clinical, one of the patients was a newly diagnosed diabetic, so I was able to watch the nurse, you know help..the 13 year old learn how to count his carbohydrates and measure out his insulin. That was just you know, an important part of the teaching. We went over it in class, but it was new..I hadn’t expected to see type 1 diabetes, you know, pediatrics.

P: So, it’s not common to actually see it?

P: In ACE program, we don’t get a nutrition class, they just mention a little about it in class. They say ok they have diabetes you know you have to monitor their diabetes. But having the nurse actually take you and say okay they can have this many carbohydrates. There’s this many carbohydrates in a bowl of frosted flakes or whatever, really breaking it down. Something I got from the clinical not the class.

P: Was that just the bedside nurse or actual diabetic teaching nurse that came in?

P: That was the bedside nurse. I think there was also a nutrition teaching nurse. But the bedside nurse is gonna come in to re-teach. I’m sure the nutritionist will come in at some point to give a more thorough understanding. But she (the nurse) at every meal has to help reinforce the family member with what foods they can order.

M: So, if you feel like, I know you said that you have forgotten it, or not forgotten but it’s not fresh. Are there ways that you or anybody else refresh on it ever? Or not really?

P: We don’t have time to.
P: Right.

P: I think they do stress the importance of a high protein diet because of like, you know, healing and like things like that. So, we understand what’s important, maybe just not quantities.

P: Yea I agree. Like we know broad. And I think….for me a lot of it comes down to, I eat healthy myself so I know what like, the proportions of protein, carbs and stuff like that, but when it comes to a specific illness, right now I don’t feel comfortable explaining it, but we’re only, I’m only 1 semester fully in so I’m hoping that will come.

M: okay. Um, do any of you have an opinion as to which medical professional should have a role in giving nutrition advice to patients, and those specifically with diabetes?

P: My experience was with the child’s nurse. The child’s nurse was repeating the teaching. But I think there was a nutritionist that would come. I mean there should be a dietitian or nutritionist, be there. I think the doctor would have to have at least …I dunno what the doctor would do, maybe 5 minutes

-Laughing-

P: I’ve heard some statistic that physicians only get like a lecture or a really small amount of nutrition teaching so if you go to your primary care doctor and you ask them for nutrition, they’re probably not the best expert. I think they should really tell you to talk to somebody else.

P: Yea I definitely think that the nutritionist or someone who has specifically trained in that area should do the initial teaching but I think the nurse is the one who really drives it into the patients head and helps them to actually learn it by going over it again and again.

P: Helps them to apply it.

P: I think a lot of the nursing aids are also aware of what’s going on . Like, they’ll know…cut a lot of them do the ordering of the patients’ food or something and they’ll know this patient can’t have this or can’t have that...so you know I mean, I think that they can be knowledgeable, they probably could use more training. I mean, I don’t know but I’m sure that more education would be helpful but they seem pretty knowledgeable as to what the patients can and can’t have.

P: I think, like she was saying, I think it’s important for a nutritionist to come in and set it up but realistically we all need reinforcement so I think as a nurse it’s our responsibility to have the knowledge to be able to reinforce it correctly. Rather than giving them the false information. Or what we think is right.
P: Nutritionists, when they come in they give all that information at the patient at once and it’s a lot to take in for anyone, especially someone that’s sick. So to have a nurse who is there all the time and could maybe use different opportunities that they have to reinforce information in small doses is probably good for the patient.

P: Yea, I definitely agree. I feel like sometimes nutritionists talk above your head, like the nurse kind of just puts in on your level. …can’t hear…..

M: So, then, how would you feel, if a patient that you had with diabetes, asked you for nutrition advice. How would you feel, at this point, in any of your educations, would you feel answering it?

M: you’re shaking your head.

P: No I wouldn’t feel confident because I wouldn’t want to feel responsible for giving incorrect information.

P: I would be able to give a basic overview, like watch your sugars, eat this kind of sweetener or diet things, but then I would refer them to the nutritionists for specific counts of carbs and whatever…

P: Just like, is this type 1 or is this insulin dependent or? Is it not insulin dependent?

M: either

P: Because they’re still a little bit different because if they don’t need the insulin they don’t have to worry about their A1C yet, I don’t think…I can’t remember now…but I know that when, if they’re insulin dependent that can be a lot more severe than if they’re not insulin dependent. So the diet would have to be more strict with insulin dependent. I remember, not nursing, but people who have to do…one woman counted her grapes – I think 6 grapes she could have…she really liked grapes and that was all she could have. You know, so she was on insulin and she was you know doing it. I think for other people they just have to be able to do weight loss, which wouldn’t necessarily counting carbohydrates. But overall, you know, food.

M: So, would any of you want to get to that point? Regardless of the field you’re interested in so that you would be comfortable answering somebody who had diabetes?

P: Sure.

P: Yea.

P: I feel like I’d be, kinda like what you said, answering some questions but going back to the specific, I would definitely refer to a nutritionist.
M: Are nutritionists required for someone who has diabetes? When there’s a problem or recently diagnosed?

P: Usually get a consult...someone will come and talk to them and give them information where they can go for more information.

P: Don’t a lot of hospitals have like, diabetes specialists/diabetes educators, I think are the positions?

P: Yea.

P: My doctor has monthly meetings for diabetics, where they can learn about nutrition. It’s just, yea, a group meeting for newly diagnosed.

P: I’m curious though, the difference between being diagnosed in a physician type of setting in just your doctor’s office because I don’t think you would get as much information as if you were diagnosed in a hospital where they have the diabetes specialist coming in, or a nutritionist on hand. Because often times they’re kinda like okay, don’t eat as many carbs, as many sugars and that’s all they’re left with.

P: My dad was diagnosed with diabetes at a doctor’s office and he was handed like 10 pamphlets and that was it.

P: Yea.

M: so he had to go on his own and find...?

P: Yea...his doctor gave him a brief overview, but nothing that was really in-depth. So we had to read through the pamphlets and then look online. I thought that was interesting.

M: Are there any nutrition topics that you would feel more comfortable talking with patients than other nutrition topics? Or are there some that you would feel least comfortable discussing?

P: Pretty comfortable with weight loss.

P: Yea, or like a heart healthy diet.

P: The Dash Diet

P: Or just like wellness – well nutrition foods.

M: So that’s the part of nutrition that you’ve been educated on the most?
P: Probably also because we use that in our own everyday lives…so it’s really reinforced. So someone with renal diet, we read that in a book but it’s just not…reinforced every day.

P: It also depends where you work, what types of patients you have, like if someone works at a renal floor and someone works on a heart floor, they’ll be obviously more comfortable with one diet over the other.

P: I think with the obesity epidemic we’re all more conscious of what – almost preventative diets – like diets for preventing diabetes or to prevent gaining weight, rather than what to do after the disease actually sets in.

P: Or you mean focus on the health promotion?

P: Yea.

M: does that kind of tie together because usually, I mean, eating really poorly leads to diabetes? I mean, I don’t know…

P: Right, but I can tell you how to not, how to avoid gaining weight, but I couldn’t tell you, once you like cross over and you have the actual disease, I’m not sure I could tell you how to manage that correctly. Making sure your blood sugars don’t cross too low, but making sure that they stay below like, extreme heights. So it’s uh…I dunno…it’s like a complicated...

P: Which is really funny because I feel like people always say how healthcare is so, they say like, reactive not proactive. So it’s funny to hear you say that you feel like you’d be the opposite.

P: Yea.

P: When people get obese, is when we all of a sudden we want to jump it. When people get diabetes we all want to treat.

M: Are there any that you would feel least comfortable? You wouldn’t know what to say to a patient who asked for nutrition advice?

P: Dialysis patients probably. I know that’s a pretty tricky…potassium, phosphorus and stuff…

P: Anyone that’s kind of borderline, their labs...

P: Yea..

P: I wouldn’t feel comfortable telling them you should eat this, or you should eat that…
P: There are people with Crohn’s disease that everything they eat…I think it’s almost personal, what they can and can’t eat. Without you know, going into gastric distress.

P: Yea.

P: I think there’s a lot of (can’t hear)…like which diets, fad diets, which ones are effective and which ones aren’t.

P: It’s not diet anymore its “lifestyle”.

-Laughing in agreement-

P: We should promote lifestyles….

M: Alright, well what we’re gonna do next is I’m going to pass one of these around. Just take 1 and pass it. Um, if you don’t have a pen let me know, because I will pass one over to you.

M: If you could circle the term that you would most likely use to describe the eating plan for a patient with diabetes. And then put an X next to the term you would least likely use to describe the eating plan for a patient with diabetes. If there is a term that you would use that you don’t see here, please write it down. Then if you could just jot it down quickly on the paper, just why for the circle and the X, um, and then we can go over it in a few minutes.

P: Is ADA the American Diabetes Association?

M: yes

M: Okay let’s go around the room so everyone can describe their answers.

P: I think that I would pick “diet” as the one I would least use. I would kind of stay away from anything that involves the world “diet” so yea…and for the one I would be likely to use I would say “healthy eating for diabetes management” because that’s what we want them to do, to eat healthy and manage their diabetes.

M: Has diet just been completely eliminated? Just out of curiosity?

P: Because it’s associated with a “fad”.

P: It’s like, you go on a diet, but what do you do when you go off a diet?

Right.

M: Okay
P: Um, I picked healthy eating for diabetes management because it doesn’t have the word “diet” so it would be more likely to be a lifestyle change to manage their diabetes. Picked low carb diet for least likely use.

P: There’s not much of a difference…I wouldn’t use any one with "diet”

P: I also chose healthy eating for diabetes management and I put down because it kind of gives the impression of achieving maximal health even with an illness. And I said that I would be least likely to use “diabetes diet”. I dunno that just doesn’t sound professional to me.

P: I didn’t like the ADA diet because it doesn’t sound like really anything, the ADA diet. I chose a well balanced diet. I don’t like consider the word, I mean at that point it just sounds like diet, meaning what the person eats. So I think that’s the important part is just to eat a balance and I don’t think diabetics need a low carb necessarily they just need to balance everything out. But that can be used for other than diabetics, cardiac etc. I mean if its low balanced, you know, low sodium, low fat, you know…low carb not necessarily low carb but controlled carb. So that’s what I put.

P: Um, the least to use is “diabetes diet” because I feel like it sounds like it puts a stigma on people, “I’m on the diabetes diet” not very professional and I would most likely use “healthy eating for diabetes management”. I feel like it’s positive and promotes a healthy lifestyle and most comprehensive term of all of them.

P: I would also choose healthy eating for diabetes management because I think it’s a clear description of what that diet is...diet meaning way of eating I guess…is attempting to achieve. I wouldn’t pick ADA because not everybody knows what ADA is and I don’t think that it’s clear to have an acronym in front of a diet.

M: Did the word “management” influence – because the one above it is the same without “management”.

P: Yes.

P: Yea, cuz it’s…you can’t necessarily cure it but you can manage it so it’s achievable, I dunno...achievement oriented in that way.

P: I put the same thing, healthy eating for diabetes management and the reason I chose that over just diabetes is because it makes it sound like a person that is taking on a lifestyle change and is in control of something, so by adjusting their eating habits they can take control of their diabetes. And then I didn’t like the term “diabetes diet” because it sounds like a short term solution.
P: I chose “ADA” because it’s an association and I figured that’s a credited resource for a diabetic. And I wouldn’t choose well-balanced because it’s kind of vague and it isn’t describing, it’s not describing diabetes so it wouldn’t necessarily be for a diabetic patient.

P: I didn’t like ADA diet because I feel like maybe some people, a lot of people aren’t good with acronyms. I chose “low carbohydrate diet” I don’t know if my reasoning would make sense anymore… but I just felt that maybe for some people who aren’t good with rotating info, maybe if they just remembered that, like, you know.. You need a low carb diet when you’re a diabetic. So I thought maybe that would just stick in their mind and at least get that right.

P: I chose “healthy eating for diabetes management” because I want them to think that management is possible. Wouldn’t like the ADA diet because it’s very nondescript.

P: I chose the Diabetes Diet because it sounds like….specific; this is the reason why you’re doing it. And I didn’t like “healthy eating for diabetes management” because it just sounds vague and a little uptight… like if someone this is your diet “healthy eating for diabetes management” I dunno, it’s a little wordy, a little overwhelming.

M: So, the people who chose management or the people who chose healthy eating for diabetes, um, there were also people who chose ADA or Diabetes Diet. So, can anybody elaborate a little bit more on why you would or wouldn’t choose them?

P: I think because the low carbohydrate diet because I think of low carbohydrate like 10 grams or less of carbohydrate a day and that’s like what strikes me and I don’t think that’s healthy for anyone…

M: Are there terms on this list… or additional terms that they’ve heard or would rather use?

P: No answer.

M: Has anybody used these terms in their...

P: No.

P: I’ve seen ADA diet used specifically at a hospital like all the time.

M: The ADA diet?

Yea.

M: So, how do you feel about nurses being responsible for having basic knowledge of nutrition for diabetes management? I mean, I know it’s kind of what we’ve been talking about…but you know, the nurse would be the responsible person to give this information.

P: I think we’d put nutritionists out of a job.

Laughing...

P: But I think it’s important – no I think it’s important that we have the knowledge and that we are able to teach and reinforce…like the more specific knowledge that they’re given, but I think that they still need that expect because we are experts in different things and you know, the doctors an expert in one thing, we may reinforce that, but we have our own things that we’re experts in. So, I think it’s okay to reinforce but I don’t think that we’re that expert.

P: But we definitely do need to know and have at least the basic because every time the patient has a question, you can’t call a nutritionist.

P: Right.

P: Because they don’t work the same hours we do.

P: Yea, I agree with that. Cuz I feel that as a nurse you’re responsible for the overall care of that patient. So it’s important that you know basic nutrition and what the patient’s condition is and how nutrition applies to that person. So I feel like you need to be able to reinforce that. But then if you don’t know something then you need to call an expert.

P: I disagree. I think for diabetes in particular, nurses need to know, maybe not expert level, but just underneath that, because diabetes is something that we’re gonna see all the time. And you know, like you said, you can’t always be calling for a reference. But this is just something that is gonna be so common that I think it’s really important that its one of the diseases we have put a really grasp on.

P: Do you feel that it is something we should do in undergrad or something once you’re…?

P: Yea. Because I think you’re gonna see these patients on every floor, like, they’re problems are gonna be you know, ranging from all sorts of different types of things. You’re gonna see, you know cancer patients with diabetes, heart patients with diabetes, probably not as likely. Probably not as likely. But you know, you’re renal failure and everything else. So yea I think so.

P: And you’re right because diabetes is just like a disease that you constantly need teaching. Like you don’t learn it after one sit down talk with someone. You need it all the
time as a patient. Or just someone with diabetes, it’s good if you’re in the hospital, that nurse needs to know what they’re talking. And they need to be able to teach it to you.

P: I feel like if you’re a floor nurse, and if you’re responsible for that diabetic diet teaching that day, that you couldn’t get it all done. Like we need to have the knowledge to reinforce it but we can’t be the only ones doing it.

P: I agree with that. Like a nutritionist should be able to assess someone and sort of like do an individual plan...whereas I think as a nurse you would know like what you should tell someone but you can’t tell everyone the same exact like diet, what you should and shouldn’t eat.

P: Yea I think I would definitely feel more comfortable as a nurse with at least the basics of nutrition.

M: So, Is there anyone who doesn’t feel that a nurse, in no matter what field, should have the basic, that’s just an automatic thing, to have basic knowledge of diabetes?

P: Yea, at least know how to teach patients how to count carbohydrates, how to balance insulin, if on insulin. You know, there’s a bunch of medications for diabetics....Need to know at least basic information for that. I don’t think that nurses need to know like, every pharmacological aspect of every medication. I think, there’s just so many different ones...I’ve learned little bit about it but I still don’t understand all the mechanisms of how diabetes works like the insulin receptors and how they open up the glucose...that’s what a nutritionist would be better with. But I mean, to at least teach someone how to manage their diet, how to count what they can eat, the things they should not eat and remind patients the things like, they can’t have cookies because of sugar, you really can’t have cookies because of the carbohydrate its mostly flour.

M: can you tell me al little more why you think you wouldn’t have to be responsible for what you’re describing?

P: Because there’s so many new medications that do different things. Like metformin, what that is supposed to, I forget, I think it’s supposed to forget the way the insulin receptors are built on the cell walls in muscles or something. And then you know, I think it’s important to know insulin is there as the key to open up the muscles, let the sugars in, but it’s hard to know exactly all of the mechanics of it. I just don’t know...there should be a nutritionist for something.

P: I don’t think nutritionist would know that.
P: Regardless of the medication they’re on, they’re diets are pretty much gonna be, not completely uniform, but they are basic idea across the board. So I don’t think the medication, or how the medication works really affects what diet they’re on.

P: I think that, um, as far as medications go, like, we are taught that we’re the patients’ last line of defense when we give that medication. So we learn that like, if we don’t know what that medication does, side effects, etc you have to look that medication up, so I think it’s important that we know about different medications especially with diabetics and how it’s gonna react so we can do a better job.

M: So how would you describe your current knowledge level of nutrition management of diabetes? How would you describe it?

P: Not good.

P: Laughing…

P: 5 years of this, I mean, I definitely learned something. You get diabetic clients all the time in clinical. Just last clinical, there’s acute incident on the floor because the guy came in with an A1C of like 900 and he uh…was eating a hoagie and drinking Gatorade. And like, I don’t know that much but I knew that wasn’t right.

P: Laughing…

P: Like, I was able to go in there and say “so…this is why we shouldn’t have the hoagie.”

P: Laughing…

M: So is that…everybody pretty much feels that way? We’re not experts

M: So a meal has been delivered to one of your patients. This is what the meal would be (holds up picture of cereal with fruit and juice). Your patient would say to you, “I have diabetes, can I eat this?” So, how would you feel about giving advice to that patient – based on kind of what you just said. You saw them eating a hoagie and…

P: For me, looking at that, I see a couple red flags. First of all the orange juice is super high.

M: The OJ is 4oz just so you know.

P: Oh okay..

P: A lot of fruit.

P: Well the berries, I don’t think are a concern.
P: Well it would depend. For me, it would depend on A) type 1 or type 2 diabetes. If it was type 1 I would want to make sure that they have had their glucose test and if they were low I’d feel more comfortable giving the meal than if they’re high. Because that’s gonna spike their blood sugar, from my dismal level, that would spike their blood glucose pretty high.

P: I concur.

P: I would probably have them choose between the juice and cereal and milk.

M: *is that how you would respond?*

P: I mean I’m not sure how many carbohydrates, but I think I would probably not give them the juice but they could probably have the cereal and milk. Which seem, the patient I saw in teaching he could have cereal and milk.

P: Doesn’t milk also spike? But the cereal and milk together can have a lot of protein…

(A lot of talking at the same time)

P: Sugar, sugar, sugar!

P: Everything has sugar in it

M: *So how would you respond to a patient with diabetes, if they asked?*

P: I don’t know I’m not a nutritionist.

P: I would say I would suggest you don’t eat that, Let me call dietary and see if we can bring up a more appropriate meal for you.

P: Take blood sugars to better assess the situation. Look at their last blood sugar.

P: See what they’ve eaten in the past, if they’ve had this every morning and they’ve been fine then maybe you know, it’s just what they do.

M: *What about if the portion sizes were different? Would you have a different response?*

P: If they were bigger?

M: *either*

P: If they were smaller I would feel more comfortable and 4 oz isn’t that much juice but it’s still…

P: Well I think juice is really high in sugar.
P: Very high.

P: And milk kinda high I think but like, juice is probably one of the worst things for a diabetic.

P: Juice is what you give a hypoglycemic patient.

P: Yea orange juice especially.

M: is there anything we could add to this to make it better?

P: I don’t think…

P: Well maybe more protein, there’s a little bit of protein in the milk. Again maybe a side of eggs or egg whites. But they have fruit which is important. But I wouldn’t suggest the juice. The juice just seems like a big red flag.

M: So what if your patient received this meal? And the milk is 8oz.

P: Are those cookies? Two small cookies

-Laughing-

P: Are they sugar free cookies? Laughing…

P: Are they carrots or tomatoes?

P: Are they sugar free cookies?

M: Comment on both ways/ if they were sugar free, if they weren’t.

P: Potatoes!

P: Well, just have to have moderation.

P: I’m hungry now…laughing

P: I don’t like the milk in there too because the milk is adding more sugar.

P: That’s a pretty low sugar meal so I think the milk may be…you don’t want them to fall too low, like..

P: But having potatoes and carrots and cookies, that should be like, you know, I think for diabetics…Promoting no calorie beverages would probably be better.

P: I keep looking at it because you want the diet to be realistic. I have cousins who are diabetic and they go to birthday parties and eat a piece of birthday cake. They get it
just make compromises in other ways. But I don’t know…since I don’t have my nutrition background I look at that and think “omg well look at the potatoes and the milk and cookies” but at the same point, they’re human and they should be allowed to have some carbohydrates.

P: When you’re a nurse on the floor, if that was your patient all day, you would know what they ate earlier. Is this a good idea or you know…

P: Looks well balanced in my opinion

P: I’m just saying, if they had like extra sugars or if their blood sugar is higher than normal…

P: Also a lot of patients get insulin before they eat

P: Exactly

P: So that they can be okay when they eat their meals.

P: And I think everything is good in moderation. That doesn’t look like half the plate is full of potatoes, so

P: Right.

P: It looks very average serving or an appropriate serving.

P: It’s unrealistic to think they are gonna eat no carbs at all.

P: So can you give me some examples of how you would actually answer if I said, I have diabetes, can I eat?

P: I’d say, “chow down!”

P: If it was their first time, do a little bit of patient education, where are the carbohydrates in the meal, so you wouldn’t want a plate full of cookies because that’s gonna spike up your glucose – that’s kind of obvious one but even the mashed potatoes.

P: Yea.

P: I think the stewed carrots would do it too, they could be high in sugar.

P: Yea.

M: so how do you guys feel about nurses, I know it sounds like the same question, but being responsible to give the nutrition advice? So not just to have the knowledge but to actually give the advice? Is it pretty much going along with this theme? What if you had
somebody else...like a lot of you mentioned somebody else working with you. But you would be responsible to actually give that advice?

P: Would we be the sole person?

P: I feel like we’re there when they get their meals, we’re the last line of defense when they get their meds. Their tray goes into their room. You need to know whether or not they can have that. So the nutritionist isn’t gonna be there every time they eat. So we kind of have to be there and tell them what to do.

P: Your question is, do you mean, the nurses are the primary person giving them any kind of education or do you mean after the consultation with somebody?

M: Either scenario.

P: I agree that you’re the person that’s actually giving the food to eat so you should know what you’re doing. But I don’t feel comfortable giving the initial – all the information.

P: I think it’s not a bad idea that nurses be responsible for that. But I know that I wouldn’t feel comfortable at this stage taking on the responsibility and maybe I’ll feel differently three quarters from now, but I think especially for diabetes, where it’s so important, if we had a specific class, even if it was just one day, dedicated to management of diabetes and diet. Even that, I would feel like I’d have a baseline knowledge. Something to back up my assumptions that I already have that would be enough to make me feel comfortable doing so, but at this stage I’m not.

P: I think something to learn how to count carbohydrates would be good. looking at that I don’t know how many carbohydrates. It looks like it could be, well a half cup of potatoes is 1 serving and 2 cookies is a half a serving, maybe, and then the carrots, it just doesn’t..But then what is a serving in terms of how much they can have versus how much insulin do they need? Like at St. Christopher’s hospital where I was at, the menu would specify how many carbohydrates or sugars were in each item. So the diabetic could have 50 grams of sugar per meal or something. Then they would go through and pick what they could have, you know, a half of a bagel. Small bagels or something, but you know, I mean he had a bowl of cereal and milk.

M: Does anybody feel differently or opposed to feeling nurses should be responsible at all for giving nutrition advice?

P: I don’t think we should be solely responsible, I think there should be someone there to give a reference to. But I think it’s a good idea to know nutrition.

M: So, in what ways, if any, might patient care be affected if all nurses were able to give nutrition advice for diabetes management?
P: If you had 6 patients and 2 of your patients were diabetic and you were responsible for giving diabetic teaching, FULLY, to those 2 patients, your other 4 patients would be neglected.

P: Absolutely.

P: But it might also increase continuity of care because the nurses they’re like with you all day long, giving you meds, assessing you and teaching you about nutrition. Instead of having the doctor and the nutritionist coming in…

P: If I wasn’t solely responsible, just there when the tray came in, you can eat this, but let’s go through, let’s count carbs, let’s do this, let’s do this…NO I don’t think then my other 4 patients would be ringing their call bell.

P: 5-15 minutes of information. 15 minutes sounds like a lot of time actually. Patients with diabetes. But it would be like every day or every shift the nurse would come in and just go over a little bit of teaching for newly diagnosed or someone who seems like they have problems with managing their diabetes.

P: Also dependent on the setting in which you’re providing the nursing care. If you’re doing home care, or community health which is more preventative you should be and have more time to maybe go over the requirements that a diabetic has and what they should do with their diet. Whereas in an acute care setting, you have more patients so you may not have the time. It may not be your topic priority, but at that time there are nutritionists on staff for that reason. So it may depend on the environment that you’re working in.

M: So do you think that patient care would improve? Or get worse? Overall, what do people think?

P: I think patient care would improve by nurses having that knowledge, I think knowing about the food and being able to relate that to the medications you’re providing is gonna help with medical errors if you kind of have an idea of why you’re administering medication, um, and the continuity also…but I definitely still think that the nutritionist should play the initial role.

M: in what ways might nurses be affected by adding what we’ve been talking to your responsibilities?

P: I think there will always be people who don’t like things being added to their responsibilities. You’ll always have that.
M: But how do you think your profession would be affected by having this added to your responsibilities. What about it, besides not liking it, you know, what about it would change?

P: I mean the more knowledgeable anybody is about anything the more respect they’re gonna get in the long run. So I think if we did increase our knowledge base, yea eventually over time, once those resistant to change, kinda gave in, it would be beneficial

P: Patient education and teaching is a huge part of the profession. So it’s just sort of already engrained a little bit to some extent.

P: I wouldn’t really see it as changing too much..Hopefully more respect, but I kind of think that should be our goal already.

P: I think that, just one concept is that the meal time is usually something that the nurse assistants will drop the trays off and at this point, that’s not usually something that’s currently a nurse’s job. So to go back and retake that position again, come in, at meal time, which is when the teaching is most important. I think that would almost- would just seem to be a little bit weird. Just going back to being responsible for the patient meals where they haven’t been for awhile because it’s been going to like the you know, nursing assistants and the dietary comes in and drops their food off but now the nurse would have to come in and be a part of that.

M: does anyone disagree or agree?

P: I disagree because I think the nurse is always responsible/accountable, even if the aid is the one bringing the food in and feeding the patient, that nurse is held accountable for what’s on that tray. So if that patient is NPO and the assistant gave them their food, the nurse is the one who is ultimately responsible.

P: Ultimately it’s the nursing responsibility / accountability.

M: So, in what ways do you guys think that nutrition education be improved in your nursing program? Even if it were never to be, just so you would feel confident in everything we’ve talked about tonight.

P: Maybe reinforce it at clinical, like sometimes at clinical you get a patient with a certain, like maybe they have a murmur, so the nurse or teacher says make sure you listen to that murmur, what grade is it, blah blah blah. If you have a diabetic patient, be like okay I want you to go in at that meal time and I want you to count carbs, or count sugars or whatever. Be like, this is how much insulin you’re gonna give because you’ve eaten this. Just to reinforce this. You could also do this in class

P: I dunno if we ever did counting carbs.
P: No.

P: No I don't think so

P: Maybe in nutrition…but that was like, soo long ago.

P: I think clinical would be the best place to do that because that’s where you really learn to apply. And that’s where you give the insulin and check blood sugars.

P: Like make it a learning objective in clinical.

P: Yea.

P: Yea.

M: Does anyone else have any different thoughts?

P: For ACE program, I think we’ve got some classes where I can see why they put it in the curriculum, like ethics. But we needed that as a pre-requisite course to get into the program. Whereas instead of having (I think we have 2-3 ethics intertwined) having a nutrition for diseases would be more beneficial

P: That would be a great course

P: That would be nice

P: Yea.

P: Yea.

P: That would have been so much better than like, informatics.

P: Laughing..yea

P: Just to spend more time on it as we go through each disease cuz, I mean, I don’t know for sure but I’m assuming we’re gonna kinda blow by nutrition on most diseases.

P: Every class I’ve had that we talk about a disease process we touch on nutrition but it’s never enough o make you feel comfortable teaching someone that.

M: would you all want to see, I mean if there’s someone who doesn’t want to see nutrition please say that too, but how would you all...

P: Even like, I want to do NICU so I’m not gonna be doing diabetic teaching to like an infant (laughing) but like, my step mom is diabetic and you know, even though I don’t feel like in my professional life it would be appropriate or like, it would be needed
really…In my personal life I’ll always know someone who is diabetic, I’ll always know someone who has a heart problem or…

P: But you would use that in the NICU because in the NICU you do a lot of family care and if the mom is diabetic and not taking care of herself, you have to be the one to step up and bring that up to her…so you would be using it.

P: Yea I mean if you have a relationship with the family and you talk to the mom about her health problems…then yea...

P: Well I saw a nurse who worked in the NICU, she knew everything about these families.

P: Yea, but I’m just saying but when it comes to my profession, what I want to do professionally, it’s taking care of babies so I don’t feel like, you know…but what I’m saying in other areas of my life it is important for everyone to know that kind of stuff. And as a nurse people come to you and I know my mom doesn’t care that I want to take care of babies. All she knows is that I want to be a nurse so I’m supposed to know everything single thing about everything.

P: Haha yea…laughing…

P: That’s true…

M: Marisa, okay, so if you could all take your paper and turn it over to the blank side…and if you could just write down three words/phrases to describe how you feel about the role of nurses in promoting nutritional management of diabetes.

P: Three words?

M: it can be a phrase…just something short/ you know...

P: Can you repeat the question?

M: Three words/phrases to describe how you feel about the role of nurses in promoting nutritional management of diabetes. So, what we’ve talked about tonight. Summarize your thoughts.

P: Educator reinforce support

P: Important, ideal, life enhancing

P: I did phrases: Limited due to lack of knowledge, important and necessary for better outcomes
P: I said, important, necessary and need to reinforce

P: Educator and reinforce of healthy lifestyles

P: Education of patient and family, family because a lot of kids who are now getting diagnosed

P: I said assess, evaluate and educate

P: Continuing nutritional education, reinforcement, didn’t come up with a third

P: Patient educator, lifestyle and care throughout the course of illness from post-dietitian through life

P: Vital, reinforcement, (something) patient interaction

P: Responsible for patient, be able to help manage

M: So anything you guys wish we had talked about, or any questions that we should have asked in talking about what the topic was, now that you know what we shared here? Maybe that we could have delved into more?

P: I think maybe a little bit about the different…that other diets would help too if we had a good understanding of what a good diet is, instead of knowing there’s a low carb diet, the cabbage soup diet and like…15,000 different diets you know, the zone diet and it’s like, if we had a better understanding of it, knowing which diets were more effective than others. Diabetic diets, or just a healthy diet for people with diabetes, or heart problems and other you know, problems like, it’s just a general healthy diet promotion.

M: I just had a question that I was thinking…when you guys were talking about the experts in nutrition, you called them nutritionists. I didn’t know if you guys prefer that term over “dietitian”

P: There’s a difference right?

P: I couldn’t remember what the difference.

P: I was gonna bring that up at one point because like, dietitians have a lot of chemistry background and I’m not sure, I think nutrition…I don’t actually know what a nutritionist..What the difference is. I do know that a dietitian has really strong chemistry…

P: At CHOP, the patients see a nutritionist. The nutritionist comes…Our nutrition teacher was a dietitian.
P: Is the person at CHOP a registered dietitian or are they actually a nutritionist but they might registered dietitians?

P: Yea….

P: I think we’re just saying it because it’s a nutrition consult. So we just say know nutrition.

P: I know my cousin is going to school for nutrition and I asked what her classes were in and one of them was like nutrition in chemistry. Like I know that she takes specific chemistry classes as part of her program, I don’t know if a dietitian a lot more than that…

P: But did she say nutrition but is she actually gonna become a registered dietitian? 

P: That’s a good point…laughing…I will let you know.

P: Could be used interchangeably. Yea…

P: Probably

P: Yea.

P: But yea, like you said, you do have to be an RD to be employed at a hospital as far as I know.

M: Well thank you all for coming.

R: The purpose of the study is part of my thesis for my master’s project. So hopefully it will be published hopefully in the next year you guys can see the results. But also because the nutrition program is nursing school, right now we’re in the biology department and we’re moving to nursing which is really a better fit for us. So I won’t be here when that happens I’m really excited. So, it’s just to kinda help to bring nursing and nutrition together and interacting. And I guess another part of the background is that, we all know that diabetes is so prevalent but there’s was this huge report and 2 of 3 people aren’t meeting their goals even though it’s required that people with diabetes go through diabetes education classes, they’re still not meeting their goals so this is just one small piece in trying to see what we can do to improve that.

R: So each of you can sign a receipt to receive your compensation.

-Collecting receipts-

P: Well this was a good time.

P: That was fun.
APPENDIX J: FOCUS GROUP 2 TRANSCRIPT

Moderator designated by “M”
Participant designated by “P”
Observing Researcher designated by “R”

M: Alright guys, let’s get started. Welcome everyone and thank you for taking the time to come to the focus group. My name is Marisa and I’ve been asked by the Nutrition Sciences department to get some information from you guys and your opinions as nursing students on the role of nurses and nutrition in healthcare. So we’re going to be asking a series of questions and we definitely want to hear from everybody. Please don’t be shy, just speak up if you agree or if you disagree…and we understand that there will be different opinions. You can answer what other people said; if you have questions you can ask each other. Please just make sure your cell phones are on quiet and we’ll get started. Also you’ll notice that there is a recorder in the middle, everything will be kept confidential, and your names won’t be used in any reports or anything. So that is all.
M: So let’s start over here, tell us your name and what you enjoy most about nursing.

P: I’m an ACE student so I haven’t been a nurse very long, or going to be a nurse for very long. Presently I like the potential of helping people.

M: and what’s your previous work experience?

P: I have an anthropology degree so I worked with the Red Cross and that’s where I wanna go.

M: Do you have previous work experience in that?

P: In disasters? No. but I did a lot of marketing.

P: I’m in the co-op program and my favorite thing so far is at CHOP, I just really love children. I love being with the families and it’s the hardest time in their lives so I just think being able to brighten there day or make things a little bit easier for them is definitely the best park.

P: I’m also from the co-op program. What I like most about nursing is the flexibility of the job and the opportunity that it presents because I think the entire field overall is very interesting and I’d like to know that you can go over everything from the ER to the OR, so it’s not something I’ll get burned out or tired with because I can kinda switch around if I get bored with one thing.
P: Co-op program. What I like about it is the patient interaction and I guess the patient education aspect of it and also being there to support the patients and being advocates for them. Being communication for the doctors…

M: Where are you doing your co-op?

P: Right now at Jefferson University. Infusion, outpatient.

P: I’m in the co-op program as well. Just like everyone said, just feeling of being, you know, helping someone and stability, different options.

M: where are you doing your co-op?

P: Oh I’m in classes right now.

P: I’m in the co-op program also, and what I like most about nursing is the patient teaching aspect of it and learning something new every day, keeps you on your toes, really interesting.

M: and where are you doing your co-op?

P: I’m in class, too.

M: So you both did your co-op already? Where did you do them?

P: Lancaster.

P: I did the first 3 months on med-surge floor and the other 3 was on the telemetry floor.

P: I did one at HUP in the post-partum and my other 2 were at CHOP, one in ED and one in PICU.

P: Hi everybody I’m actually in the ACE program in my senior year. I like helping people and the flexibility as well and just the fact that where I came from, I have a degree in liberal arts and I did mortgage banking for 12 years and there was no place for growth. Here if you get bored with one job or description you can move around and there’s just so much to do.

M: okay, great. So, first I’m going to all think about your current nursing program that you’re in and if you could tell me, in what ways at all, have you learned about nutrition?

P: We take 2 nutrition courses, I dunno if the ACE program does (only 1) but co-op takes nutrition 1 for nurses so it is very specific to the nursing role. Then we take nutrition 2 which was a little bit more…well the first one was sort of about the basics of nutrition
and the science. But all of it is tailored to what we need to know and what we can pass on to patients I guess.

M: And, have you guys enjoyed those classes, have you found them...

P: They’re pretty fascinating. I mean it’s a lot to take in. When we start to put it in perspective, we’re doing fluids and electrolytes now so we were just talking about avocados (laughing). But like you start to break it into little compartments and it’s really interesting how a couple things could really affect your patient.

P: I actually feel that we don’t get enough of that information…because they talk about the food and obviously you hear potassium with bananas but then you don’t hear the other foods that impact…but everything is just so tired into the reason for nutrition that I feel as though they incorporate in adult and different classes but they don’t give us enough of the exact one-on-one of additional nutrition information that they need to know in terms of food. It’s all blended in but it’s so thick and so…

P: Right. I feel like it’s a very broad overview. They hit all the points. I don’t feel that there is anything that I wish they had taught that wasn’t taught in the classes, but it is just kind of very, kind of shallow information, I feel like. There’s not anything that I didn’t learn about that…I feel like they kind of covered everything that was necessary, I don’t feel that the courses missed anything but I feel like the depth is not there for a full understanding.

M: does anyone agree or disagree? Do you feel everything is covered basic or maybe could use some more?

P: I feel like in our nutrition classes, I don’t like how it was kind of separated from the nursing classes. I kinda hoped/wished now that the nutrition classes that we had that they kind of referred back to nursing, like patient care…like in this situation this would apply…in inpatient care. I mean that does happen in our nursing classes but they don’t go as in depth as they did in our nutrition classes.

P: Well, also our nutrition class that we take is open…it’s not just for nurses

P: Yea that’s true.

P: Yea (a lot of agreement)

P: So I guess having a nutrition class that’s just for nursing students would be more beneficial for us. I mean I don’t really remember much from nutrition…

P: Me either…
P: I just remember that like vegetables are good…eat broccoli

P: Yea broccoli is good… (Laughing)

P: And that cantaloupes have more potassium than bananas. That’s pretty much all I remember.

P: But then, I think you get more of you, I dunno, those charts that we had that said, how many cups of this…like just the fat values, I also learned just, pigskin milk or 1% because you get your fat from everywhere else, so if you wanna avoid the increased intake of calories just like, learn to adjust it and whatnot, I dunno…That’s all that I remember…

M: So, in terms of patients who are diabetic, in your opinion as nursing students, which medical professional or non-medical professional, would have a role in giving nutrition advice to patients with diabetes?

P: I would think the dietitian…

P: Then you would just emphasize the teaching, if there was something that they (the dietitian) missed…or kind of re-emphasize whatever was taught to them because it could be specifically tailored to them.

P: Yea definitely when they’re first diagnosed (a lot of agreement)…that’s not our call, they need to be talked to by a doctor or dietitian or specialist, but then our role is to keep reinforcing it.

P: My father is actually diabetic so I get to see a lot of the dynamic of how it works, you know, cross discipline and he actually gets his best advice from the specialized doctor that he goes to for his diabetes. It’s not even the dietitian just because it’s so complex in the way different foods kind of affect his blood sugar levels. And I feel like the practicality of the nursing influence, I feel like nurses kind of tailor towards avoiding the extremes, they’re more geared to treating extremely high and extremely low and they don’t really offer too much kind of, day to day advice for the patients. Just cuz there’s not that many opportunities for them (nurses) to sit down and talk to them about day to day advice because they’re so busy with other patients and treating them with whatever crisis they’re having with their diabetes.

M: So how would you feel if a patient with diabetes asked you for nutrition advice?

P: If they asked me, I mean I feel that is the most ideal situation because in them asking you, kind of shows that they are receptive to it and they want to learn about it…it’s very challenging in the role of a nurse to kind of initiate that sort of conversation with somebody who’s in the hospital for whatever reason. Even if they’re in the hospital for
diabetes, generally they’re not really receptive to you coming in there and trying to force them to learn about daily nutrition, but if somebody specifically approached me about it you know… I would definitely make sure that I took the time, you know..If not right that second, sometime during that shift or during that day to sit down and really go over and give them an in-depth kind of overview of it.

*M: So an overview. Would you feel comfortable giving all the information the patient needed?*

P: Absolutely. I would of course refer them to more, certified specialist just because my personal experience with the disease process gives me an edge over what we learn through nursing school, you know, obviously I’m not a qualified, officially…they would need to be referred, but I could definitely just make them aware that it’s kind of an official analysis of…you know…more an informal discussion rather than…

P: Can also offer literature

*M: So you would feel comfortable with it, if a patient with diabetes asked you for nutrition advice and answering them fully?*

P: Fully? No.

P: No.

P: Overview, yes.

P: I feel like the role that they emphasize…we talk about diabetes a good deal early on in our nursing education…I feel the role that they emphasize is health promotion first and intervention with the diabetes – that’s the thing we learn the most. Once they are diabetic, we’re kind of like, how we manage…either a low blood sugar crisis or when they go into diabetic ketoacidosis. I feel like we don’t learn enough that ….I would not feel comfortable if a diabetic patient said to me, teach me what to do, how to manage my disease, not during the extremes but every day how to stay away from those extremes, I would be like…well let me look it up. Because I feel like, a big thing at CHOP, I feel like there is so many resources on our employee internet where I could look up literature, tons of stuff in street talk so it’s not all medical and stuff, and I could feel comfortable giving them that and then maybe the first person I would call if I had a diabetic kid and the parent or kid wanted to know how to deal with it, the first person I would call is the nutritionist on our floor. I wouldn’t be like, oh yea let me tell you what you need to know because I don’t feel comfortable.

*M: Does everyone feel that way?*

P: Nods…
P: I feel like if they have diabetes, they probably have other co-morbidities, so if you’re bringing up if you have to eat something, whatever they could be eating could make something else worse so...

M: So, are there any nutrition topics that you would feel more comfortable discussing with patients than others? Aside from diabetes?

P: Like all by myself? With no resources?

M: Well the resources that you have, using the resources you might have...

P: Well I have patients that are on a low-fat diet, really impaired, staying below 30 grams of fat which is like nothing for an entire day…by myself I’d be like, umm skim milk? I guess that’s what you would say. But at CHOP when I had those patients, there was a list of everything, EVERY thing on the menu and how many grams of fat they had, so I felt, by myself, that I could sufficiently manage their problem if I was ordering their food for them. Or I could tell them what to order. But, without that, If I just knew this patient was on a fat-restriction, what I’ve learned in nursing school and on the floor as a nurse, I don’t think I would be the person to go to.

M: how about anybody else? Any nutrition topic you would feel comfortable not discussing with a patient? Even if you’re not fully on you’re on? But the initial person?

-Laughing-

P: I mean, it would be easier if I was a nutritious person and knew which choices and knew which food choices to eat…cuz like I am a healthy person, I’m not gonna think about what’s going to think about what I eat before I put it in my body. Actually that’s kind of a lie, because I’m allergic to a lot of things but I don’t really pay attention to my allergies…I still eat a lot of food I’m not supposed to. I just don’t know much about the value of food and benefits of eating a particular food group as opposed to another or how to manage more protein/a high protein diet as opposed to a high carbohydrate diet. I dunno...

P: There are so many very specialized diets that the patients have to be on...you know renal patients are on strict sodium and sometimes potassium diets. Things along that nature are pretty far out of our scope of practice just because of the complexity of it and how far it goes into…I feel like the resources available to us are very good at CHOP, I would assume everywhere. You have the menus of low sodium foods and the quick lists of common foods that fit within this restriction. So I feel like as far as presenting those to patients, that would be fine, but it’s kind of challenging when they have questions about it that aren’t kind of right in front of them…I feel like anything that’s not generalized is pretty, kinda of out of our scope of practice. If the patient was overweight and wanted...
tips on how to avoid unhealthy lifestyle habits, you know, I would feel comfortable doing that but I feel like that is very unspecified. I can teach them behavior modifications as well as dieting techniques but um, I feel like real specific stuff, in-depth, is kind of somebody else’s….

P: Definitely depends on what kind of floor you’re working on and what kind of nutritional advice they’re asking for. If you’ve been working on a renal floor you’re entire career, 20 years plus, I think at that point obviously you know what to say. Starting off? No. you definitely don’t. Unless it’s like, how do I cut calories?

M: So how do you start to learn/know what to say? Just who you’re working with? That information comes from…?

P: Like with the renal floor example, yea you learn and pick things up…I mean my grandparents live with us so I pick things up from what they’re allowed or not allowed to have.

M: Right, but who do you think you would learn it the most from?

P: From other more experienced nurses, or listening to dietitians talk, or the doctors talk. Or reading charts and there’s a bunch of resources available.

M: but do you think and have any of you in your experience worked with nurses that she’s suggesting, that work so long in a unit that they are comfortable with giving nutrition advice on their own?

P: No, I don’t think so – not on my floor. My floor is a cardiac floor so there are a lot of fluid restrictions…so if someone says this patient can’t have more than 3 L fluids a day, okay I can do that no problem. But I’ll give you an example of a nutrition problem we have every day: We have a lot of infants on our floor and our nutritionist…what kind of formula they take is an order in their chart, we can’t just pick up any generic bottle, “good start” or something and give it to them. The nutritionist does this, I don’t even know really what she does, but this whole work up and decides the specific formula for this baby…how premature they are, their electrolytes, and if you vary from that or run out of that specific one and instead of ordering it up, like how many calories per ounce…there is a lot involved especially with the formula and I don’t think a single nurse even if they’ve been there 20 years and look at a baby and know what formula to use. Even the doctors on rounds, the nutritionist can’t make orders which is kind of weird I think…that’s a little frustrating…the doctors make the orders. But every time I see the doctor say “now what kind of diet are we gonna put them on? Oh-call the nutritionist, get her to come on rounds with us and tell us what to do so we can make the order. I think
even doctors and nurses look to that person (nutritionist) because they know that that’s the person who knows.

M: Does anyone else feel the same or differently?

P: Just going along with what they were saying, we learn a general overview of it. If someone says how much potassium in a banana I would say I don’t know…I wouldn’t know the exact numbers. I just know, okay, you shouldn’t have too much cholesterol or saturated fat, but to say an amount I don’t think I would know…

M: Okay so what I’m going to do is pass this paper of paper around. Take one and pass it around. If you need pens there are some on the table. I’ll wait until you all have the paper.

M: So, if you were describing a diet for a patient with diabetes, what term would you most likely use to describe this diet? Please circle the term you would most likely use and make a note as to why you would use it. Also an “x” next to the term you would least likely use and then also make a note. If there are any terms you would use that you don’t see on the list, please write them down.

M: So let’s go around the room and share.

P: I actually like the healthy eating for diabetes management because you want to re-emphasize the healthiness of the eating um and also the diabetes. You want to make sure it’s geared to a diabetic patient. I did diabetes diet and also the ADA diet. I know that it probably doesn’t apply but I also like the fact that you can incorporate some of the diabetic regimen in the ADA and the health promotion. The other ones I didn’t like.

M: the other ones you didn’t like at all?

No.

M: How come?

P: Honestly they just don’t sound right to me. Like a low carbohydrate it doesn’t necessarily have to be right for that particular person. The well balanced – how do you know it’s well balanced – it could be a little more protein or less protein so I mean it might be well balanced for that particular person but I don’t like the connotation. I don’t like the healthy eating for diabetes – I don’t know why. I think it sounds better when you say “management”.

M: Okay, next...
P: I also liked the healthy eating for diabetes management and I only put “x” next to the well balanced diet because I didn’t like how it sounded…it doesn’t seem…I dunno..

M: and why did you like the one you chose?

P: Because it seems like it is kind of broad and can include different diet plans for diabetes management depending on the individual…Like diabetes diet seems like there is one and only diet for a diabetic patient. It really narrows it down for the other ones….Like low carbohydrate no because it’s only one thing. Management seems like it is a diet that can be treated by the nutritionist or whoever and made to be specific to each patient.

P: I circled ADA diet actually because that’s what I usually hear when everybody else…(Loud noise) and also it’s what they use in hospitals, right? And the one that I don’t use or wouldn’t use is “low carb diet” because it’s not just about carbohydrates, there’s more to diabetic diet.

M: and when you say you hear everybody say ADA diet…who?

P: Like nurses and people in hospitals, when a patient has an ADA diet, or diabetes tray.

M: and you’ve heard nutritionists use that term too?

Yea.

P: I feel generally, all the words are related in a way, but I picked, circled the healthy eating for diabetes management just because it is more specific and just like, feel like it is a refined for diabetes management. Didn’t like well balanced because you can have a well balanced diet for any person…you need to focus on a diabetic person in this particular case, so…If I had to choose that well balanced is the least likely.

P: I did this under the assumption that you were gonna be discussing it with the patient and for that purposes I would cross out the ADA diet because I feel like it is equivalent of telling a parent their child was diaphoretic overnight because it is medical jargon and is not going to really apply outside of the hospital setting. Then, for the one that I circled, I circled healthy eating for diabetes. I feel like the word management on the end of that (the last one) would kind of cause unnecessary anxiety to a diabetic patient because there is a lot of coping issues with – associated with that diagnosis because it is such a life altering…labeling it with management is kind of – and even the healthy eating I’m not 100% sure about because along the same lines, I feel like telling someone “health foods” oh we’re gonna talk about “health foods” it kind of has a stigma to it, it’s like health foods…oh now we have to manage your eating and you have to have “health foods”. I feel like that is very, would close off a patient. Maybe “smart eating” for diabetes or
some kind of, I dunno I would want to avoid healthy. But I feel like that is the best one because it is for diabetes it is specific for the disease process in as plain terms as it can be. The label is very important, extremely important because that affects how receptive the patient is to it. Because you know, it’s gonna be in their discussion with friends and family, you know “oh this diet that I’m on…healthy eating for diabetes management” it’s kind of awkward in an at home setting.

P: I actually cannot remember what ADA means, I have it written on here like American Diabetes Association?? I feel like I heard it a long time ago in nursing school but I haven’t worked with a diabetic population in a really long time. I wrote on here, if I as a nurse don’t even know what that means…I can’t imagine being like oh here’s information on the ADA diet…for you who is newly diagnosed / fresh based patient. I think that’s a lot to handle. It’s unnecessary. I think the best choice for me was “healthy eating for diabetes management” but I kind of thought getting rid of “healthy” just leave it as “eating for diabetes management” I think management is important getting across to a patient especially if you’re worried about non-compliance because everyone has the choice to eat healthy, like she said, if you are healthy maybe you don’t have that compulsion to change your diet to a healthier diet lifestyle. If you suddenly become diagnosed with diabetes you need to know this is the rest of your life and you need to MANAGE it. It’s a disease that will get ahead of you if you don’t manage your disease. This is not a choice, I mean it is essentially, it shouldn’t be a choice that you’re making, and it’s like something you HAVE to do. You have to manage your disease. So I think it’s important to express that to them, that they’re pretty much the only one in control of where this disease will be going and how they manage it. I hated low carb diet for a diabetes diet because that’s not true at all. That’s not what a diabetic eats. If you’re on a low carb diet and insulin they’re just gonna be, sugars dropping I dunno I just think that’s the worst thing you could say to a diabetic “you need to be on a low carb diet”. Well balanced is too general for everybody. Diabetes diet is okay but I think diabetes management is better.

M: do you guys think overall there is a negative connotation with the term “diet? Especially when talking with somebody with diabetes?

P: Yea. I would say with anyone. Cuz people, there is a population that does diet and exercise but there’s also an equal if not greater population that kind of avoids diet, is kind of happy with how they are for better or for worse who would kind of be turned off by that.

P: I get to go last and hear everybody’s good ideas. (laughing) At first I circled ADA diet because that’s researched and you know, the research is very important in managing disease process and a lot of money and time and a lot of people that go into that. Then I
started to think how you want to tell a patient, that saying ADA does seem a little too much. So I picked healthy eating for diabetes management. But then, as he was saying, if you’re like “oh yea I’m on the healthy eating for diabetes management diet” that’s a big mouthful to tell your wife or husband or kids or something. At which point I thought back to the ADA diet because it is science and researched, you know, there’s mypyramid and all that stuff to help you know how to successfully be healthy and do your dieting…

*M: and which one would you least use?*

P: Least was well balanced because it’s too general and diabetes diet sounds like this is the only thing that you can do, which isn’t really true…

*M: any terms you guys thought about using that weren’t on this list?*

P: No…

*M: okay so as you guys said before, you all get a very basic knowledge of nutrition. So how would you feel as nurses being responsible for having basic knowledge of nutrition for diabetes management?*

P: Are we like adding that to our knowledge base? I don’t understand…

*M: for having a basic knowledge, you’re saying you have basic knowledge, so having basic knowledge of nutrition for diabetes?*

P: Do we have it now or would we want it?

*M: Well either, if you feel you have it now or...*

P: I feel like it would be good to have so you don’t give inaccurate information.

P: I remember when I worked HUP a CNA was there and I took the blood glucose test and the only thing I knew was if it was low what to do and if was high tell the nurse. I just would give them orange juice or something to eat if it was too low. Other than that I don’t think. I don’t really know that much I guess for teaching how to manage it daily.

M: do you think as a nurse you should have basics for diabetes?

P: Yea.

P: It’s a pretty big problem and if that’s the population you’re working with….I feel like on my floor I don’t NEED that information, until one day I have a diabetic patient with a heart problem also who is on my floor and I know nothing about it. So, yea it’s good but I also feel like, I dunno if that’s just the culture of CHOP, but I feel like there’s nothing wrong with saying “I don’t know, let me find someone who knows” or look it up for you,
or get the patient literature about it. But we don’t know much about endocrinology on my floor. Like every time there’s a kid with an endocrine problem, we kind of do have to realize that’s a little bit outside of our practice, at least as cardiac nurses or any nurse really….maybe that’s just a little bit ahead. I think something that people try to stress often because nurses can be such a versatile role is that we need to know the scope of our practice, we need to know where those walls are, where it’s inappropriate almost to take this on yourself without accessing the required resources.

P: But don’t you think that having some basic knowledge would save a lot of time of referrals and you know, if they have a basic question, and you took an extra 3 hours in class to learn it now you don’t have to call somebody down to see the patient.

P: I think, obviously yea, situation by situation. If they’re saying like, should I drink…I don’t even know if someone asked me if they should switch to diet soda because it has less sugar in it, I almost feel like, I….would I learn that in nutrition – I don’t know? If I knew, If I had been taught then yea I’d feel comfortable answering it. Right now…I know a lot of diabetics that I know personally drink diet soda because it has less sugar. Would I suggest that to someone else? I don’t know why exactly so no I wouldn’t feel comfortable because it’s….if I had that information then yes I think it would be great to have that information to pass on.

M: so as a nurse you feel like you should?

P: Especially if this is the population you’ll be working with often then definitely. Simple things, like which soda is better.

M: how about if it’s not the population you’re strictly working with…some of you said diabetes comes up with so many other problems, so in a general sense, do you think it would be good to have basic diabetes nutrition?

P: Yea

P: Yea…

P: Yea…just like you should have a basic understanding about medications for major processes.

P: Because it’s becoming a bigger problem nowadays. Type 2 diabetes is obesity related and becoming more prevalent. So I feel like no matter where you work, I feel like….I just started a program really adult health and pediatrics and women are on the side. But mostly everything is adult health and I feel like most adults now I guess, I dunno, have diabetes? Not all of them…

P: Pre-diabetes (laughing)
P: But most of them may be at risk for it you know. And no matter where you work, in
the ER, it affects so many different body systems that no matter where you are someone
could have a co morbidity of diabetes. Even though that’s not their primary or chief
complaint or where you are on the specific floor in the. They’re saying children are
starting to get type 2 diabetes and it’s just that’s the type is pretty much diet controlled
diet and exercise. I think it’s still important that we should know how to
teach…populations…I dunno…

P: See but I feel like our role right now is already appropriate enough because a 3 hour
extra class on nutrition, I mean that would be fine but I’m wondering how that would
play out because say all of a sudden nurses were officially qualified, like this was part of
our scope of practice now, would that extra 3 hours of nutrition class really…would we
retain that information enough to give them the in depth nutritional information. I’m not
so sure…I feel like now, in my nutrition classes, I feel like the overview is very good and
very appropriate because you can, have enough information that you’re not just standing
there with your mouth open when your patient asks you questions about it, you have
enough information to answer 1 or 2 surface level questions and then you know enough
about it and where to refer them and access the information that your hospital has. And
you can provide them with information, documentation, whatever else. I feel like that is
very appropriate for a nursing role because that’s why we have specialists. Yea it’s
cumbersome to have so many different doctors with different specialties but I feel like
that is a necessary evil to get the quality of information and depth of information that they
need.

M: So then, how would you all describe your current knowledge level of nutrition for
management of diabetes? Very basic or less than basic?

P: Minimal.

P: Minimal.

P: For normal day to day management, very minimal.

M: would you all agree?

P: Nods…

M: Okay so we’re gonna do a little activity. Say that you are working and a meal is going
to be delivered to your patient and this is the meal (shows meal picture of cereal with
milk, fruit and juice). This is 4oz of orange juice. Your patient says to you, “I have
diabetes, can I eat this?” How would you feel about giving nutrition advice to this
patient? And how would you respond, just overall, everything…
P: Newly diagnosed? Or I mean...cuz I feel like honestly, I almost feel like the patient is the best person to ask if they have had 5 years of managing their disease...well could you eat a bowl of cereal with fruit at home? I dunno, no I would be like “I think that’s okay but if you don’t know then I certainly don’t know?”

P: What kind of milk, is it skim milk or whole fat or 2%?

P: It still has the lactose in it so it’s still gonna have sugar in it.

P: Let’s do a D stick

P: Is it frosted flakes?

M: No it’s not frosted flakes.

P: Don’t we usually get an insulin check with meals?

P: Yea…

P: Depending on the grams of...carbs?

P: A lot of talking...can’t quite here

P: I have bias so I have experience because of my father. Because it is like a bran flake cereal so that has very minimal sugar, very minimal carbohydrate. I mean, the fruit and the orange juice is like oh 4oz orange juice, it’s got like, I mean the meal has sugar in it but they’re allowed to eat sugar. It’s not like..

P: Especially if they’re taking insulin.

Right, yea.

M: do you think anything about the portion should be changed or should some stuff be taken out?

P: I mean they’re gonna want more orange juice because 4oz isn’t very much.

-Laughing-

As far as if that’s all they ate and they didn’t’ want anymore, then I think that would be appropriate.

M: And if you weren’t 100% confident in your knowledge, you would....

P: I think I’d be leaning so heavily on what I’ve been taught, well what’s your sugar right now? If your sugar is 300 I’m gonna be like we need to take a shot of insulin and assess
this in a little bit. Usually, I’ve been taught only through hospital experience, not classes, that you should usually eat with insulin so that you don’t crash. So I’d be like, your sugar is really high, let’s take however much insulin is appropriate (there’s a sliding scale, that’s a nursing scale we use – it’s ordered) how many units for how high their blood sugar is. In an hour we’ll look at your blood sugar again and we’ll treat it if it’s too low. So much of it is see-sawing back and forth trying to stay in the middle as much as you can. But if their sugar was 50 I would be like, maybe we need to eat a little more than this. Maybe you need to put some sugar on the cereal. I would say “yea eat that – that’s fine” but how you eat it and how you handle it is so based on that number that we’re taught to recognize. But the nutrition aspect of like, is this okay? That, is fruit and cereal and milk and orange juice okay? I think so…I haven’t been taught anything either way – yes or no.

P: Is that hospital food? Cuz I have yet to see a patient get fresh fruit and milk and …in a cereal bowl. What they usually get is just oatmeal and eggs.

P: Especially in the hospital they usually have diet orders in. they have that whole room service thing at CHOP and you actually pick out of the menu what you want. If you’re on an all clear liquid diet and you try to get something like not on your diet, the people down there will be like you can’t get that, you have an order in saying, blah blah blah. So if this was in the hospital situation I don’t know if I would question it because I would see that the order is in and I would make sure. But I would of course still answer them and I dunno…

P: They also put a paper on the tray for the diet order.

M: how would you feel if your patient received this meal? (holds picture of dinner meal) and asked you the same question? This is 8oz of milk let’s just say 1% milk.

P: Is that chicken?

P: Yea what is it?

_M: I’m sorry this is chicken, grilled chicken, mashed potatoes and vegetables, milk and 2 cookies, 2 small cookies. So how would you feel...would you feel confident answering a patient of yours with diabetes if they said, I have diabetes can I eat this? And how would you respond?

P: I don’t know….

P: I’d feel more comfortable with the breakfast. That looks more complex.

P: Carb loading.
P: It is a lot yea…

P: I’ve had friends with diabetes and I just know that, like my understanding from them is like, 1 bread, 1 slice of bread is like a gram and all depending on your disease and if you even are getting insulin. Type 2 diabetics aren’t even getting insulin so like you can’t even have that quick fix, like oh you can eat it and if it’s too high we’ll just shoot you up with insulin. It was so specific for her, she would take 1 unit of insulin for every gram of carbohydrate she would take. And like, can I look at that and say how many grams of carbohydrates are in there, so how many units do you get?

P: I can’t say, okay this is how many sugars are in it, you know. I can’t…

M: So if a patient said to you can I eat this, I’m diabetic? What would you say, how would you respond?

P: Let me check.

P: Laughing.

P: I’d be like eat it and then we’ll test your blood sugar.

P: Use the sliding scale so yea, if your blood sugar is this high then you get this many units. That’s…so eat whatever you want cuz we’re just gonna manage it ourselves anyway.

P: Laughing in agreement

P: I feel like as nurses you recognize, you’re taught to recognize the signs and symptoms more and you’ll know how to react if you start seeing someone getting all, whatever, with it

P: Hyperglycemic

P: Yea…

P: Does their breath smell like fruit? Hyperglycemic.

P: Haha laughing yea…

M: So overall which more would be the better meal to give a diabetic?

P: Without knowing their blood sugar?

P: Is your dad allowed to eat that?

P: I think the breakfast is a harder call because of all the sugar and the fruit.
P: I feel like the chicken offsets everything else. Isn’t there this thing…

P: But you don’t know what kind of chicken how is it prepared, does it have salt?

P: Yea, that’s a lot…but isn’t there a thing that if certain foods mix together, then like, it doesn’t…

P: Slows it down or something?

P: Right? Yea I feel like I’ve heard that you should always eat protein with carbs, something like that I don’t remember.

P: Looks like a moderately healthy dinner to me. Steamed vegetables, grilled chicken and mashed potatoes and cookies.

P: Right, mashed potatoes and cookies are the only carbohydrate source on that tray. So that’s gonna be, you know, eyeballing it that’s gonna be a safer meal to give than the fruit and the orange juice.

M: so overall, aside from your personal experience as nursing experience, how do you feel about nurses, as being part of their job description to be responsible to give nutrition advice to patients with diabetes?

P: With the education level that we’re getting? As far as the knowledge that we’re getting bout it? Not comfortable at all. Without further education.

P: I feel like it would give nurses something to complain about it because they’re very, they have, they need a lot of time to do their paperwork and then just…like, I just hear more of them saying “why do I have to do this if there’s a nutrition downstairs” or I can always call someone else. You’re part of a hospital, there is teamwork there, there are other people to go to. There is so much you have to do as a nurse already. You need to know that much detail might need a little too much.

P: Let’s put it this way, I wouldn’t ask a nutritionist to insert an IV. Like, a big part of our role is health promotion. We LOVE to promote health in our patients; we like to tell them what’s good and how to stay healthy. Once they get sick, like once they get diabetes, it tends to be more crisis management. So, our role kind of doesn’t really go there. It just kind of. I dunno we have specific duties. Nutritionists in my hospital doesn’t play the same health promotion role that the nurse does.

M: so overall, even though we’ve been saying diabetes is becoming much more prevalent, would you still not feel nurses should be responsible? Not responsible, but right, to give nutrition advice...That would just be part of it. Somebody says, your boss says so many people have diabetes it’s now your job to give advice to people who have it. How would
you ...would you complain? Would you be okay that’s fine? Part of it would be let’s say you get more education on it.

P: If you’re gonna teach me how to do it that’d be great. I’d love to do that for my patient. I’d love to be able to tell them how to manage their diseases if I was given the tools to do that.

P: We teach a lot of what to do when you get home, like, I’m on the maternity rotation and we do the whole post partum, this is all the thing you’re going to experience. I think it’s really important because we are so close with our patients…the nutritionists have 100 patients, we have 10. So yea I think it’s very important if we’re trained in it to give the proper advice. Here are the highlighted bold points for you to take home to make sure you at least follow these things to try to manage it.

P: If that’s the trend in healthcare, if that’s true, then obviously there is a greater need for us to be educated in that so yea we should known it, but …

M: how do you think your patients, or patient care, would be affected if you did have this further knowledge and would able to do this as part of your job responsibility?

P: I think some would be really receptive and appreciative. Then there’ll be others, like ones I’ve had, that have family members bring them meals. So you can have a perfectly balanced diet that was appropriate to that particular person but because they feel that the eggs are too hard, they’re not gonna eat it and they have a sandwich instead. So that just turns whatever health promotion or maintenance that you have for their nutrition….each person is gonna not want to comply and the nurse is gonna be the one that will adhere to whatever advice you’re gonna give them.

P: Kind of what I was trying to touch on earlier. The management piece. Like yea, we can order every meal for you, that’s okay, this is not, every meal can be perfectly measured, we’ll give you this many units. The day you get discharged, ultimately you are responsible when you go home unless you’re getting nursing care when you go home, which for basic diabetes management you’re not. This person needs to be taught a lot of stuff. Do you feel like your dad had been taught everything he needed to know when he got taught? Who sat down with him and told him all this stuff?

P: I just…with diabetes in particular, its compliance. It has to be our chief concern. It’s very frustrating because you can’t…from a professional standpoint, you can’t teach them how to like, do some things and fudge the rest. You know? You have to teach them this is the healthy way to do it. And then they come home and they say that doctor’s a quack there’s no way in hell I’m doing that and they just ignore the doctor. So it’s a very delicate balance to kind of strike. Because the effects of diabetes are extremely long term,
and that’s part of any disease where you don’t see immediately, immediate symptoms of the disease, you’re gonna have compliance issues you know. When you’re trying to control their diet that’s like multiplied like ten-fold.

*M: but overall do you think patient care would improve if you all had this basic...

P: Yea.

P: Yea.

P: Yea- I do but I think it’s really important that the supplemental education is the way to go. Because incorporating that in nursing school is very inappropriate because it’s not gonna be enough information and then we’re gonna get to the field and they’re gonna assume that we have information and knowledge that we don’t. Because reinforcement is really important and being able to tell them and give them tips and tricks on how to manage it from day to day living I think that would be really beneficial.

*M: how do you all feel, how nurses would change or how this would affect nurses if given this additional responsibility? Your jobs?

P: Would we be the primary person that they’re coming to for advice or would it just be the supplement to the knowledge base that we had?

*M: imagine if they were asking both scenarios, just you or say they were asking everybody – the doctor the nutritionist...but how do you feel your role as a nurse would switch?

P: One more duty, you have to fit in....oh I have 3 discharge diabetes patients today it’s gonna be an extra hour and a half of my day just for the discharge.

M: do you think that would take away?

P: It would have to factor in the whole structure of the hospital of how many people you can have. I’m sure the hospital would have to provide more literature and take home folders or pictures and shirts and stuff. Visually to teach stuff like that.

P: We all do discharge teaching for every patient based on what they need…it’s pretty tailored to their problems so I would imagine if I were on an endocrine floor and we had a lot of kids going home with diabetes that would definitely be something the nurses are well versed as far as discharge teaching. I would imagine that’s roles they’re playing already at CHOP and probably anywhere. If they have a patient going home that’s newly diagnosed with diabetes, that’s a huge part of …not just the day to day leave but every time that they’re teaching a little bit.
P: The nutritionist does it…on the endocrine floor the nutritionist does the teaching not the nurse.

P: Isn’t there also a diabetes educator? Someone who comes in hospitals?

P: No answer….

M: but even if there was that, how would you feel if it was still part of your job?

P: I think, to me, nurses we do really holistic care. We’re not just specific to one thing. To sit there with a patient and teach them everything about diabetes, that’s not achievable. So I think that why we have all these other people in the hospital to give that 1 on 1 because we can’t personally do that.

P: We’ll give some time…

P: Ideally it would be nice if I would be able to take the time and do all the education for the patient, but I don’t realistically I don’t think that’s possible. I also forget that, I work at the outpatient unit and the amount of time you can talk with a patient in outpatient is like…you can have 3 hours with that one patient its fine. In, when I worked in the hospital, there is just too much going on that I don’t think that I could just sit there for 3 hours cuz you’ll have patients that can talk for hours and patients that don’t really care to learn about whatever is wrong with them.

M: what if you were to say, I’m really just there to talk to you about nutrition and other diabetes questions came up? Okay, so after this discussion, what ways do you think your nutrition education could be improved in your nursing program?

P: They could add it to each class more.

P: Yea.

P: You know, like they teach the diseases and what to looks for, just add nutrition into the whole bundle of classes..

P: See, they do add how much, what you need for hyperthyroidism, soybeans for thyroid, they do break that down and they match it to the disease…it’s just so much. It’s like they breeze right through it. I feel like they should do more in-depth. But they do in adult 1 and 2 and 3.

P: But only in adult.

P: Not just in adult, I think they always emphasize diabetes in every nursing course that we did.
P: It affects everything.

P: The nutrition piece, I think that’s missing. It’s just quick, you know...not specifically.

P: It’s just hard because there is so much, in nutrition; nutrition is complex and has an entire field all to itself. To incorporate that to a nurses scope of practice, overall a little unpractical.

P: I mean every disease is like that. Everything that we’re learning is a field of its own, but as nurses...in nursing school we're responsible for knowing a little bit about everything so you can kind of know what to deal with in your patients. And I think nutrition should be just as important.

M: what about improving nutrition for diabetes? Do you think that should improved or that it’s sufficient in your program?

P: I know a lot about diabetes, but I don’t know much about once you are a diabetic, what to eat.

P: So, yea I think there’s a lot that could be added. A LOT

P: I wouldn’t really feel comfortable if that was my role but I would love to be more knowledgeable so that I could….even if it’s just for 10 minutes to talk to someone about “tips and advice”. Simple, simple stuff. Nothing out of our scope of practice. Like health promotion and stuff we do already. I would love to promote health in diabetic patients. I don’t think I have the tools for it right now.

M: so if you guys would just turn your paper over we’ll just do one last thing here tonight. If you could each right down three words to describe how you feel about the role of nurses in promoting nutritional management of diabetes and then we’ll go around and talk about them quickly.

M: a word or phrase

P: Health promotion is our job. So I think that it’s important for it to be part of what we do. And I think that it should be follow-up. I don’t think that we’re able to give the initial information but I think that we should be following up.

P: I wrote on here, I feel like it would be appropriate for us to give a superficial, surface overview of basic interventions that you could do on your own. Like nursing interventions are a big thing, things that you can do without a medical order. What can teach and do for our patient. So in that way, that very umbrella surface way I think we could do a lot. I did write that I’m afraid that it would feel really rushed or abridged, that we wouldn’t have the time to do the teaching. I feel like there’s other roles we have
already – we don’t even have enough time to do the teaching. We make time, but I think there’s so many things that could be so much better. But even if you only had one patient a day, I almost feel like there’s so many facets to every patient that it’s hard to do everything that you want to do. So, I feel like, well the intentions are all there, the knowledge might even be there, the time might just not be. Then I said that it would require more education. I think it would be a great thing…like no job expects you to get your diploma from nursing and walk on the floor and know everything that you need to teach. So if a floor was asking me to be responsible for diabetes education, I would hold them responsible for educating me about diabetes education.

P: Currently, our current level, what we’re taught is very inadequate for diabetes teaching. I think an in-depth analysis would be outside of our scope of practice. It’s just, yea I’m down with nursing giving nutritional advice but I feel like diabetes specific, that’s kind of getting a little too specified for nursing care. The last one, I think if we were to receive additional education to be responsible for some of it I think it should be very minimal, very surfaced oriented. I think nurses should know stuff that diabetics should try to avoid pizza in large amounts, pizza specifically because of the ingredients, the sugar and the carbs and the crust makes diabetics go haywire, cuz if you eat pizza you get slammed with the sugar that’s in the crust and the sauce and then you get a second kick from the carbohydrate afterwards and that’s always really challenging for diabetics. So I think you should know small quirks like that so that if a patient says, oh what can I eat, like today, what can my child eat cuz they have diabetes? You know, so you can tell them little stuff like that, but then refer them….you know now our nutritionist can give you a full rundown.

P: First thing I thought about it was that it was overwhelming, necessary and good thing we’re not in a union. Teamwork is really important in the hospital setting because you rely…its interdisciplinary, or whatever. But that’s what, if we need to have more education then we need to have more education if that’s the trend in healthcare. So if that’s what we need to know, then that’s what we need to know. Of course it’s going to be overwhelming because you feel like you have so much to do but again you’ll do what you need to do.

P: If we’re going to be giving patient education then we should be responsible for the information that we’re giving so if you don’t know then you should really do the referrals specifically for that patient, because I don’t think it’s right or fair for that patient as well. And then, so I think if we are going to be giving the information about diabetes specifically then we should also acquire that knowledge.

P: Helpful, important and useful in some situations because nurses are what the patient sees the most and nursing is the most, #1 trusted professional. We really build that
relationship with our patients and I feel like, hearing like education or teaching from someone who you have that connection with, you know, a family member or someone, that really means something rather than just having, oh you know what I can’t answer that – I’ll have the dietitian come in. Having a brand new face come in and start teaching you stuff. I know for me, if I have teaching from someone who I know and trust I really take it to heart and really remember it. And nurses are there every day at their bedside kind of reinforcing the teaching and they know where the patient is in their teaching. So I feel like it would be helpful and useful in some situation. If I feel like to have a course in nursing school, we would kind of forget it once we were out in the real world. I feel like there should be like appropriate teaching opportunities and education opportunities, according to the specific floor and patient population you’re working with.

P: I think you’re gonna meet resistance from the nurses because it’s extra work for them. But also, I think you’re holistically giving the patient additional information and you’re looking at it from every aspect just not from whatever medical condition they have but just they’re gonna take that information and go for the rest their lives because it’s a lifelong process. But I also think that the information is needed. I also see it as only one side. You do have other co morbidities and keep re-emphasizing that because it’s not just the diabetes that you have. And one of the things that you have with our group is that they’re giving a “XP experience”. They have specifically geared…one of the topics is diabetes and they tape it and have a plain actor coming in and that person has diabetes. So we have to sit down and teach them. So we are experiencing that and actually I go next week on Thursday so it’ll be exciting. So that’s one of the things we’re gonna have to demonstrate the ability to sit down with someone and tell them about their diabetes and teaching in general.

M: Well thank you guys for coming and giving your time. If you have any questions, I have no medical background so if you have any questions Trish might be able to help you more to what this was about tonight. Thank you again for your time.

R: Are there any questions that we should have asked that we didn’t? Any other topics related to this issue that you wanted to talk about but we didn’t bring up?

P: I guess just like exactly the boundaries of our role, because I think a lot of the concerns I was hearing was like, well would we be the only one, would we have extra teaching, would it be in our scope of practice? I just think it would help us answer more confidently if we knew almost exactly what we were answering. Like whatever idea you guys have, as the information provider, it would be good if we knew where that began and ended.

R: Well I guess part of the reason we’re doing that is to find out what that is. Because well this study is for my thesis project for my master’s in nutrition at Drexel and I’m
really interested in diabetes and it’s so prevalent and there are so many resources and education programs but people still...2 or 3 people are still not controlling their diabetes, so we’re trying to look at this one piece and see if nurses should be more involved, less involved and what is the role. This is part 1 we’ll be doing part 2 in a couple months, sending out a survey that all nursing students can answer so be looking for that, you’ll get an email and it’ll just be a link you can click on.

R: So I’m gonna pass out these receipts, you just have to sign it...don’t have to print name because we’re not collecting your names but sign the receipt and then I can give you your reimbursement.

What do we do with this?

R: Just sign...there’s a signature line, yea. All I need is your signature, just that, you got it. You can keep the yellow copy or you don’t have to.

Thanks everyone!
APPENDIX K: FOCUS GROUP 3 TRANSCRIPT

Moderator designated by “M”
Participant designated by “P”
Observing Researcher designated by “R”

M: So we’re recording it but everything will be kept confidential so don’t be worried about the recording. If you guys could all just make sure your cell phones are on quiet before we start. First, I’ll have everybody go around the room, tell us your name and what you enjoy most about nursing. Oh and if you have any previous degrees or work experience mention that also.

P: My previous degree was in women’s studies. I worked at Planned Parenthood as a sexual health reproductive educator and so my background is in reproductive health knowledge and so I have a little bit of a slant on nutrition in that aspect. I know that we, in the clinic, would prescribe prenatal vitamins and folic acid to women with the HPV virus because it would fight viral load and decrease the effects of the HPV virus in the population. We also looked a lot at iron levels with anemic patients so you know, eat your leafy greens, so I would give nutrition advice often, use an iron skillet, get your iron. That’s my background, that’s my nutritional education background.

M: And what do you enjoy most about nursing?

P: Patient interaction is wild. So when you’re alone in a room with another person and when they’re honest with you even when they’re not honest with you. It’s nice to have that one on one.

P: My degree before was design and I was a merchandiser for IKEA. What I like about nursing so far is that there’s constantly seems to be stuff to do and I like to multitask.

M: So are you both in the ACE program?

P: Yea.

P: Yea.

P: My previous degree is in chemistry. I just graduated in 09 so I don’t have much experience working. The thing I like most about nursing is the direct patient contact.

P: I have a culinary degree. Before I did this I had my own catering company, so I like to take things to a different level because I’ve never done this before and I’m thinking in a
new way that I’ve never thought before – in a different language. I love people, anything about them, I just love people so I just thought taking it to the next level I’d be able to you know, serve whomever, ultimately and being a nurse.

P: I have a degree in dietetics and I worked for a year at HUP in the OR there. What I like about nursing is the endless options there are. It seems like it will never be boring.

P: My favorite thing about nursing is…. (can’t hear) I wanna work in critical care. I like that it’s always changing, something’s always moving. There is always different evidence based practice for the reasons that you do things and I like the ever expanding knowledge that it has to offer.

M: How long did you work in public relations for?

P: Just a year.

M: Okay, just wasn’t doing anything for you?

P: No.

P: I’m in Drexel’s 5 year co-op program and I graduate this May.

P: Yay! (Clapping)

P: Yea, it’s so cool. I did 3 co-ops. My first at dialysis, my favorite. The second was in CHOP’s ER, pretty cool. The 3rd one was at Jefferson’s short procedure unit, surgical suite so it was fun. I think the thing I like most about nursing is the patient in their most vulnerable period. I really for some reason, am drawn to the ones that are completely a wreck and are ready to break down and that’s why I went into nursing because I really just wanted to reach out to those and make them feel a lot more comfortable in the hospital setting. That’s pretty much why I just really like that patient interaction. Especially with the ones who need it the most.

M: do you think you’ll seek out to work in dialysis?

P: I love dialysis because the patients were the most vulnerable. Especially the ones who just started their treatments and they weren’t used to it. I don’t think I’ll go into dialysis though. I really like, I loved my maternity rotation and think I’m gonna try to get into that.

P: my previous degree is in political science/international studies. Afterwards, I taught pre-school for awhile and then I decided to go back to school for nursing and my favorite thing about nursing is kind of what she said…It’s amazing to see people in their most
vulnerable states and then see them recover or overcome something. I feel like it’s a very meaningful profession.

M: how long did you work before this?

P: 2 years.

P: I’m in the co-op 5 year program and this is my 4th year so I did my 1st 2 co-ops at HUP which were amazing and I really liked it there. My favorite thing about nursing would probably be just taking care of the patient, just seeing how much they appreciate you and the rewarding feeling that you get after you finish work every day. That’s what I love most about nursing.

P: I’m in the 5 year co-op on my 4th year. I graduate next May 2011. My favorite part about nursing is the fact that you feel good about yourself at the end of the day, that you know you helped somebody. It’s a job that’s ever changing, you can always switch positions. Can go to one area, can go to another. I’m working at Jefferson’s ER now and I love it. It’s a great job.

M: Okay great. I’m first going to ask everyone to just think about your current nursing program. If you could just let us know in what ways you have learned about nutrition, if at all, in your program.

P: Well I’m in the ACE program in my 4th quarter, so we covered nutrition and health promotion in the first quarter and then I have the experience – I worked at 11th street for my community health – and we did basically took blood pressures and talked to the community and it’s amazing how much people ask you questions about what should I be eating and you’re trying to explain to them about HTN and what you can change about your diet. I got a lot of experience talking to patients specifically about – like – meds and they keep going on and on. So it was really interesting to see how quickly, especially 11th street is right near Temple in North Philadelphia, it’s a big issue with eating up there and the diet that people have in that community. So, it was interesting to see how much they wanted to know.

M: did you feel prepared to answer them?

P: Um, I did…we went over a lot of stuff. It was kind of, I guess I knew beforehand. We collaborated. I had another girl, 2 other girls, who had majors in nutrition and dietetics so we talked about it before we went out and then they kind of added to our repertoire.

M: anyone else?

P: I’m in the ACE program too, and as far as within the classes, nutrition was a prerequisite to do the ACE program. I think they do a good job with not specifically focused
on nutrition, but as it comes up in every single class as it comes up they do a good job about teaching you about patient education like for food drug interactions, diseases and the type of diet. Incorporate it into every class as it comes up.

P: I think nutrition is, I mean in the 5 years I’ve been here, it’s been incorporated in everything, every disease process. It’s amazing how you know, if you have gout you need a low purine diet, if you have ulcerative colitis you need a high residue diet. So I think it’s very interesting how one person’s diet can be completely different than another person’s diet and you need to stay on track and realize what they can and can’t eat. My diet might be completely different than everybody’s diet here. So I think that’s interesting and also compliance. You see a lot of people, especially with dialysis, they’re just hardly…there’s really no compliance with their diets at all. So you need to always stay on top of that. So I think with nursing it is very important to make sure that people are staying compliant with their diets. And Drexel does an amazing job of that, like every disease process that we’ve gone through they always stress what they can and can’t eat and they test it a lot. Like every test we have…

P: It’s tested a lot and they also emphasize that the doctor will come in and say “you can’t eat this” and then that’s it.

P: Yea that’s it.

P: Then the nurse has to go in and find out why they’re not being compliant. Some underlying reasons – they don’t have enough money, they don’t understand.

P: Or it’s not explained. Like the doctor might come in and say you can’t have…you have to be on a low sodium diet so you can’t have anything with a lot of salt in it. And the patient not really know what foods have a lot of salt in them. Or you can’t have a lot of potassium because you’re on a renal diet and the patient has no idea that raisins have potassium, or avocados. So I feel like we really…

P: I know that around my way, I was a volunteer for WIC.

M: What’s WIC? It’s an assistance program

Women, Infants and Children.

P: Yea, and um, a lot of the younger women, they just don’t know. They’ll go off of things that their girlfriends tell them and when you get them in the office and counsel them and explain certain things to them then they’re just amazed but the rewarding part is when you see them taking the information that you’ve given them, to either bring somebody else into it or just to help themselves along.

M: so you feel like you’ve learned enough nutrition to advice somebody?
P: Absolutely.

P: Yea.

P: I was in ACE, I switched to co-op. We had to have nutrition before (the ACE program) and we have to have it now, so it’s like I get a double/triple/quadruple dose of it. So that was great because it just reinforces that much more.

M: *So in your opinions as nurses, which professionals in the healthcare field will/should have the role/ or have the role of giving nutrition advice to patients with diabetes.*

P: Nurses.

M: *how come?*

P: Well I just did diabetic teaching the other day. I mean, the patients, it’s interesting because we actually had a patient the other day where the family came in. We had no idea why this patient’s blood sugar was completely through the roof and we found out that a family member was bringing like Twinkies and all kinds of stuff and they actually sat down and did teaching with the family member and the patient and they had no idea. This patient was diabetic for a while, so us being usually the first ones that notice these things and are taking the blood sugars and interacting with the patients the most, we catch these things first. I think we’re kind of the first line of defense sort of. So, even to make a referral to a dietitian, we should be the first ones that notice these things, teach initially and then we can ask for a referral to have the dietitian come in and give a little bit more expensively teach the patient.

P: I don’t think anybody’s off the hook.

P: It’s true..definitely true.

M: *Does anyone disagree and think the nurse shouldn’t be the primary professional?*

I don’t necessarily disagree…I mean what she was saying the nurse is the first line, that the nurse is with them 12 hours a day so obviously the nurse is going to be able to reinforce the teaching the most and the nurse is going to notice all the/what the patient is eating. But, I might be a little biased because it’s my degree but I think the dietitian might get the initial diagnosis of diabetes. Right and they can do a very extensive. They probably have more time to sit there and do an extensive teaching with the patient than the nurse who is running around. They may have more time to sit there and I just think that the Dietitian spent you know, 5 years specifically on nutrition so I think they can really do a good job of reinforcing every little detail that maybe the nurse might miss in rushing around from patient from patient.
P: I completely agree with that. It’s just that sometimes you don’t have the luxury of having a dietitian.

Right.

P: One of the rotations I was doing, they had a special nurse that had special training for diabetes and diets for diabetics. So I think that would be the best solution.

P: I think it should always be asked by every nurse that sees the patient. You know, are you following your diet? Cuz I had a patient in the ER last week, she was there with a sugar over 600, she’s thirsty and she didn’t even know what that meant that she was thirsty. Her sugar is over 600 and she’s sitting there drinking extra large hot chocolate with extra sugar and she doesn’t know she isn’t supposed to be doing that. She’s like well I take my insulin and I take my pills. I’m like well that’s not gonna fix your problem…I think it needs to be reinforced and reinforced because people aren’t gonna be compliant. It just needs to be reinforced by the nurses.

P: I’m working on a cardiac floor right now and I’m still sort of new to how different specialists coordinate their care with one another, but from how I was seeing it working on the floor was the nutritionist went around and was doing rounds and seeing each patient and so when the nurse has her 5 patients, his/her 5 patients, they’re set up for an acute moment. So they can potentially notice when something is going wrong with their patient and deal with that situation. So it seems like the nurse is there for an acute moment and to reinforce teaching but as the dietitians in the class were pointing out, there’s a dietitian or nutritionist that has extensive training and can do sit down extensive teaching whereas the nurses role is more of a “what do we need to do right now in this moment”.

M: So, based on the education you’ve had this far and what you’ll have when you’re done and working. How would you feel if a patient with diabetes asked you for nutrition advice? What confidence level? Would you have the confidence to fully answer it on your own?

P: Yes.

P: Yea…

P: I’m halfway there. I still have a lot to learn so you know…sometimes we lead by example, so myself I’m getting there. I have a diabetic mother and a diabetic father so it’s a lot of learning that I gained from seeing them. I still feel like I have a lot to learn so I’m halfway there I think.
P: One of our check outs for seniors is we have to teach. We have the SP experience. We do 45 minute thing of actually doing a teaching experience, a physical assessment or an ethical kind of thing and a history. I got a teaching and a physical that I had to do. I had to sit there for 45 minutes to teach this guy about everything I knew about diabetes, any questions he had. It was really nerve racking because he kept drilling me about foods he could eat, foot care and vision and everything. The whole 9 yards. They actually train us to do that and I thought it was really cool. So, one of the things you have to do through Drexel in order to graduate is teaching about whatever disease process, there’s a list of 30 we have to do. I have no one in my family with diabetes and that was my weakest point so I was nervous.

M: So are there any nutrition topics that you are more comfortable talking to patients about than others? Or least comfortable?

P: I think there are specific, very specific disease processes like pancreatitis is a very bland, high fiber, boring diet. There’s certain very specific disease processes that I would probably look at a reference before doing anything. Just to be sure I’m saying the right thing. I understand what it is, what a bland, high fiber diet is, I can tell them high fiber foods. Like diabetes I know. I know HTN. I know the big kind of stuff that controls. But I think there are certain very specific disease processes that I would just feel better about myself just checking before I did it.

M: anyone else?

P: Especially if the position had not specified directly, I want some like, under 2 grams sodium, I would kind of get more of a reference …

P: This is what we’re uncomfortable teaching?

M: either, nutrition topics you would feel the most comfortable answering or the least comfortable where you would refer them to somebody else?

P: Potassium. The reason I say potassium is, we’ve all learned about it a lot but, the body’s ineffectiveness of keeping it in storage, just the fact that it has to do with the heart. It’s incredible. It can become critical so the more sickly your patient may be they may have much more complications. I was looking at it as I was learning it that potassium is one of the most important aspects and I would definitely need collaboration.

M: Next I’m gonna pass around this piece of paper, take one and pass it. So you’ll see a list of terms on the paper so when describing a diet for a patient with diabetes, if you could circle the term that you would most likely use and an “x” next to the term you would least likely use and make notes as to why you would and wouldn’t use those terms.
Then if there are any terms on the list that you would use but aren’t listed there, if you wanna jot them down. Then we’ll review in a minute.

P: Okay I circled “diabetes diet” because one of my patients called it a “diabetic diet” and I feel like they would remember it more – “oh I’m on a diabetic diet I can’t have any sugar”. Versus I “x”ed out ADA diet because I wasn’t really sure what that meant. What’s ADA – dental association or something else? I feel like a patient wouldn’t remember the things that are associated with a diabetic diet.

M: any other terms you thought about using?

P: Low sugar…maybe

P: I picked healthy eating for diabetes management only I dunno if it’s too long but I think it’s very positive. It’s not restrictive in any way. Not like “low carb” diet or anything and it’s not – I feel like the word “management” makes it feel like the patient has their diet under control. It sounds like a good thing. I also crossed out ADA diet just because I don’t think people would understand.

P: I picked “diabetes diet” just because it’s the most specific to the disease, they’ll remember it. I crossed out ADA diet because of the abbreviation. But the other ones seemed…everything talks about “healthy” and “well being”. I know with me, if you talk about healthy eating, you can say to yourself oh okay well I’ll eat healthy now but I can still slip a few cheeseburgers in. So, it almost looks like the rules can be broken a little bit so I stuck with diabetes diet.

P: I chose “diabetes diet” as well. I chose it because it’s concise and simple and it references the disease directly. It’s not forgetful. It’s easy and it’s short. I crossed out, well I crossed out a lot but I crossed out “well balanced” diet because it’s completely subjective to every person. A well balanced diet to me, is probably different to everybody else so I don’t think that would be good. Diabetes diet would be pretty specific.

P: I also crossed out ADA diet because I felt that a patient would not know what that was or what that meant. I chose the healthy eating for diabetes management also because I like the word management. Because I felt like it was a word that the patient would feel like they had control over their disease and it’s a good term to emphasize that diabetes is something you’re going to have to manage and the diet is a really great way to keep your disease…

P: I “x”ed out low carbohydrate diet because you really don’t want to give diabetics a low carbohydrate diet, especially for type 1’s. I chose well balanced diet because the connotation is positive, and gives them maybe a boost, like you can now control your ADL’s.
M: How come you wouldn’t choose any of the ones with “diabetes diet” or “healthy eating for diabetes management”?

P: It’s just, to me, diabetes is a “bad” word to me and instead of allowing them to keep on knowing that they have diabetes, reinforce it in a positive direction and get them away from this is what you can’t have. Let’s make a fresh start, let’s get your quality of life better let’s do well balanced.

P: I chose “well balanced diet” also because it’s positive just because agreeing with her, it’s more positive as opposed to the other ones. The one that I wouldn’t choose is ADA because I wasn’t sure what that meant. I don’t think that patients would be able to identify that so I didn’t choose that one.

P: I chose the ADA diet. I just thought that it would be a good resource for the patient to just look at the website and there would probably be a whole list, just so they could do it on their own. Also it is an association so maybe they’ll be more willing, it’s a little more support. Then I didn’t choose “diabetes diet” because I wouldn’t like to think of myself having to be on a “diabetic diet” It just has a negative connotation.

P: I chose healthy eating for diabetes management. I know it’s a mouthful but I liked it because it’s sort of like the action that we’ll be incurring and I know when we’re charting we’re trying to get away from and towards the most descriptive action that is going to be taken, descriptive intervention. So I think that when you spell it out that clearly it’ll be easy for the next person to read it who reads the chart, to understand what you taught so healthy eating for diabetes management. And then I crossed out ADA diet for the same reason basically, if someone was reading that in a chart, they might not understand it right away and may not look up what it means and so they’re more likely to be more non compliant with the teaching or the diet itself.

P: I crossed out ADA diet just because I don’t think that patients would know what ADA means. I was between “diabetes diet” and “healthy eating for diabetes”. I like the sound of healthy eating because it’s a more positive aspect to their disease and makes them think that they have options but from experience I know they are very specific with most patients and diabetes diet would probably be the best for most patients. Because I feel like a lot of patients are very lenient with their diet and I think if you tell them you have this disease and this is the guidelines, you kind of have to be within those guidelines, I think that they would be more compliant.

M: So nursing is a very broad spectrum and a lot of areas of nursing you can go into, how do you feel about nurses, regardless of what field you’re in, being responsible for having a basic knowledge of nutrition for diabetes management? It would be a requirement.
P: Can you repeat?

*M: How would you feel if it’s part of your job responsibility that you would have to have a basic knowledge of diabetes management.*

P: I think it’s inevitable right?

P: Yea (lots of agreement)

P: What was the percentage we just heard? 2024 it’s going to be like 75% of the population has diabetes.

P: 2010 it increased by 60% or something.

P: It’s gonna be like ¾ of the population will have diabetes type 2. So I think it’s inevitable, this is a disease we’re going to see coming through the door every day.

P: I think you should be required to do the teaching because it’s part of a nurses job but they should also have support because you don’t have time to do a lot of things you’re back is always up against the wall. So I think you should have support especially for something like an initial diabetes diagnosis. The extensive teaching the first time because they should be able to go eventually and be able to take care of themselves and they should have a really good understanding when they leave. I can just see right now, that’s an hour + conversation in a patients room and when I have 6 other patients, I would have to break it up into 20 minute intervals so then the patient gets distracted so I think support is key, but it’s definitely should be part of your repertoire.

*M: that being said, does everyone agree?*

P: Depending on where you are. I might have 1 or 2 patients.

Like in home care. Yea.

P: I might have time to go to everyone individually so I may be able to go through a whole booklet, as opposed to being rushed.

P: I think the dietitian should sit down and actually make a plan with the patient on what foods they can eat. There’s awesome cookbooks out there…There’s really good cookbooks that can be referred to the patient. I just think that the initial teaching should be the nurse because we’re more therapeutic with our conversations. Are dietitians trained in therapeutic communication?

P: Yes.

P: Oh okay, well I know doctors aren’t.
P: Hahaha (lots of laughing)

P: So I think it would be better for us to do it before the doctor comes in and then nutrition comes in and can actually sit with the patient and make that hour long plan or whatever.

P: I think it’s subjective for the location and where the patient is and what’s going on. Maybe the nurse can cover the portions like insulin and/or medication and stuff like that and then the dietitian can pick up, depending on for the patient.

M: but everyone seems to agree that a basic knowledge is needed?

P: Yes.

P: Yea. Absolutely (lots of agreement).

M: So based on your education, how would you describe your current knowledge level nutrition management of diabetes?

P: I think I know a good amount, I mean I see it in the ER and every day. You have the patients who give themselves too much insulin and the patients who don’t eat the right things. I think the nutrition classes through Drexel and actually being in an externship I think reinforced it, so I think I have a pretty good knowledge about it.

M: Does anyone feel the same or differently?

P: I think I have a fair knowledge of diabetes.

P: We’re learning about it now so I’ve been living breathing it for the last year and a half.

P: I think I have a good paper knowledge and teaching but I haven’t done my co-op yet so I’m looking forward to experiencing it.

M: so did the patients who have done their co-op, you feel like you would all be confident?

P: Yea.

P: I think comparing what I learned about diabetes, getting a degree in dietetics, I mean, I’m not even halfway through the ACE program and we’re just getting into diabetes, but I feel like I can see that I’m going to get from the ACE program is that with dietetics….what you said about making the diets. When I was getting my degree that was a big focus was coming up with the diabetic exchange system and figuring out what exactly would make up the calorie requirements for this patient. So, leaving that behind, I think that the ACE program will have me very prepared for…I have a much better
understanding of the disease process now than I did before. So I think I have a lot more
that I can add to education now than what I did before.

P: I think, we’re learning about it right now, but I feel like a lot of times they kind of
gloss over nutrition and we’re expected to learn it on our own. They’re more talking
about the actual disease and then every once in awhile they’ll say stuff about nutrition.

P: I disagree. I dunno if it’s your teacher, but NCLEX and SP is all about
testing….they’re gonna ask you what you should be eating. It was always a focus in our
classes. What vitamins and minerals. What’s okay and what’s not, that was always a big
part. If you’re looking in your book, those charts, maybe the teacher is glossing over it
but the teacher always said that is very important. So maybe you have to read it on your
own but…

P: Yea, that’s this whole program (lots of laughing).

P: It’s very important and I guess I got that.

P: You guys are ACE, with the co-op program I’ve had diabetes every year for a good
month.

P: Yea, we had it in pharm and adult classes.

P: Yea every class it comes up. Adult 1, adult 2, adult 3, pediatrics, maternity, everything,
gestational diabetes.

P: Everything.

M: So now I’m going to show you a photo here and that is a meal that has been delivered
to a patient of yours and this is what it would be. The orange juice is 4 oz. If the patient
says to you, I have diabetes, can I eat this? How would you feel about giving nutrition
advice to this patient? How would you respond and how would you respond if you were
or weren’t 100% confident in your knowledge?

P: I would say, I would probably recommend cuz it seems like there’s not too much
glucose intake with that. Maybe the orange juice but I think the cereal is okay.

M: there’s no right or wrong answers.

P: I’m a little concerned about the orange juice. I’m not a big fan unless it was freshly
squeezed but I feel like that’s not the case. I like the whole grains and the fruit and the
milk. But, I’m just worried about the orange juice and sugars.

P: I would, well, that appears to be a breakfast meal, so I would want to know what their
morning glucose was. Because overnight so many things could have happened. When
was the last time they had insulin? Are they hypoglycemic now because they might want 2 glasses or orange juice.

P: It depends, yea.

P: Well if this was the information you had…

P: Oh if they say can I eat this? I’d say hold on…

P: If they were in the normal range then yes. Assume that they’re in their normal range then yes.

P: If they’re diabetic they get an 8:00 glucose, glucometer anyways before breakfast.

M: Is there anyone who would say no to this meal?

P: I dunno because it depends what kind of milk it is. Cuz like, whole milk would have a lot of sugar in it after it digests in your body. Is there sugar on those flakes? Are they corn flakes or frosted flakes? I dunno…I feel like the fruit has a lot of sugar so I just really don’t know.

P: Are you asking what we’d say now if we didn’t have any other resources?

P: Yea, I absolutely would say no.

P: Can we say just wait one second? Haha (laughing in agreement).

P: I feel like if you say no, patients get really pissed off.

M: okay what about if you served this meal? It’s chicken and there is an 8oz glass of milk, I’m not sure which milk and 2 small cookies. Comment on sugar or sugar-free.

P: I think that’s fine.

P: I agree.

M: why would you say it’s fine?

P: Because they get their insulin.

P: Laughing in agreement.

P: Also, I was reading….not that you want to tell your patient that you can always go all out, but insulin regimens can be adjusted but I think that’s fine.

P: There’s not a lot of refined sugars, or processed carbs. You’ve got your potatoes
P: Good kind of carbs, yea.

M: So, I know it seems like we’ve been talking a lot about this throughout the whole night, so overall, how do you feel about nurses being responsible to give the nutrition advice to patients with diabetes? Again, it would just be part of your role to do it. Maybe there would or wouldn’t be anyone else.

P: I’m definitely consulting the nutritionist. And I’m definitely getting with him or her and then from there, getting together and going from there.

P: Yea, I think it’s a lot of collaborate effort between the doctor and medicine and the nutritionist and the patient.

P: I’m kind of thinking outside the hospital setting now and I think as a soon to be nurse, you have a responsibility with patient teaching no matter what it is. I figured that out more than anything that I know a lot more about diet and basic stuff about health than a lot of people around me do, than a normal person coming to an outpatient clinic. They’ll ask you a question because they don’t understand. It doesn’t matter if they’ve had diabetes for 5 months or 5 years and you have a responsibility to reinforce to teach them new things. There’s things that come up so you have to remind them. So it’s part of being a nurse.

P: I agree just because as nurses we are teachers and educators and there’s plenty more disease processes, sexually transmitted diseases, all kinds of stuff. We’re expected to give a thorough understanding about that issue or disease process or whatever the case may be. So the same goes for diet. I mean, if you’re consulting someone about sexually transmitted disease, etc. you’re not gonna have a dietitian to help you so I think the same goes for the diet. It’s our responsibility.

P: I think just from what I’ve seen in my clinical, that depending where you are, what hospital, somebody else may not be available. There may not be a dietitian there, so I feel like as a nurse, I have to be ready by the time I’m a real live nurse and graduate I have to be able to do it. Because sometimes there won’t be someone else to do it. But if there is someone else then collaborative care would be the best option. But if not, then I have to be able to do it.

M: So earlier when you said the patient, do you think patient care would be affected if that was part of a job description to be responsible for diabetes and nutrition management?

P: No…it’s teamwork. Bring the patient on board. Work with our nutritionist.

M: But if you had a bunch of patients, say you had one that had diabetes.
P: Well that’s their specific need. So clearly if they’re having a heart attack I’m not gonna give them diabetic education at the moment, but if that’s their need then yea, absolutely. Before they go, they’re gonna get something, get something out of me.

M: *Do you think patient care as a whole would change if you had a group of patients and only I had diabetes and that one was taking up time, asking questions about nutrition management, do you feel this would affect patient care as a whole.*

P: I feel like it’s expected in nursing anyway, because nurses every day would do some sort of education with patients, so it just depends on the patient and what they feel they need to know. So I feel like you would have that amount of time and it is kind of expected that you’re gonna spend more time in one patient’s room than another – it happens. So I feel like it should be expected but patient care, would stay the same because it is how it is now I feel. Nurses are sucked into one room for like an hour and they can’t get out…

P: I think that Registered Dietitians, if they were more known and more utilized in hospitals patient care would definitely improve but I don’t think it’s going to. If there’s not a dietitian available I don’t think the nurse is going to …I don’t think patient care would be worse off if they have to do it. But I think if dietitians were more available patient care would improve.

P: Teaching, education and collaboration is a high priority.

P: It depends…cuz again, if you decide to go in other aspects of nursing not just critical care, you can actually take the time…extra 10, 15, 20 minutes to break it down so that your patient can understand and really know what it means.

M: *Do you think the role of nurses would change at all? If this was part of your job description?*

P: I always thought it was part of it.

P: I thought it changed that dietitians are more involved. I thought it was part of nursing.

P: I think the problem is that we’re not, a lot of nurses go into the room and they’re quickly, in 5 minutes, teaching…giving handouts with information on it and then leaving and going to other rooms and not spending the quality time with the patient. That’s why they still have questions they keep asking, that’s why they bother the nurse so much. If you have a half an hour to spare between patients and you go in there and you give a thorough education session and you are one-on-one with the patient and have therapeutic conversation going on and they are engaged, I don’t think they would have any more
questions because you are offering your time, you’re asking them do you have any other concerns, anything else I can teach you and they say no, then you’re good.

\[ M: \text{but you already think it is part of your role as a nurse? Does everyone feel that way?} \]

P: Yes, lots of agreement.

P: I don’t see being able to spend a whole lot of time to teach. I kind of feel like my primary role is to treat or to give a resource but to actually sit down and teach….I always just thought, an added benefit definitely but I don’t think …

P: You know…I thought at first, but just having that around me so much and looking at the questions and me, I’m not a big chart person either but I am slowly getting there. But just looking at the questions, it kind of forces you to put yourself in a mind set, but I understand what you’re saying because I was there too…who am I going to teach? I can’t even teach myself sometimes…but you know, to me it just comes.

P: I think it’s a requirement. You can’t be discharged from the hospital without getting it, it’s on the discharge papers, and you have to do it. So whether you like doing it or not it’s part of your job. And also, a nurse’s role is primary treatment and health promotion, education and prevention. Throughout my 5 years here they’ve been saying primary, secondary, tertiary. You have to educate, you have to treat, you have to promote and if those things don’t work out then you have to scream and you know, rehab and all that good stuff. So it’s been engraved at Drexel.

\[ M: \text{So could nutrition education be improved in nursing programs? In the ACE program?} \]

P: Yea…I guess so. I just feel like they don’t really emphasize it as much as I think they should because it’s a huge prevention technique. I just feel like we have to learn on our own but it’s still really important.

\[ M: \text{In what ways could it be improved?} \]

P: Oh – I guess maybe emphasizing it more in our lectures.

P: I would be really interested in role playing. You get into a work situation, like for a job training you’re shadowing for a month before they even let you do stuff in a lot of situations. A lot of situations, you shadow for awhile and then you have somebody shadowing you while you start doing teaching to make sure you’re doing it right. I just like role playing, so throw some possible situations at me. I know we have the SP experience and we work with the dummies…that is coming up and sounds like it will be a really good experience…
P: Yea, I think you have an opportunity with co-op to teach but I only got the clinical experience. I think ACE is a whole another entity. It’s not fair to put it with a normal nursing program. No matter how much you want to include things, everything is fast, things get skipped over. They’re covering it but it’s a lot of reading on your own, it could be subjective.

M: how about other programs with nutrition? The co-op program?

P: I think there’s been a fair amount of nutrition in all different courses. And in clinical, they go over all that stuff.

P: We always have a few questions on our test about diet (like what would you give a patient with a roux-en-y bypass or bariatric patients). So you wouldn’t give them something fatty because you just messed with their gallbladder and their bile is going all crazy, so there’d be a question like choose from these 4 foods and you’d have to know the foods they could have.

M: So you seem to cover it a lot, but do you think it could have been improved at all?

P: Not in my program. I think ACE really covers it.

P: For the ACE program I don’t know how they could squeeze one more thing into it. But I was thinking, as far as in the ACE program it’s like what did you do before this? I’ll say dietetics and people say what is that? Also when I was getting my dietetics degree, I’m not an RD that’s a different thing I just have a degree…but how it felt even with our professors they were constantly pushing “nutrition is important, don’t get walked over in the hospital”. P: So I was just thinking to incorporate, maybe an RD to teach a class so we got an understanding of what an RD can do. Some collaboration between nursing students and registered dietitians. Maybe if they participated in the SIMS / SP experience. There could be more collaboration.

P: I think maybe in the clinical area…they could have, it is part of each clinical you have to do patient teaching, but that should emphasize the nursing students to do it and not just observe. Some have more of an experience than others. So maybe across the board, the same kind of requirement.

M: Okay, take the papers you have now and turn them over. Jot down 3 words or phrases, to describe how you feel about the role of nurses in promoting nutritional management of diabetes.

M: So let’s go around the room and just briefly describe what you wrote.

P: First I put, very important for the nurses to teach diabetics how to eat and what food is correct or not correct, but appropriate for them. Also put to reinforce or remind the
patient to make good decisions like “oh you shouldn’t eat that cookie because so and so will happen” or “we’ll need to give you a higher insulin dose”. So it’s important to reinforce and remind them. Because they could forget – I would forget – so give a reminder. Last one was collaborative care with the patient, family and healthcare team. Even families should be involved to help the patient cook and make them make right decisions also. Everyone in the healthcare team should be involved also.

P: Nurses are teachers and includes nutrition. Second, nurses should be knowledgeable to give nutrition advice to their patients. It’s part of their job. And lastly, I think that nurses are responsible to also help the patients and give them advice to get more information, for nutrition or nutrition experts and diabetes dietitians.

P: I said it’s vital for us to teach diabetics about nutrition just because it’s part of our job pretty much. It’s life-saving because without the initial teaching they might do something stupid and go into diabetic ketoacidosis or something. It’s beneficial because they’ll feel like a sense of support that we’re on board with them, that they can trust us. They can ask us whatever questions they have. We can give them options on what to do, what kinds of foods they can eat, so they’ll feel like they can come in and ask us any kind of question and we can also refer them to dietitians for additional information.

P: I chose essential, influential and preventative. I guess essential is kind of good…influential because they (patients) listen to you and what you say so it’s really important that you know what you’re talking about because they take what you say to heart. Preventative because I’m kind of big on…having them want to see you again. Right now we’re treating we’re not preventing anything so we need to move towards that in our country.

I chose diet educator and reinforcer. I also wrote down management as far as it goes with incorporating your meds into your diet and also said lifestyle teaching and as far what you should look out for is your diet and are your meds working for you or do you need adjustments to be made? So educating the patients on what to look for.

P: I chose teaching in community. The way I put these together is that’s where I would like to start first, is in the community because I see so much of it around me and so much of it that could be prevented. How bringing it together is being as knowledgeable as I can and just to be down to earth because I feel that’s the way you touch people. If they think you’re up here and you’re down there, then you don’t make that connection.

P: I chose critical because I feel like it is a nurse’s role to enforce nutrition. I also chose life-changing because I do feel that what you say to the patient can have an impact on how they decide to live their lives and also I chose knowledgeable because you want to
have good basics and information so you can give them the most accurate and precise information.

P: I put to clarify myths…figure out what they already know and if they have anything wrong. Emphasize patient participation because they’re gonna be the ones that have to do it. Also if it’s possible to explain the process that’s happening in the body in simple terms because maybe that might help them see it from a different perspective and change things.

P: I chose treatment, prevention through education and to increase the quality of life. Ultimately, getting them functioning at their optimal level is a big goal of mine.

P: Give the patient resources about the diabetes, pamphlets, online websites, especially when people get first diagnosed, they’ll actually look at everything because they’re curious about what they have. Be supportive and listen to the patient. Listen to what the diet is now and how you can change it. Use simple terms and be direct.

M: Is there anything that anyone would like to add?

No….

M: Well thank you guys for your time and for coming out. Trish will distribute the reimbursement.