

DIABETES EDUCATION PROGRAM PROPOSAL  
FOR A LOCAL COMMUNITY HOSPITAL

A Project Presented to the Faculty  
of  
California State University, Stanislaus

In Partial Fulfillment  
of the Requirements for the Degree  
of Masters of Science in Nursing

By  
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CERTIFICATION OF APPROVAL

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## DEDICATION

This project is dedicated to my friends, family, and coworkers who have supported me through my academic journey. Without the love, support, and motivation of these close friends and loving family, I could not have achieved my dreams. To my coworkers for putting up with my constant scheduling needs and requests for volunteering to watch my power points on diabetes.

Most especially I dedicate this project and accomplishment to my husband, whose love and faith supported me not only through the grueling study nights of nursing school but remained strong and grinned on through my adventure of graduate school. Jerry, honey, I am all yours, once again!

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## ABSTRACT

In 2012, the American Diabetes Association reported nearly one in three adults and children in the United States will one day be affected or currently are affected everyday with the complications of an always manageable and often preventable disease. If rates of diagnosis continue to increase at the current rates, it is estimated that over half of all Americans will have pre-diabetes or be diagnosed with diabetes by 2020. Diabetes education plays a key role in the management and prevention of type 2 diabetes, but is a widely unused resource mainly due to limited access and health literacy barriers. Low income, underinsured Hispanic Americans are a particularly vulnerable population, with one of the highest rates of diagnosis of type 2 diabetes. A local community hospital serves a large population of low income Hispanic residents with type 2 diabetes mellitus but does not offer a diabetes education program. A diabetes education program was designed using established learning theories and nursing care theory techniques, with appropriate literacy level presentation, and culturally appropriate information. Factors such as administrative and community support was addressed, as well as funding and advertising. A plan for evaluation of the program effectiveness was constructed, monitoring attendance, improvement or decline in diabetes management, and hospital admission and re-admission rates of its Hispanic patients with diabetes.

## CHAPTER 1

### INTRODUCTION

#### **Overview of the Problem**

In 2012, the American Diabetes Association (ADA) reported that 1.7 million adults in America were newly diagnosed with diabetes mellitus (ADA, 2014b). When added to the number of previously diagnosed individuals, America's total number of individuals with diabetes became 29.1 million (Center for Disease Control and Prevention, 2014b). Adults and children with pre-diabetes total an estimated 86 million, bringing America's total to over 116 million people living with the effects of diabetes (ADA, 2014b). According to these reports, nearly one out of three people in the United States will one day be affected or is currently affected with the everyday complications of diabetes, which is a manageable and often preventable disease. Should the rates of diagnosis continue to increase at the current rates, it is estimated that over half of all Americans will have pre-diabetes or be diagnosed with diabetes mellitus by 2020 (United Health Center for Health Reform and Modernization, 2010).

Type 1 diabetes is currently an unpreventable condition usually affecting children and young adults, but can appear at any age (Mayo Clinic, 2014a). Of the 29.1 million American with diagnosed diabetes, 4.3% had type 1 diabetes (American Diabetes Association, 2014b). A person with type 1 diabetes has an autoimmune disorder that attacks the pancreas, gradually damaging the beta cells over time. The

beta cells are responsible for producing insulin. Insulin assists the entry of glucose in the blood stream into the cells of the body, allowing the organs to do their functions. People with type 1 diabetes overtime become completely dependent upon exogenous insulin to manage their blood glucose levels to prevent the advancement of the disease process (Mayo Clinic, 2014a).

Type 2 diabetes mellitus is currently the most common form of diabetes, comprised of 95.7% of the diagnosed diabetes population in America (American Diabetes Association, 2014b). Type 2 diabetes affects people of all races and cultures, young and old, rich and poor (Mayo Clinic, 2014b). It is a condition where the cells within the body have become resistant to insulin and the beta cells of the pancreas do not produce sufficient amounts of insulin. People with pre-diabetes and type 2 diabetes can manage their blood sugars with diet and exercise. However they may eventually require oral medications, and possibly daily exogenous insulin injections (Mayo Clinic, 2014b).

When insulin is ineffective at driving the glucose from the blood stream into the cells of the body, the cells are unable to do their functions. Organs in the body, such as the heart, kidneys, brain, eyes, and muscles are affected. When the cells cannot function due to insufficient glucose, the tissues and organs begin to fail. Complications of diabetes include weight gain, coronary artery disease, hypertension, stroke, blindness, kidney disease, neuropathy, amputation, and can lead to death (ADA, 2011). Diabetes was reported by the ADA, as the seventh leading cause of death in the United States in 2010 based on 69,071 death certificates for which

diabetes was listed as the underlying cause of death. In fact, the ADA reported that diabetes as cause of death may be an underreported finding. Approximately only 35% to 40% of people with known diabetes who died, did not have diabetes listed anywhere on their death certificate (ADA, 2014b).

In 2011, San Joaquin County (SJC) treated an estimated 68,500 residents with diabetes (Healthier San Joaquin, 2011a). SJC has a very high indigent population and the local community hospital is the main provider of inpatient services for this uninsured and underinsured population. This local community hospital is also the main provider for outpatient care and referral of resources for these patients, including education regarding their diabetes management. Currently, there is no diabetes education program available for this population at the local community hospital (Healthier San Joaquin, 2011a). With type 2 diabetes disproportionately affecting the underinsured and uninsured populations, it needs to be a priority for the local community hospital to increase the efforts to educate and empower patients admitted with diabetes. The following graduate thesis project is a proposal to introduce a diabetes education program at the local community hospital.

## CHAPTER 2

### REVIEW OF LITERATURE

A local community hospital serves mostly the uninsured and underinsured community of San Joaquin County (SJC); with 9.3% residents having type 1 and type 2 diabetes mellitus (Healthier San Joaquin, 2011a). The Hispanic community makes up nearly 40% of this population (Healthier San Joaquin, 2011a). Therefore, the focus of the literature review was placed on the Hispanic population with type 2 diabetes. The following findings were integrated however there will be a discussion in an attempt to show the immense need to increase access of effective, literacy-sensitive, and culturally appropriate diabetes education for this population of the SJC community.

#### **Search Strategies**

A review of literature was performed to evaluate the current diabetes education practices available in the fight against diabetes. The search tools used were EBSCOHost and the Diabetes Educator journal collection, both online and in hard copy. Only journals published from 2004 until the present were considered for review. Initially the key word used was diabetes education effectiveness. This search yielded over 405 articles. Only articles pertaining to research done on individuals within the United States were considered to increase the relevance of the findings to the aim of this project. During the search, several main barriers to accessing diabetes education were discovered, which lead to further evaluation of the literature. The

same search tools were used, with the same publication years, and the following key words were used in several combinations: literacy and diabetes education, literacy and Spanish and diabetes education, access to diabetes education, cultural competence and Hispanic and diabetes education, and economic status and income and diabetes education. These searches yielded a cumulative total of 998 articles. Duplicate articles were found within the multiple search term results as well. A total of 21 articles were selected from the search terms for their relevance to the topic of this project. These articles were reviewed in full for inclusion in the review and synthesis of the literature. Reputable resources such as the American Diabetes Association, the American Association of Diabetes Educators, and the Centers for Disease Prevention and Control were also used for definitions and statistical data.

### **Diabetes Education**

Diabetes education plays a key role in the management and prevention of DM

2. Diabetes education, also referred to as diabetes self-management training (DSMT) or diabetes self-management education (DSME), is defined as “a collaborative process through which people with or at risk for diabetes gain the knowledge and skills needed to modify behavior and successfully self-manage the disease and its related conditions” (American Association of Diabetes Educators, 2013). These structured diabetes education programs, DSMT and DSME, are a continuous progression between the person with diabetes, the caregiver and/or family member, and the diabetes educator (American Association of Diabetes Educators, 2013). Education on self-management behaviors and lifestyle changes in diet and exercise,

have been shown to positively reduce the risks associated with type 2 diabetes (Beverly, et al., 2013; Boren, Fitzner, Panhalkar, & Specker, 2009; Castillo, et al., 2010; Haas, et al., 2012; Remler, et al., 2011; Swavely, Vorderstrasse, Maldonado, Eid, & Etchason, 2013; Vincent, McEwen, Hepworth, & Stump, 2013; Welch, Allen, Zagarins, Stamp, Bursell, & Kedziora, 2011). Taking part in a diabetes education program that addresses the importance of lifestyle changes and proper self-management, is recommended by both the American Association of Diabetes Educators (AADE) and the American Diabetes Association (ADA) for all people with diabetes (Haas, et al., 2012).

Currently, diabetes education is a widely unused resource (Shaw, Killeen, Sullivan, & Bowman, 2011; Siminerio, et al., 2006), mainly due to limited access and health literacy barriers (Bailey, et al., 2012; Bowen, et al., 2013; Powell, Hill, & Clancy, 2007). The most recent data provided by the AADE, reported that only 1% of people with diabetes receiving benefits from Medicare received diabetes self-management education (American Association of Diabetes Educators, 2013). The AADE also reported findings from an independent study where 26% of participants received instruction from a diabetes educator (American Association of Diabetes Educators, 2013). Uninsured and underinsured populations are the most effected population with diabetes (ADA, 2013), and are the least likely to receive diabetes education (Brown-Guion, Youngerman, Hernandez-Tejada, Dismuke, & Egede, 2013).

In few circumstances where diabetes education was provided, it was noted that the materials used were written at higher than appropriate reading levels, making the concepts difficult to learn, difficult to understand, and the self-management techniques difficult to use (Hill-Briggs & Smith, 2008). Diabetes is a manageable disease, but without effective education too many people will fall victim to its horrible consequences.

### **Literacy**

Health literacy is the ability to effectively understand the terminology used to describe a patient's disease process and instructions for self-care and management (Center for Disease Control and Prevention, 2014a). The most recent survey of adult health literacy in the United States was conducted in 2003 as part of the National Assessment of Adult Literacy, sponsored by the National Center for Education Statistics (Kutner, Greenberg, Jin, & Paulsen, 2006). This survey found that the majority of adults had intermediate health literacy (53%), about 22 percent had basic, 14 percent had below basic health literacy, and only 12 percent of adults were found to have proficient health literacy (Kutner, Greenberg, Jin, & Paulsen, 2006). Patients with low health literacy experienced difficulty, or the inability to translate information found in traditional diabetes education programs into effective self-care management. A low health literacy level has been found to be a significant barrier to learning. Research has shown low health literacy levels correlates significantly with a high correlation to lower glycemic control. This barrier is manifested in lower adherence to medication regimens and complications with following the self-

management instructions (Bailey, et al., 2012; Bowen, et al., 2013; Powell, Hill, & Clancy, 2007).

Numeracy level is the ability to use and understand numbers in daily life. Diabetes related numeracy skills such as interpreting blood glucose readings and adjustable insulin sliding scales, were found insufficient in about 50% of tested subjects. It also showed significant negative impacts on the ability to effectively comply with diabetes self-management techniques (Bowen, et al., 2013; Cavanaugh, et al., 2008).

### **Culturally Competent Diabetes Education**

Health literacy is further complicated when the individual is experiencing language barrier and different cultural customs. General diabetes education materials that are presented in English to a Spanish speaking individual can be completely ineffective if there is no transference of information. Pictures of food such as burgers, sandwiches, or pancakes which are examples of the average American diet, are not helpful to an individual whose culture includes a diet of rice, beans, and tortillas. In order to address these health disparities, culturally sensitive strategies must be implemented to enhance delivery of effective health education, in particular among the at-risk communities (Bailey, et al., 2014; Lopez-Quintero, Berry, & Neumark, 2009).

Low income, uninsured or underinsured Hispanic Americans are a particularly vulnerable population, being one of the highest rated populations diagnosed with type 2 diabetes (Centers for Disease Control and Prevention, 2014b). Findings also show

that people who are uninsured, underinsured or receive Medicare have the lowest literacy levels (Kutner, Greenberg, Jin, & Paulsen, 2006). Low health literacy levels have also been generally found within the Hispanic population with diabetes (Bailey, et al., 2014; Bhargave, Wartak, Friderici, & Rothberg, 2014; Hu, Amirehsani, Wallace, & Letvak, 2013; Remler, et al., 2011; Rosal, et al., 2011a). However, literacy-sensitive, culturally tailored interventions have been found to improve diabetes control in the Hispanic population (Mauldon, Melkus, & Cagganello, 2006; Metghalchi, et al., 2008; Salto, et al., 2011; Wheeler, et al., 2012) and specifically among those with low-income (Castillo, et al., 2010; Rosal, et al., 2011b; Swavely, et al., 2013; Vincent, et al., 2013; Welch, et al., 2011).

In addition to the adult population, children have also shown vulnerability to diabetes. The SEARCH for Diabetes in Youth Study, began in 2000 and will continue into 2015. There are study centers in five states; the aim is to have a greater understanding of diabetes' effects on children and young adults in the United States. The study was funded by the Centers for Disease Control and Prevention (CDC) and the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) (SEARCH for Diabetes in Youth, 2014). Early findings from this study revealed data showing a 200% increase in Hispanic adolescents being diagnosed with diabetes type 2 over a period of one year. This statistic makes Hispanic children the most vulnerable population with the fastest growing numbers of newly diagnosed cases of type 2 diabetes in the United States (Liese, et al., 2006; Dabelea, et al., 2007).

Hispanic Americans are found to be one of the largest growing population of people being diagnosed with diabetes. In addition, they have been found to have a disadvantage to access for effective diabetes education, along with barriers faced within the uninsured and underinsured areas. The literature reviewed clearly points to a very obvious conclusion. There is an immense need to provide literate sensitive material by increasing access and availability to culturally appropriate diabetes education for the uninsured and underinsured Hispanic Americans serviced at the local community hospital.

CHAPTER 3  
METHODOLOGY

**Objective**

The objective of the diabetes education program is to improve the health and well-being within the diabetes population served at a local community hospital and surrounding areas. As previously discussed the prevalence of diabetes type 2 is increasing at overwhelming rates across the nation. Even more devastating, is the prevalence in our own community and often times in our own homes. The most valuable tool for management and prevention is education. Education empowers the patient and gives them a sense of control in what can otherwise feel like a powerless situation. Education is a powerful tool, and when sharpened has the potential to not only improve quality of life, but possibly save a life. This program will increase the efforts of the local community hospital and support its mission to provide excellent healthcare services and education to its clients.

**Philosophies and Organizational Framework**

The philosophy of the patient diabetes education program will be consistent with the philosophy of the hospital. The philosophy of the local community hospital includes providing excellent education, highly regarding quality of life, family cooperation and support, and respect for clients and employees. The diabetes education program will incorporate these values by providing the most recent evidence-based educational materials as recommended by the American Diabetes

Association. For the client family support and involvement will be encouraged. The cultural needs and values of the clients and staff will be respected. The local community hospital also values the community orientation, the affordability of the healthcare to its clients, and the cultural sensitivity of healthcare provided. These values will be mirrored in the diabetes education program as well. The program in its essence is community-oriented; it will serve to decrease and prevent the prevalence of diabetes in our community. The diabetes education program will be available to all residents of San Joaquin County. Financing will be discussed in a following chapter. The educational materials used in the diabetes education program, will be developed to show cultural sensitivity. Pictures, lists of foods, and food labels, in addition to discussions of holidays and religious practices will also be culturally relevant to the targeted groups. Initially the materials will be available specifically for the Hispanic community, provided both in English and Spanish. More cultures and languages will be added as the program develops overtime.

### **Curriculum Development**

The curriculum for the diabetes education program at the local community hospital will be developed using well known theories of learning and nursing. The program will be structured using a strong foundation saturated in well tested and reliable methods. The goal is to create a strong start to a successful learning program and ensure the improvement of optimal health outcomes. The process from development to implementation will combine aspects of adult learning theory and cognitive learning theory. Selection of educational materials and presentation of

information will incorporate both Dorothea Orem's self-care nursing theory as well as Leininger's cultural care theory.

### **Adult Learning Theory**

The majority of patients with diabetes treated at the local community hospital are adults. Adult learning theory focuses on well supported ideas of how adults learn most effectively. This will be the conceptual framework that will guide presentation of the diabetes courses. Adult learning theory consists of six principles: the need to know, a sense of autonomy, the importance of life experiences and knowledge, the readiness to learn, the need for practical and applicable learning, and internal motivation (Knowles, Holton, & Swanson, 2005).

The need to know is the first principle of the adult learning theory (Knowles, Holton, & Swanson, 2005). Once adult learners know the reason why they need to learn something they invest more time and energy into learning the information. Every educational teaching session will begin by discovering if the patient with diabetes has found the need to learn, or if they know why a change needs to take place. The "need to know" may be a discussion about their personal experience with the effects of diabetes on their body, their mood, or their family life. The "need to know" could also be with family members and their experience with how diabetes is affecting a loved one.

The second principle of Adult Learning Theory is the idea that adults are self-directed learners (Knowles, Holton, & Swanson, 2005). The adult learner benefits most when their learning efforts are developed around what interests them and are learning

about what they want to learn (Knowles, Holton, & Swanson, 2005). This principle will be reflected by the patient being actively involved in meal plan construction, choice of exercise regimes, goal setting, and the choice to incorporate family, friends, or support members in their management plan. When the adult learner knows they have autonomy, they are more likely to adhere to the management plan, reach the goals they have set, and have better health outcomes (Knowles, Holton, & Swanson, 2005).

Every adult learner has accumulated a knowledge base of information through the experiences they have had. Incorporating this fact is the third principle of adult learning theory (Knowles, Holton, & Swanson, 2005). Adult learners will incorporate any new information and attempt to make it fit in with what they already know. If the information is conflicting, the adult learner will have to make the choice to retain the old information or keep the new information (Knowles, Holton, & Swanson, 2005). Most adults have had some experience with the term “diabetes” and thus have some notion of what it is. Part of the diabetes education program will be to discover the previous knowledge about diabetes and, if need be, to challenge the previous knowledge. Previous knowledge may have a strong cultural component, so respecting the origination of previous knowledge and its importance to the learner will be carefully considered to maintain trust and a beneficial learning environment. Experiential knowledge can also be very beneficial in group activities (Parker & Smith, 2010), and thus should always be explored.

The fourth principle is the readiness to learn (Knowles, Holton, & Swanson, 2005). The readiness to learn includes both being physically and mentally ready to

learn. Being physically ready to learn means that the patient is free from distractions such as pain, hunger, or disorientation from illness or medication (Knowles, Holton, & Swanson, 2005). Education in an inpatient setting should be discouraged if the patient has any physical distractions. Mental readiness is measured by the patient's willingness or want to learn (Knowles, Holton, & Swanson, 2005). Mental readiness is affected by many factors, including but not limited to, perceived significance of learning and emotions surrounding their situation (Knowles, Holton, & Swanson, 2005). Mental un-readiness can be detrimental to learning, so understanding that the patient may have some readiness issues is an important indicator for the educator and may require intervention.

Learning needs to be realistic and practical. The fifth principle focuses on the idea that adult learners learn best when the information is important to them and is presented in a useful way (Knowles, Holton, & Swanson, 2005). The presentation of materials will be designed to meet the needs of the people San Joaquin County. Resources will be accessible, the content will be relevant through effective literacy levels, and pictures and graphs when beneficial, will be culturally significant.

The last principle of adult learning theory involves motivation (Knowles, Holton, & Swanson, 2005). Adults are internally motivated, when they have an interest in obtaining information or making changes that will intrinsically benefit them (Knowles, Holton, & Swanson, 2005). Learning about diabetes and creating or making changes to their management plan will benefit them by increasing their health and quality of life. This type of motivation is much stronger than an extrinsic motivator

such as monetary gain, a good grade, recognition, or a prize (Knowles, Holton, & Swanson, 2005).

### **Cognitive Learning Theory**

The purpose of patient education is to increase the competence and confidence of the learner to maximize self-management, responsibility, and promote self-care (Bastable, 2008). Cognitive learning theory is most applicable to the specific needs of patients requiring educational nursing care. The theory focuses on the learner's intrinsic motivations, the theory of attention, the inclusion of Gestalt psychology, and the social aspects of learning.

Cognitive learning theory supports that a learner's goals and expectations influence motivation, and are stronger than an extrinsic reward (Bastable, 2008). This theory focuses on the internal processes of the learner. These processes include influences of past experiences, perceptions, ways of processing and incorporating information, social influences, and expectations. Cognitive theory is organized into a total of six principles (Bastable, 2008). Two important principles will be discussed in further detail and applied to actual clinical situations.

Cognitive development is the principle of cognitive learning theory that is heavily influenced by Gestalt psychology (Bastable, 2008). The Gestalt principle recognizes that perception or attention is selective. This selection can be based on past experience, needs, personal intentions and attitudes, reference groups, and the structure of the stimulus or situation. Learners with differing internal dynamics will focus on, process, and reply to information differently, even within the same setting

or environment. Each person's unique perceptions, expectations, and experiences will be subject to these internal dynamics. The Gestalt principle also recognizes that past experiences and expectations play a role in what information the learner focuses on (Bastable, 2008). For example, a patient who is admitted to the hospital with an infection complicated by type 2 diabetes and has received information in the past, may only focus on the repetitive information and may miss the new information the nurse is attempting to give. The nurse will have training to acknowledge their previously conceived notions and challenge them with new information. Whereas a newly diagnosed patient with type 2 diabetes, also admitted to the hospital with an infection, will be overwhelmed by a new diagnosis and should only be given basic information to encourage retention.

Cognitive development also focuses on qualitative changes in perceiving, thinking, and reasoning as people age and develop (Bastable, 2008). As individuals mature, they perceive information differently. Patients of different ages in the same situation will learn different information. This happens because the learner attempts to assimilate the new information to fit in with what they already know; or they may accommodate their established perceptions and interpretations to fit the new information (Bastable, 2008). For example two women have been diagnosed with type 2 diabetes, one is 12 years old and the other is 45 years old. According to cognitive development principle, the 12 year old will have different perceptions and interpretations of the education materials and information because she is at different stage of development. The nurse will be prepared to deliver information

appropriately for the stage of development of the learner. Diet and exercise recommendations can be adapted to be relevant for the learner.

Social cognition is another principle of cognitive learning theory that is most relevant to the program. Social aspects of perception, thought, and motivation are highlighted in social cognition (Bastable, 2008). This concept forces the educator to understand and acknowledge the dynamics and influence of the social environment and groups on the behaviors within the learner and the learner within the group. Social cognition includes the influence of culture on learning new information (Bastable, 2008). Educating a patient on diet or treatment can be challenging when the new diet or treatment conflicts with their cultural beliefs. A person's culture is held in high regard, it is deeply trusted, and difficult to violate. Providing information that is in conflict with a person's culture may not be easily received. The learner may even develop mistrust towards the educator's credibility.

Cognitive learning theory when applied to patient education will address the differences required by various learning environments; such as the effect of the environment on the learner and the internal forces of the patient. Patient education may take place at the bedside, in a hospital, or in a clinic setting. These two environments require different techniques to be used by the educator in order to gain optimal learning. Education that takes place in a hospital setting have many factors that may become barriers to the patient learning if not acknowledged by the nurse educator. According to the Gestalt principle, the patients' needs may influence their attention (Bastable, 2008). The patient may be selective in what information they

acknowledge if their needs for pain medicine or food have not been met. For example, educating about pain management or a disease process before giving pain medicine when a patient is in pain, is not the ideal situation for effective learning. Attempting to educate after a patient has received pain medicine that has induced mild sedation, is also poor timing for education.

The use of cognitive learning theory will assist the nurse educator to be more effective in promoting self-care through an acknowledgement of their learner's internal influences. Educating patients about their specific illness and the process of their disease, is a very important nursing function used to empower our patients.

### **Dorothea Orem's Self-Care Deficit Nursing Theory**

Dorothea Orem's self-care deficit nursing theory is a general theory that defines specific roles for the nurse educator and the patient learner (Parker & Smith, 2010). The general theory has three parts: self-care, self-care deficit, and theory of nursing systems. For the interest of the education program, the self-care and self-care deficit concepts will be covered.

The theory of self-care is central to the idea that the patient provides care for one's self at different levels (Parker & Smith, 2010). The care that one provides is deliberately learned and is performed to sustain life, maintain human functioning, and attain well-being. Orem discussed two processes that take place within the patient learner. The patient must first evaluate and explore what care can and should be done. The patient learner will then decide what care is possible to do and then do it. Dorothea Orem acknowledges that variations such as culture, necessary resources,

capabilities to learning, and motivation to learn will all vary and affect these two processes of self-care (Parker & Smith, 2010).

The theory of self-care deficit focuses on why people will, at all times in their life, need nursing care (Parker & Smith, 2010). The need for nursing care can range from complete and total care in an intensive care unit, dependent on a ventilator machine, cardiac medications, or an insulin drip, to very minimal outpatient care such as health maintenance vaccinations or preventative and supportive patient education (Parker & Smith, 2010). Diabetes education is a necessary nursing function to provide for all patients who will need to manage their diabetes for a lifetime.

A strong foundation consistent with Dorothea Orem's self-care nursing philosophy, is appropriate for the diabetes education program. Incorporating Orem's belief that it is the nature of human beings to possess an "unrestricted desire to know" (Cody, 2013 p84-85), supports the previously discussed cognitive learning theory. A foundational part of self-care involves education; learning what care can be done, what care should be done in order to learn that the care needed is possible, and then to learn how to do it. With this knowledge the patient is able to return home and manage or possibly even improve to their optimal level of health (Parker & Smith, 2010).

### **Leininger's Theory of Cultural Care**

It is necessary to elaborate on the topic of cultural competence when discussing building an educational program that will serve a highly diverse patient population. Both Cognitive Learning Theory and Dorothea Orem's Self-Care

Nursing Theory have discussed the importance of acknowledging the learner's cultural influences to encourage optimal learning and increase the ability to learn.

The most appropriate theory to discuss and incorporate to support the cultural aspects of the diabetes education program is Dr. Leininger's theory of culture care diversity and universality (Parker & Smith, 2010).

Dr. Leininger describes three modalities for nursing care: culture care preservation or maintenance, culture care accommodation or negotiation, and culture care restructuring or repatterning (Parker & Smith, 2010). These modalities provide alternative creative ways to provide culturally congruent care. The nurse educator must discover the needs of the patient and incorporate those needs into the traditional routines and interventions. Applying these techniques were found to increase health outcomes (Parker & Smith, 2010).

Culture care preservation or maintenance incorporates the patient's currently valued care practices into their plan of care (Parker & Smith, 2010). An example of this would be to adapt the meal planning guides to incorporate carbohydrate counts and measurements of foods eaten by the patient. Culture care accommodation or negotiation are nursing interventions that assist the patient to adapt to and negotiate with healthcare providers to benefit their healthcare outcomes. An example for this modality is the conversation involving education of the beneficial need for new medications or dietary changes. Culture care repatterning or restructuring are nursing interventions established mutually with the patient, that incorporate the new, different, and beneficial health care routines into their lifestyle (Parker & Smith,

2010). An example of this would be adapting dietary restrictions due to introduction of need for daily insulin injections during periods of fasting on religious holidays.

The principles of adult learning theory and cognitive learning theory incorporated with Dorothea Orem's self-care nursing theory and Leininger's cultural care theory will create a strong foundation for an effective diabetes education program.

Developing an education program with these values supports the mission of the local community hospital to improve health and well-being within the population of people served within San Joaquin County.

## CHAPTER 4

### IMPLEMENTATION

#### **Current State of Resources in San Joaquin County**

The San Joaquin County Community Health Assessment Collaborative (SJC<sub>2</sub>HAC) was formed in 2004 in response to the California State mandate SB697 (SJC<sub>2</sub>HAC, 2013). The State of California mandate required all non-profit hospitals to identify and document ways in which they are serving their communities. The most recent project done by SJC<sub>2</sub>HAC in collaboration with Valley Vision, Inc. was between June 2012 and February 2013. A community health needs assessment (CHNA) of the residents in San Joaquin County was completed. The findings showed the top ten most vulnerable areas by zip code. These areas were labeled Communities of Concern because they were found to have the highest rates of chronic disease and negative health outcomes that were consistently above the county, state, and Healthy People 2020 benchmarks. The purpose of the assessment was to create a profile of the community, to encourage and promote collaborative efforts, and to improve the health of residents in San Joaquin County. The top two priority health needs were to increase access to primary and preventative care and increase access to healthcare education (SJC<sub>2</sub>HAC, 2013).

In response to the findings St. Joseph's Medical Center in Stockton, California, continued to expand the efforts of its CareVan. The CareVan is a 48 foot mobile health clinic, offering free health services. Services such as treatment for

minor illnesses and screenings for chronic conditions, such as diabetes (Dignity Health, nd.). A family resource center was established in south Stockton, focusing on neighborhood safety, physical and mental health, and overall well-being (Healthier San Joaquin, 2011b). The First 5 of San Joaquin established El Concilio's Family Wellness Program, providing comprehensive health screenings, referrals, education, and group parent meetings. Sutter Tracy also established a Resource Center, offering referrals to many beneficial programs (Healthier San Joaquin, 2011b). None of the above programs focused on the health need for diabetes education.

The San Joaquin Medical Society (SJMS) is a professional association of physicians from all specialties and clinical practice settings (San Joaquin Medical Society, 2015). At the beginning of 2015, SJMS created the Unite For Diabetes SJC website, in collaboration with Valley Health Exchange (Valley Health Exchange, 2015). This website offers printable information on diabetes facts, management facts and tips, free classes, and a physician finder. Resource information on the website is available in English and Spanish. Linked materials from the National Institute of Health are also distributed on this site (Valley Health Exchange, 2015a). The following are the free diabetes education classes that are listed on the website:

- St Joseph's Medical Center, located in south Stockton, offers free Diabetes Workshop classes every Wednesday (English), Thursday (Spanish) and by appointment (Hmong). Support groups with a certified diabetes educator and/or registered nurse (CDE and/or RN) are also listed, but are not advertised as free to the public (Dignity Health, nd.).

- Sutter Gould Medical Foundation, in north Stockton and Tracy, offers a free two-part Diabetes Basics class every month, in addition to a drop-in clinic after each Diabetes Basics session, for assistance with the use of blood glucose meters (Sutter Gould Medical Foundation, 2013).
- Dameron Hospital, in south Stockton, offers Journey to Control: Diabetes Conversation, weekly sessions with diabetes education, free to the community (Valley Health Exchange, 2015b).

According to the findings from the 2012-2013 community assessment, all areas directly surrounding the local community hospital were amongst the ten Communities of Concern, being the most vulnerable areas for limited access to primary care and health education (SJC<sub>2</sub>HAC, 2013). The classes at nearby hospitals listed on the Unite For Diabetes SJC website may reach surrounding communities, however those residing in the Communities of Concern are still 7-8 miles away. They would greatly benefit from services offered within their direct vicinity. The local community hospital had no participation in the community assessment in 2012/2013 and currently makes minimal effort to assist residents with diabetes support or education. We have the resources, the passion, and the responsibility to our community, it's time to step up.

### **Support from Hospital Administration**

The proposal to gain support for a diabetes education program will be presented to hospital administration and stakeholders. The proposal will include the community assessment findings along with the strong support of research showing

the beneficial correlation of diabetes education and increased patient outcomes. Financial cost will always be a concern to any administration. Therefore, it will be necessary to conduct a cost analysis specifically for the local community hospital, to identify the current costs related to diabetes care. Additionally, the analysis will include anticipated costs of creating an educational program, to involve many factors. Some of these factors will include employing a diabetes educator to conduct research, to create educational materials for instructions of all courses, and to collaborate with The San Joaquin Medical Society and Valley Health Exchange to advertise the courses on the Unite For Diabetes SJC website. Promotional advertisement to the community for the new program will be advertised on the local community hospital's website. This analysis will be used to evaluate the cost effectiveness of the diabetes education program when it is approved.

The presentation to administration and stakeholders will include a two part plan. The first part of the plan will include a detailed outline for an outpatient community centered diabetes education class along with support groups. The outpatient diabetes self-management education (DSME) program is to be recognized by the American Diabetes Association.

Improved inpatient diabetes education will be the second and most crucial step of the plan. The plan to improve inpatient diabetes education and care will include a recommendation for obtaining the national recognition from the Joint Commission.

### **Step 1: Recognition by the American Diabetes Association**

The American Diabetes Association is a national organization committed to battle against the fatal consequences of diabetes, and to support people who are suffering with diabetes (American Diabetes Association, 2014b). National recognition by the American Diabetes Association ensures the highest quality of diabetes education, as the organization endorses only the highest known quality care and educational standards. The American Diabetes Association recognizes diabetes education programs that meet the requirements of the National Standards for Diabetes Self-Management Education (NSDSME) (American Diabetes Association, 2014b). Recognition by the ADA also meets the requirements for this service to be reimbursable under Medicare Part B (Center for Medicare and Medicaid Services, 2012). The proposed outpatient diabetes self-management education and support program will follow the established recommendations outlined below (American Diabetes Association, 2014b).

A. All participants of the program seeking recognition, will meet and maintain all requirements for the full four year recognition period:

- Identifying a medical provider for the participant (referring provider) if insurance requires a referral.
- Assessing the participant to establish her/his diabetes education need(s)
- Formulating an education plan (including behavior goal setting), that involves the participant and is based on her/his assessed need(s)

B. The organizational structure will be established and/or in place at all times during the four year recognition period

- One sponsoring organization.
- An advisory group consisting of external stakeholder/s.
- If the program is single discipline, there must also be another healthcare provider of a different discipline than the program instructor/s.
- A designated program coordinator responsible for planning, implementing and evaluating the DSME.
- Qualified personnel responsible for the delivery of education.  
(instructional staff: registered dietitian or registered nurse or pharmacist or certified diabetes educator (CDE) or board certified – advanced diabetes management certification (BC-ADM))

C. As a main tool for guiding education, the program will include evidence based curriculum with the following elements:

- Content outline
- Participant learning objectives
- Methods of delivery that is tailored/individualized and involves interaction
- Identified strategies for evaluating participant learning

D. Program Evaluation: There will be an identified process in place for program performance improvement (CQI) based on participant outcomes.

### **Step 2: National Diabetes Certification**

The Joint Commission recognizes hospitals that make extraordinary attempts to increase patient outcomes (Joint Commission, 2015a). One of these recognitions is an Advanced Certification in Inpatient Diabetes. Achievement of an Advanced Certification in Inpatient Diabetes certifies that the hospital's inpatient diabetes education program includes the most current, critical concepts according to the American Diabetes Association (ADA) (Joint Commission, 2015a). An acute care hospital with a nationally recognized distinction in Certified Diabetes Education has many benefits. Aligning hospital policy and procedure with standards of care set forth by the ADA will ensure the highest quality patient care. The process of educating and ensuring adherence to these policies will reduce variation in patient care and reduce risks for errors. Patient care will be assessed by the Joint Commission reviewers every two years, which provides an objective evaluation and opportunity for further improvements in patient care. The certification process also provides an opportunity for the staff to build a loyal and cohesive team. The culture of the staff will transform to one of excellence, as the team is acknowledged for their extraordinary efforts in diabetes management, patient care, and education. Diabetes certification can be promoted in the community, thereby strengthening the view of the community regarding the hospital organizations efforts to provide the highest quality and excellent care. Diabetes certification can also assist in the reimbursement process,

participation in managed care plans, and bidding contract negotiations (Joint Commission, 2014).

In San Joaquin County, there are no hospitals with a distinction in diabetes care. Certification will attract all members in the community with diabetes to receive care at the local community hospital, as well as, those who currently receive care elsewhere, and their care needs are not being met. With available resources for certified diabetes care at, there will be an increase in reimbursement as well as increased efforts of the local community hospital to provide excellent holistic care.

To apply for the Advanced Certification in Inpatient Diabetes from the Joint Commission, the requirements are as follows (Joint Commission, 2015b):

- Review the Disease-Specific Care standards of care set forth by the Joint Commission for inpatient diabetes care and/or hypoglycemia.
- Conduct a self-assessment to reveal which standards are being met and where changes will need to be made.
- A learner assessment of staff will reveal a need for staff training.
- Create new policies and procedures and implement them.
- Apply to the Joint Commission.
- A review will be scheduled.
- Once the review is conducted, there may be some requirements for improvement.
- Once these requirements have been met, the hospital will obtain certification and is ready to publicize their achievement.

The community and the hospital will now be ready to reap the benefits of the organization's efforts for increased quality of patient diabetes care and increase patient quality of life.

A review/survey for recertification from the Joint Commission will occur every two years in order to maintain the recognition by the Joint Commission. Staff will also be required to remain current with diabetes information through review and re-education every two years. Monthly monitoring and audits will occur to ensure proper adherence and evaluation of effectiveness.

### **Funding**

It is estimated that in 2012, the national total cost of diagnosed diabetes management was \$245 billion (American Diabetes Association, 2013). The effects of improved management of diabetes, such as an increase in improved preventative education services, should yield a lower cost to patients and the hospital by reducing costs of life-time complications. Increasing and improving the diabetes education efforts at the local community hospital will not come without the initial cost of implementation.

As introduced before, the outpatient diabetes education program will be accredited by the ADA and be reimbursable under Medicare Part B Covered Diabetic Services (Center for Medicare and Medicaid Services, 2012). Medicare Part B will cover up to 10 hours of initial diabetes self-management training and up to 2 hours each year after the initial training (Medicare, nd).

Plans for funding the inpatient diabetes education program will include working closely with the grant writers employed at the local community hospital. Many grants have been available in the past from the National Diabetes Education Program, the American Association of Diabetes Educators, the American Diabetes Association, and the Centers for Medicare and Medicaid Services. Starting a new inpatient diabetes education program in a community hospital that serves a high-risk population can produce many opportunities for research and publication topics. The American Diabetes Association currently offers a grant that awards up to \$115,000 per year, for a period of three years. This grant is to support basic research relevant to diabetes and its complications (American Diabetes Association, nd). Healthline, supported by the Diabetes Hands Foundation, advertises mini-grants of \$2,000 for non-profit organizations proposing to increase education of diabetes (Healthline, 2015).

There is substantial support to show that the financial benefit of increased quality of healthcare and improved disease management for individuals who receive diabetes education will directly pay for the expenses of the programs (Boren, Fitzner, Panhalkar, & Specker, 2009; Brown & Hanis, 2014; Brownson, Hoerger, Fisher, & Kilpatrick, 2009; Duncan et al., 2009; Duncan et al., 2011; Sullivan, Dalal, & Burke, 2013).

Diabetes will soon become a pandemic that will affect approximately 50% of Americans, regardless of race, ethnicity, age, or social status. Efforts to prevent and better manage this debilitating disease are imperative. Research shows that diabetes

affects minority populations more often than not. However, current available information about diabetes management is not relevant to minority populations and is not mandatorily given to patients during hospital stays. Research also supports culturally sensitive teaching materials increases learning and compliance to new health strategies. Making policy that requires nurses to provide culturally appropriate information should increase compliance and health outcomes.

## CHAPTER 5

### EVALUATION

The first step in building the diabetes education program at the local community hospital will be developing and implementing the outpatient diabetes education program. The second step will be the needs assessment, development, and implementation of the inpatient diabetes education program. Once the outpatient diabetes education program has been implemented, it will need to be evaluated. Evaluation of the outpatient diabetes education program is not only a requirement by the American Diabetes Association (ADA) to maintain recognition, it will also serve as a tool to recognize areas of opportunity to strengthen the effectiveness of the program with patient-centered focus. The Institute for Healthcare Improvement suggests the following questions be answered through an improvement process: What are we trying to accomplish? How do we recognize a change as an improvement? What changes can be made that will result in an improvement? (Institute for Healthcare Improvement, 2015). These questions and more will be answered by following the recommended evaluation set forth by the ADA.

#### **American Diabetes Association Requirements**

According to the ADA standards, there needs to be a detailed process in place for improvement of program performance (American Diabetes Association, 2014a). The process for program improvement must be based on two outcomes of the participants. The first outcome must include participant defined goals, with defined

measure of patient goal attainment; the second goal is a clinical measurement goal set by the healthcare provider. The ADA requires alignment with the National Standards for Diabetes Self-Management Education (NSDME) in order to define and measure patient goal attainment (American Diabetes Association, 2014a). NSDME defines patient goals as self-management-goals set forth by the participant in collaboration with their diabetes educator (Haas et al., 2012). NSDME follows the Outcome Standards for Diabetes Education, distributed by American Association of Diabetes Educators (AADE), which defines behavior change as the priority outcome and is the key indicator of effectiveness of a diabetes education program (Haas et al., 2012). Seven behaviors are highlighted: (1) physical activity, (2) healthy eating, (3) taking medication, (4) monitoring blood glucose, (5) diabetes self-care related problem solving, (6) reducing risks of acute and chronic complications, and (7) psychosocial aspects of living with diabetes. Progress towards goals/changes within these seven key behaviors, as described by the patient, is the evaluation of program effectiveness (Haas et al, 2012). Depending upon the patient's goals' timeline, evaluation of progress will vary. For example, quality of life defined as "no inpatient admissions for a year" could be an outcome measurement, because it has a defined measure of attainment (American Diabetes Association, 2014a). Evaluation, although varying by patient, will be systematic and continuous. This process of evaluation will be completed by the nurse and diabetes educator(s) and the patient being in agreement that the goal was attained.

The second patient outcome for measuring effectiveness of the diabetes education program will be a clinical measurement, such as the patient's HgA1C level, or other metabolic markers (American Diabetes Association, 2014a). Goals for these markers will be set by the patient's primary physician endocrinologist. The diabetes educator will be responsible for reviewing the outcome through access to the hospital's online medical records. This outcome will be systematic and continuous, and observed quarterly. This systematic process is referred to as Continuous Quality Improvement (CQI) process. Patients will have access to this information each time he/she meets with the nurse or diabetes educator.

The ADA has recommended using the Continuous Quality Improvement (CQI) Process (American Diabetes Association, 2014c), to continually enhance diabetes self-management education (DSME), which can lead to improvement in patient outcomes (American Diabetes Association, 2014c). The process of CQI, which will be conducted by the program coordinator, includes identification opportunities for improvement, data collection, and data analysis. It also allows for choosing new or different approaches depending on the data analysis, development of topics and processes for change. Additionally, implementation of the changed processes, data re-collection, and data re-analysis and evaluation of new processes are continued means to assessing the process for improvement (American Diabetes Association, 2014c).

## **Financial Evaluation**

While the primary focus of evaluation is increased patient outcomes, it is important to monitor the program's financial effects. As discussed earlier, research supports cost savings as well as increased patient outcomes. The initial increase of costs, during the implementation of the program, should be offset by increased reimbursement to the hospital, decreased costs associated with a decrease in lengthy hospital stays from manageable diabetes complications, and cost savings from decreased readmissions.

Prior to the program initiation, costs associated with patients seen in the emergency department or admitted to the local community hospital, with a diabetes related diagnosis, will be monitored. The clinical measurements of these patients will be documented to relate an overall change in patient outcomes. After the program initiation, the same factors will be assessed in a systematic and continuous manner to monitor changes.

After initiation of the outpatient diabetes education program, all clients who participate will be asked to sign a consent to have their progress monitored. This data will provide patient specific evaluation. The participants will be interviewed in regard to past urgent care or emergency department visits, as well as inpatient admission history. This history will give an estimated cost prior to treatment and provide analysis for post-education costs of diabetes-related complications. Diabetes will soon become a disease affecting approximately half of all Americans, and a great deal of our residents in San Joaquin County. Diabetes, and it's

debilitating complications, are manageable, even preventable, through improved diabetes education efforts. Diabetes education will be effective in improving our patient outcomes at the local community hospital. Improved patient outcomes not only strengthens the community, but also allows valuable hospital resources to be available for those conditions that can't be managed or prevented. With the above proposal to implement diabetes education, the local community hospital can set new standards in diabetes education and management for San Joaquin County.

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