Understanding Diabetes Health Beliefs and Health Practices in Vietnamese Americans

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UNDERSTANDING DIABETES HEALTH BELIEFS AND HEALTH PRACTICES IN VIETNAMESE AMERICANS

A DISSERTATION

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN NURSING

THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT HOUSTON
CIZIK SCHOOL OF NURSING

BY

LINDA H. SHEEN, MSN, RN, FNP-BC

DECEMBER, 2019
To the Dean for the School of Nursing:

I am submitting a dissertation written by Linda H. Sheen and entitled "Understanding Diabetes Health Beliefs and Health Practices in Vietnamese Americans." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Nursing.

_Signature Committee Chair_  
10/21/2019

We have read this dissertation and recommend its acceptance:

_3_  
10/21/2019

_1_  
10/21/2019

Accepted

Dean for the School of Nursing
Acknowledgements

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Last but not least, I would like to thank the Vietnamese community and participants in the study. Without their support, this study would not have happened. I am so grateful for their willingness to openly discuss their health and health practices with me. Not only did they help me complete my doctoral studies but deepen my understanding of my own culture.
Abstract

Understanding Diabetes Health Beliefs and Health Practices in Vietnamese Americans

By

Linda H. Sheen, PhD(c), MSN, RN, FNP-BC

December 2019

Background: Diabetes related complications resulting in mortality and morbidity are higher among Vietnamese individuals living in the U.S. with diabetes. Few studies have examined the personal perceptions and cultural beliefs pertaining to disease management. An in-depth understanding of perception and cultural beliefs in regard to diabetes self-management is needed for the development of culturally appropriate interventions in this population.

Purpose: Two specific aims were explored: 1) To explore how Vietnamese individuals living in the U.S. with prediabetes and diabetes conceptualize diabetes self-management and; 2) to understand how Vietnamese individuals living in the U.S. with prediabetes and diabetes integrate the cultural construct of treatment for diabetes self-management.

Method: The design was a medically focused ethnography with a sample size of 21 participants. Participant observations and semi-structured interviews were conducted to attain the specific aims. Data was analyzed using Spradley’s four levels of ethnographic approach.

Results: Participants were found to integrate Eastern and Western belief practices into diabetes self-management. The individual’s cultural beliefs, perception of disease, healthcare experiences, treatment and sources of diabetes information were found to affect diabetes self-management. Additionally, participants utilized many different
sources, such as community health fairs, YouTube, and medical providers to acquire knowledge of the disease process.

**Conclusion:** The results of the study revealed the importance of understanding how Vietnamese Americans integrate both Eastern and Western perspectives into diabetes self-management. This understanding will help healthcare providers improve and manage diabetes disease through the development of culturally appropriate interventions that will reduce the short term and long term complications of diabetes in Vietnamese Americans.

**Keywords:** Vietnamese Americans, diabetes, diabetes self-management
# Table of Contents

**APPROVAL PAGE** ........................................................................................................... ii

**ACKNOWLEDGMENTS** .................................................................................................... iii

**ABSTRACT** ......................................................................................................................... v

**SUMMARY OF STUDY** ....................................................................................................... 1

**PROPOSAL** ......................................................................................................................... 3

**MANUSCRIPT** .................................................................................................................... 22

  Background and Significance .......................................................................................... 22

  Methods .......................................................................................................................... 26

  Findings .......................................................................................................................... 37

  Model Development ...................................................................................................... 51

  Discussions .................................................................................................................... 52

  Implications for Research and Practice ......................................................................... 56

  Limitations ....................................................................................................................... 57

  Conclusion ....................................................................................................................... 58

  Sample Demographics ................................................................................................. 63

  Diabetes Experience Model ......................................................................................... 65

  Interview Guide .............................................................................................................. 66

**APPENDIXES**

  A  UTHSC CPHS Approval Letters ................................................................................. 68

  B  Informed Consent ........................................................................................................ 73

  C  Recruitment Flyer ........................................................................................................ 75
Summary of Study

Vietnamese Americans are more susceptible to developing type 2 diabetes mellitus when compared to non-Hispanic Whites (Jih et al., 2014). Additionally, diabetes related complications were found to be greater in this population as a result of poor diabetes self-management (Nguyen et al., 2014). Currently, few studies have explored diabetes self-management in regards to health beliefs and health practices among Vietnamese Americans. Understanding of perception and cultural beliefs in regard to diabetes self-management are needed for the development of culturally appropriate interventions in this population.

The proposal entitled, “Understanding Diabetes Health Beliefs and Health Practices in Vietnamese Americans,” was a medically focused ethnography study used to explore health beliefs and health practices regarding diabetes self-management. An in-depth exploration of the topic was achieved by using participant observations and Spradley’s (1979) method of ethnographic inquiry. The study was approved by the Committee for Protection of Human Subjects (CPHS) at the University of Texas Health Science Center at Houston’s Institutional Review Board (Appendix A).

One change was made to the data collection section of the proposal. Face-to-face interviews were initially planned; however, many potential participants had requested to have the interviews conducted over the telephone. Potential participants expressed interest in the study but were uncomfortable with meeting face to face. Due to this emerging information and with IRB approval, telephone interviews were added to the data collection methods.
The following page is the study proposal which provides of background and significance information on diabetes self-management in the population, specific aims, and proposed methods. Following the study proposal is the manuscript. The manuscript contains the study findings and the discussions of those findings. Supplemental information including interview guide, demographic information form, and the flyer used for recruitment can be found in Appendices A-C.
Proposal

Specific Aims

Diabetes have been identified and recognized as a health disparity among Asian Americans (White House Initiative, 2014). The Vietnamese population in the U.S. have greater propensity for developing diabetes when compared to non-Hispanic Whites (NHW). Diabetes related complications resulting in mortality and morbidity are also higher in this population (Center for Disease Control and Prevention, 2015; Nguyen et al., 2014). Complications have been associated with poor diabetes self-management; however, few studies have examined the personal perceptions and cultural beliefs pertaining to disease management (Do, Hutchinson, Mai & VanLandigham, 2010). Culturally appropriate interventions are needed in this population to enhance and manage diabetes self-management in order to prevent the short and long term complications of this disease.

Although limited, previous studies have identified contributing factors to poor disease management in this population. These factors were related to medication adherence, disease management misconceptions, underutilization of healthcare services, and preferences for complementary and herbal medicines (Do et al., 2010; Nguyen et al., 2014). However, an in-depth understanding of how diabetes self-management is influenced by health beliefs have not been fully explored. Health beliefs can influence health practices and overall affect diabetes management per individual (Kleinman, 1981).

This understanding is critical since diabetes self-management consists of many self-activities such as dietary and lifestyle modifications, prescription regimes, and
glucose monitoring (Center for Disease Control and Prevention, 2017). Health beliefs and health practices are important to understand in order to improve diabetes self-management in this population. This understanding can overall decrease the burden of diabetes in the U.S. and prevent long term complications. The estimated burden of the disease among this population may be difficult to quantify due to the aggregation of Asian subgroups nationally (Staimez et al., 2013). This may be problematic considering diabetes associated expenditures is expected to increase to $336 billion in the U.S. (Nguyen et al., 2015).

The overall objective of this application is to bridge the gap of understanding diabetes self-management in the Vietnamese population living in the U.S. To attain the overall objective, the following specific aims will be pursued:

Aim 1: To explore how Vietnamese individuals living in the U.S. with diabetes conceptualize diabetes self-management.

Aim 2: To understand how Vietnamese individuals living in the U.S. with diabetes integrate the cultural construct of treatment for diabetes self-management.

With the completion of the proposed study, the expected outcome is to have an in-depth understanding of how diabetes self-management is influenced by personal perceptions and cultural beliefs in this population. These results will have a positive impact by improving diabetes self-management and reducing diabetes disease burden in the United States.
Significance and Innovation

In the U.S., 1 in 4 Americans are at risk for developing type 2 diabetes. Among the Asian American population, this rate is considerably higher; 1 in 2 Asians are at risk for developing the disease (Centers for Disease Control & Prevention, 2016). Vietnamese Americans are more susceptible to developing diabetes at a younger age and with lower body mass indexes when compared to non-Hispanic Whites (Jih et al., 2014). Additionally, this population is more likely to suffer from diabetes related complications resulting in mortality and morbidity due to poor diabetes self-management (Centers for Disease Control and Prevention, 2015; Nguyen et al., 2014).

Current literature regarding diabetes self-management in Vietnamese Americans is limited to population studies. These studies have reported poor adherence to diabetes self-management regimen such as dietary and lifestyle modifications, glucose self-monitoring, and noncompliance with antidiabetic treatments as contributing factors (Nguyen, 2014). It has been reported that Vietnamese Americans were more likely to hold onto cultural values from the country of origin while integrating American culture (Nguyen et al., 2014; Truong et al., 2011).

In addition, health beliefs and health practices were shown to be essential components to understanding diabetes self-management in this population (Nguyen, 2014). For example, Vietnamese Americans attribute diabetes as an imbalance of hot and cold within the body (Mull, Nguyen & Mull, 2001). The use of herbals and foods for medicinal purposes was the preferred treatment in correcting imbalances within the body. Western antidiabetic treatments were considered as having hot properties and were used only for treatment of acute episodes of hyperglycemia (Mull et al., 2011). Additionally,
reliance on symptom experience related to hot and cold, as opposed to glucose monitoring was used to determine glucose levels (Nguyen, 2014).

Dietary restrictions that limit white rice consumption have been reported as being the most difficult diabetes self-management regimen to adhere to (Nguyen, 2014). Vietnamese Americans were more likely to substitute white rice with rice products such as noodles; rice noodles were believed to have a lower glycemic index. Currently, no studies have examined physical activity in this population.

Although these previous studies provided further insight into the population, there were limitations to these studies. Majority of these studies explored diabetes self-management among Asian Americans either as an aggregated group or by subgroups; however, Vietnamese Americans have been underrepresented in the sample (August, Dowell, & Sorkin, 2017). Due to the lack of a representative sample in these previous studies, thus affecting the generalizability of the results to this population.

Understanding diabetes self-management in this population is significant since diabetes is a multifactorial disease. Diabetes self-management involves a wide gamete of self-activities such as dietary and lifestyle modification, prescription regimens, and glucose monitoring (Centers for Disease Control & Prevention, 2017). It is important to understand how factors such as culture, migration history, and the acculturation process can affect an individual’s perception to disease management in this population (Do et al., 2010; Nguyen, 2014; Truong et al., 2011). Additionally, understanding how the individual integrate the cultural construct of treatment for diabetes self-management is important to understand in order to improve diabetes self-management in this population.
Currently, health beliefs and health practices in regards to disease management have not been well studied in a large Vietnamese population. The Houston metropolitan area holds the third largest Vietnamese population living in the U.S.; Houston remains one of the largest settlement sites for Vietnamese immigrants with large ethnic enclaves (U.S. Census Bureau, 2012). This study will capture the perspectives from recent migrants as well as more acculturated Vietnamese Americans.

The contributions from this study are expected to elucidate how diabetes self-management is influenced by personal perception and cultural beliefs in the Vietnamese American population. These contributions will be significant to the development of culturally appropriate intervention to enhance and manage diabetes self-management. Furthermore, the overall goal of this study is to prevent the short and long-term complications of diabetes in this population.

The innovation of this study is to provide an in-depth understanding of perception and cultural beliefs in regard to diabetes self-management. Additionally, the researcher is able to speak both Vietnamese and English; therefore, the researcher will be able to understand local customs and detect nonverbal cues or cultural and linguistic phrases that may convey different meanings. Being familiarized with Vietnamese language and culture may encourage participants to speak (Green & Thorogood, 2004).

Additionally, only a few studies have examined diabetes among Vietnamese Americans. Of those studies, in-depth exploration of diabetes self-management was not well explored. For instance, foods were found to have medicinal purposes in the treatment of diabetes (Mull et al., 2011). However, specifics on how foods were prepared and consumed were not specified. In order to reduce diabetes related complications in
this population, there is a need to close the gap of knowledge through the understanding of specific diabetes self-management activities in this population. The overall goal is to shift views of how to incorporate more culturally aligned methods of diabetes treatment in this population. This understanding can be incorporated into current treatments that will overall reduce the short and long-term complications of diabetes in Vietnamese Americans.

**Conceptual Framework**

The social ecological model can be used as a framework to understand the interaction between the individual, social, cultural and environmental factors that may influence diabetes self-management in Vietnamese Americans. Interactions between the individual and environmental factors from the social system can promote behavior that can impact health outcomes (Golden & Earp, 2012). The model has been used to examine the influence of physical activity and socioeconomic status on diabetes outcomes in Asians (Pei, Wang, Sun & Zhang, 2016).

The model composes of five levels: intrapersonal, interpersonal, organizational, community and public policy. In the social ecological model, the individual is located at the center and surrounding the individual are circles that gradually extend further away from the individual. Each of the circles that gradually extends from the individual represents the different levels that will be discussed below. This model was primarily selected due to the permeability of interactions between each level within the model; therefore, one level can have influence upon other levels (Glanz, Rimer & Viswanath, 2008).
The intrapersonal level consists of the individual characteristics, which includes attitudes and beliefs that might increase the risk for the disease or behavior (McLeroy, Bibeau, Steckler & Glanz, 1998; U.S. Department of Health and Human Services, 2005). Within this level, factors can include gender, generational status, and levels of acculturation that may affect health practices (McElroy & Jezewski, 2000).

The interpersonal, organizational, community and public policy levels are composed of factors that might affect the individual. Within the interpersonal level, interactions between the individual and the immediate environment can affect health practices. These interactions can be with peers, partners or family members (Glanz, Rimer & Viswanath, 2008). The organizational level consists of policies, regulations and informal structures, such as community centers, churches, and temples. Community factors are the next level after organizational, which includes social norms and networks from the individual’s neighborhood. The public policy level is the furthest level from the individual level. This level includes policies and laws that regulate the individual’s health (U.S. Department of Health and Human Services, 2005).

Diabetes is a multifactorial disease and therefore, management of diabetes is complex in nature. The social ecological model can help display the complexity of the interrelationship between the individual and factors that contribute to diabetes self-management in this population. For instance, a Vietnamese individual with diabetes can choose a more Eastern approach to treatment if the individual resides within a cultural enclave as opposed to suburban areas (Bankston, 2010). Additionally, other factors such as cost of medication or lack of insurance could lead this individual towards more Eastern methods of healing.
Research Design. This study will be guided by a medically focused ethnographic approach. An ethnographic design allows the researcher to understand the perspectives of the individual within a cultural context and how it relates to a disease process (Spradley, 1979). Additionally, ethnographies can extract detailed information on health beliefs and healing systems and has been used as a “gold standard” in health research (Green & Thorogood, 2010). This approach is appropriate in gaining knowledge of how diabetes self-management is influenced by personal perceptions and cultural beliefs in this population.

The researcher will have an overt role and disclose the purpose of the researcher’s presence to the participants. The researcher is fluent in the Vietnamese language and has had prior experiences as a volunteer in previous health fairs in the Vietnamese community.

Observations by the researcher will be initiated first at community health fairs. The purpose of the observation is to understand the interactions between participants and healthcare providers who volunteer at the health fairs. Field notes will be kept during observations. There will be emphasis on the health-related questions that are asked by participants and the responses from the health care providers. Additionally, if food is provided at the fairs, an observation on dietary habits and food selections will be noted. Possible recruitment of participants may occur at the health fair for the second part of the study that involves one-on-one interviews.

Sample and Setting. Purposive and snowball sampling will be used to select participants from several community locations in an ethnically dense Vietnamese American population in Houston, TX. Community settings may include: primary care offices,
community health fairs, churches and temples that serve large numbers of the Vietnamese American population.

Purposive sampling was selected as the main sampling strategy in order to gain a rich source of information on the topic at hand (Crabtree & Miller, 1999). With purposive sampling, the researcher is able to select participants to ensure a representative sample based upon the objectives of the study (Green & Thorogood, 2010). Snowball sampling was selected to subsidze as a sampling strategy to help obtain saturation (Crabtree & Miller, 1999). This method allows participants to refer or recommend potential participants to help achieve the research aims. Participants’ names will be kept confidential.

The sample size for a medically focused ethnography cannot be predicted. However, in other qualitative descriptive or focused ethnographies, redundancy and saturation occurs with in-depth interviews around 15-30 informants (Green & Thorogood, 2010). Based on a similar prior study, redundancy was achieved around 23 informants (Nguyen, 2014). Therefore, for this study, it is anticipated that informational redundancy and data saturation will be reached between 25-30 participants. It is estimated that study completion will take 6-9 months.

Inclusion criteria for participant selection:

a) Self-identification of Vietnamese ethnicity

b) Adults >18 years and older

c) Able to read, write and speak English or Vietnamese

d) Diagnosis of type 2 diabetes mellitus
Recruitment

Recruitment procedures will include on site recruitment, flyers and referrals from key informants and study participants. Key informants will be located and interviewed for possible recruitment sites and identification of possible participants. Flyers will be displayed at the recruitment sites and will have the researcher’s contact information. Flyers will be in both English and Vietnamese. Participants can contact the researcher to set up a time to meet for the interview. Permission will be obtained from health fair coordinators and recruitment sites prior to posting of flyers.

Multiple interviews at different community sites, dates and times will occur to increase study participation. Scheduled interviews may coincide with the community health fairs. During the community events, participants will have the option of participating in the interview after signing consent or to schedule another time to meet at the community site for an interview.

Data Collection Procedure. Inclusion criteria will be reviewed for each potential participant carefully before proceeding. Prior to conducting the interview, the researcher will review the informed consent with the participant. Consent forms will be in both English and Vietnamese.

A semi-structured, 30-45 minutes, one-on-one interview will be conducted by the researcher. Interviews will be conducted in English or Vietnamese. Before the interviews begin, the researcher will remind the participants of the objectives and purpose of the study. Interviews will be conducted in a designated private room at the community location. Interviews will be audio recorded using a digital recorder for transcription. The
researcher will record field notes and document inflections, tones, body language and nonverbal cues that may convey different meanings.

Open-ended questions will be designed to gain an in-depth understanding of how diabetes self-management is influenced by personal perception and cultural beliefs in the Vietnamese population. Repeated interviews with participants may occur due to the emergent nature of this research. Therefore, additional probes may be added to the interview guide when additional information comes forth.

Demographic information pertaining but not limited to age, gender, birthplace, years of residence in the U.S., duration of diabetes disease, diabetes treatment regimen and insurance status will be collected at the end of the interview.

Participants will be compensated $20 after the completion of the interview.

Data Collection Methods. Interview guides will be created and may be reviewed by key informants for feedback for additional probes. Questions will be piloted with test subjects before execution in the community setting. Questions will be refined based upon the trial sessions with test subjects.

Underpinnings for the interview questions were based upon the health beliefs and health practices that were reported in the literature. A sample of the type of grand tour questions and probes are provided below. Questions and probes are subject to change as additional information comes forth in subsequent interviews. Interviews will be audio recorded for transcription.
The following interview guide was developed to answer the following research questions: How do Vietnamese diabetics living in the United States conceptualize type 2 diabetes?

How do Vietnamese living in the U.S. with diabetes integrate the cultural construct of treatment for diabetes self-management?

**Interview Guide.**

Grand Tour: What have you heard about diabetes?

1. Probe: Where do you get the information about diabetes?
2. Probe: What do you think caused people to have diabetes?
3. Probe: Have you heard of imbalances (hot/cold) causing diabetes?

Grand Tour: What are things you heard about diabetes treatment?

1. Probe: What are some things you think you should do to take care of your diabetes?
2. Probe: What are some food or herbals that you heard of that can help manage diabetes?
3. Probe: What are things you heard about exercise and health? Do you think exercise can help manage diabetes?

Grand Tour: What are things you do to take care of your diabetes?

1. Probe: How has diabetes changed the way you eat?
2. Probe: What type of exercise are you currently doing to help manage your diabetes?
3. Probe: What has been the hardest aspect of diabetes self-management?
**Data Analysis Plan.** Data transcription will be performed by the researcher. Transcriptions will be translated into English by the researcher. The researcher will validate the transcriptions against the taped recordings of the interviews. Input of field notes and interview transcription will be converted into a software managing system, Atlas ti, and will be completed by the researcher. Data will be coded and organized using Atlas ti.

Data analysis will be guided by using Spradley’s (1979) four levels of ethnographic analysis: domain analysis, taxonomic analysis, componential analysis and theme analysis. Domain analysis will occur after the collection of interview data using descriptive questions. During this process of analysis, larger units of cultural knowledge and semantic relationships will be identified. Structural questions will be developed based upon the domain analysis; these questions will verify the domains with the inclusion of folk terms (Spradley, 1979).

Taxonomic analysis will occur after the collection of interview data using structural questions. The purpose of this analysis is to examine the internal structures of each domain that was derived from the domain analysis. Contrasting questions will be derived based upon this analysis (Spradley, 1979).

Componential analysis will occur after data collection from interviews using structural questions. The purpose of this analysis is to identify contrasting attributes among symbols in the domain (Spradley, 1979).

Thematic analysis is the final step in which the researcher will examine the relationships between the identified domains with the whole (Spradley, 1979). After
establishing themes, the results will be audited using personal field notes taken during
data collection at the three phases of interviewing. Additionally, periodic debriefing with
committee members will occur. It is also important to note that ongoing data analysis
using the four steps will occur with ongoing data collection to explore areas of culture
that is relevant to the research aims.

**Trustworthiness of the study.** Consultation and debriefing with the researcher’s
dissertation committee will occur throughout the data analysis process to validate
findings. Triangulation will occur using the raw interview data, field notes and
observational data.

**Limitations of the Study.** The limitations of the study may arise from sampling.
Although purposive sampling is ideal; however, the use of key informants or gate keepers
may affect the representativeness of the sample. If the key informants suggest a
community site that is not representative of the entire culture, there must be careful
considerations when drawing inferences from the data. Additionally, the inability to
recruit enough participants is a concern. In order to address this pitfall, additional
recruitment in other Vietnamese dense communities located in zip code such as 77061
and 77086 can occur. However, the additional recruitment areas are not limited to the zip
codes listed above.

**Risk and Benefits to Participants.** Informed consent will be given to the participants
prior to conducting the interview. Participants are informed that at any point in time,
refusal to participate in the interview process will be honored by the researcher. The loss
of confidentiality may be a concern. In order to minimize this risk, information will be
stored in a double locked cabinet at the UTHealth School of Nursing in office 684. Only
the researcher will have access to the locked cabinet. All participant identification information will be removed. Audio recordings will be destroyed after completion of the study.

The potential knowledge that will be gathered from the interviews will benefit the population as a whole in understanding diabetes self-management in this population. The overall goal of this research proposal is to develop culturally appropriate interventions that can improve diabetes self-management and reduce the short and long-term complications of diabetes in this population.
Sample of Demographic Form

Age: ________________

Gender (circle): Male Female

Marital status (circle): Single Married Divorced Widowed

Birthplace (circle): Vietnam United States Other: ________________
How many years have you lived in the U.S.: ____________

Duration of diabetes disease (years): ________________

Type of diabetes treatment (circle): Oral Injectable/Insulin Herbals/Medicinal Foods Other: ________________

Highest level of education (circle): Elementary Middle School High School College

Insurance (circle): Yes No

Religion: ________________

Language Preference (circle): Vietnamese English Other: ____________
References


Pei, L., Wang, Y., Sun, C.Y. & Zhang, Q. (2016). Individual, social and


Understanding Diabetes Health Beliefs and Health Practices in Vietnamese Americans

Linda Sheen, MSN, RN, FNP-BC

Background and Significance

In the U.S., 1 in 4 Americans are at risk for developing type 2 diabetes. Among the Asian American population, this rate is considerably higher; 1 in 2 Asians are at risk for developing the disease (Centers for Disease Control & Prevention, 2016). Vietnamese Americans are more susceptible to developing diabetes at a younger age and with lower body mass indexes when compared to non-Hispanic Whites (Jih et al., 2014). Additionally, this population is more likely to suffer from diabetes related complications resulting in mortality and morbidity due to poor diabetes self-management (Centers for Disease Control and Prevention, 2015; Nguyen et al., 2014).

Current literature regarding diabetes self-management in Vietnamese Americans is limited to population studies. These studies have reported poor adherence to diabetes self-management regimen such as dietary and lifestyle modifications, glucose self-monitoring, and noncompliance with antidiabetic treatments as contributing factors (Nguyen, 2014). It has been reported that Vietnamese Americans were more likely to hold onto cultural values from the country of origin while integrating American culture (Nguyen et al., 2014; Truong et al., 2011).

In addition, health beliefs and health practices were shown to be essential components to understanding diabetes self-management in this population (Nguyen, 2014). For example, Vietnamese Americans attributed diabetes as an imbalance of hot and cold within the body (Mull et al., 2001). The use of herbals and foods for medicinal
purposes was the preferred treatment in correcting imbalances within the body. Western antidiabetic treatments were considered as having hot properties and were used only for treatment of acute episodes of hyperglycemia (Mull et al., 2001). Additionally, reliance on symptom experience related to hot and cold, as opposed to blood glucose monitoring, was used to determine glucose levels (Nguyen, 2014).

Dietary restrictions that limit white rice consumption have been reported as being the most difficult diabetes self-management regimen to adhere to (Nguyen, 2014). Vietnamese Americans were more likely to substitute white rice with rice products such as noodles; rice noodles were believed to have a lower glycemic index. Currently, no studies have examined physical activity in this population.

Although these previous studies provided further insight into the population, there were limitations to these studies. A majority of these studies explored diabetes self-management among Asian Americans either as an aggregated group or by subgroups; however, Vietnamese Americans have been underrepresented in the sample (August et al., 2017). Therefore, the lack of a representative sample in these previous studies can affect the generalizability of the results to this population.

Understanding diabetes self-management in this population is significant as diabetes is a multifactorial disease. Diabetes self-management involves a wide gamete of self-activities such as dietary and lifestyle modification, prescription regimens, and glucose monitoring (Centers for Disease Control & Prevention, 2017). It is important to understand how factors such as culture, migration history, and the acculturation process can affect an individual’s perception to disease management in this population (Do et al., 2010; Nguyen, 2014; Truong et al., 2011).
Currently, health beliefs and health practices in regards to disease management have not been well studied in a large Vietnamese population. The Houston metropolitan area holds the third largest Vietnamese population living in the U.S.; Houston remains one of the largest settlement sites for Vietnamese immigrants with large ethnic enclaves (U.S. Census Bureau, 2012). This study could capture the perspectives from recent migrants as well as more acculturated Vietnamese Americans.

It is important to understand the cultural construct of treatment, or the perspective of the individual and how culture may affect disease management in cases of diabetes. Diabetes self-management among Vietnamese Americans has not been well studied; therefore, contributions from this study can elucidate cultural perceptions and beliefs and help tailor culturally appropriate interventions in this population.

Additionally, only a few studies have examined diabetes among Vietnamese Americans. Of those studies, in-depth exploration of diabetes self-management was not well explored. For instance, foods were found to have medicinal purposes in the treatment of diabetes (Mull et al., 2001). However, specifics on how foods were prepared and consumed were not specified. In order to reduce diabetes related complications in this population, there is a need to close the gap of knowledge through the understanding of specific diabetes self-management activities in this population. The overall goal is to shift views of how to incorporate more culturally aligned methods of diabetes treatment in this population. This understanding can be incorporated into current treatments that will overall reduce the short and long-term complications of diabetes in Vietnamese Americans.
The overall objective of this study was to bridge the gap of understanding diabetes self-management in the Vietnamese American population. Two specific aims were pursued: 1) to explore how Vietnamese Americans with diabetes conceptualize diabetes self-management and; 2) to understand how Vietnamese Americans with diabetes integrate the cultural construct of treatment for diabetes self-management.

Conceptual Framework

The social ecological model has been used in ethnographic studies to understand the influence of social cultural positions on the individual and various levels of culture. In this study, the model was used as a framework to understand the interactions between the individual, social, cultural and environmental factors that may influence diabetes self-management in Vietnamese Americans. These interactions aid the understanding of how individuals incorporate each level into their own personal beliefs and behaviors.

Interactions between the individual and environmental factors from the social system can promote behavior that can impact health outcomes (Golden & Earp, 2012). The model has been used to examine the influence of physical activity and socioeconomic status on diabetes outcomes in Asians (Pei et al., 2016).

The model consists of five levels: intrapersonal, interpersonal, organizational, community and public policy. In the social ecological model, the individual is located at the center and surrounding the individual are circles that gradually extend further away from the individual. Each of the circles that gradually extends from the individual represents the different levels that will be discussed below. This model was primarily selected due to the permeability of interactions between each level within the model; therefore, one level can have influence upon other levels (Glantz et al., 2008).
The intrapersonal level consists of the individual characteristics, which includes attitudes and beliefs that might increase the risk for the disease or behavior (McLeroy et al., 1988; U.S. Department of Health and Human Services, 2005). Within this level, factors can include gender, generational status, and levels of acculturation that may affect health practices (McElroy & Jezewski, 2000).

The interpersonal, organizational, community and public policy levels are composed of factors that might affect the individual. Within the interpersonal level, interactions between the individual and the immediate environment can affect health practices. These interactions can be with peers, partners or family members (Glanz et al., 2008). The organizational level consists of policies, regulations and informal structures, such as community centers, churches, and temples. Community factors are the next level after organizational, which includes social norms and networks from the individual’s neighborhood. The public policy level is the furthest level from the individual level. This level includes policies and laws that regulate the individual’s health (U.S. Department of Health and Human Services, 2005).

Methods

Design.

This study was guided by a medically focused ethnographic approach using participant observations and Spradley’s (1979) method of ethnographic inquiry. An ethnographic approach was selected for this study for two reasons: to allow the researcher to learn about human culture from the perspective of individuals within that culture (Spradley, 1979, pp.10) and naturistic designs are appropriate when very little is known about a phenomenon (Sandelowski, Davis & Harris, 1989).
Participant observations allowed for the researcher to observe behavior that may not necessarily arise in interviews (Crabtree & Miller, 1999, pp. 48). These interactions between the participants and healthcare providers helped the researcher understand various behaviors and behavioral effects on diabetes self-management. Participant observations occurred throughout the study.

According to Spradley (1979), ethnographic interviews may be powerful tools to discovering cultural knowledge that surrounds diabetes self-management in this population. Interviews encouraged informants to elicit information about their culture while simultaneously fostering rapport (Spradley, 1979, pp. 78).

Steps in conducting the ethnographic inquiry were: (a) locate informants, (b) interview the informants, (c) create ethnographic records, (d) ask descriptive questions, (e) analyze ethnographic interviews, (f) create a domain analysis, (g) ask structural questions, (h) create a taxonomic analysis, (i) ask contrast questions, (j) create a componential analysis, (k) discover cultural themes, and (l) write an ethnography (Spradley, 1979, pp.217-222).

**Sample and setting.**

Participant recruitment began with the identification of gatekeepers within the community. Gatekeepers assisted with participant recruitment through scheduling of health fairs, recruitment sites and distribution of flyers. The four gatekeepers consisted of two healthcare providers and two members of the Vietnamese organizations in the community. Gatekeepers were interviewed for their insight and experience with the population and diabetes health beliefs and health practices.
Purposive and snowball sampling were used to recruit participants from health fairs, community organizations and medical offices located in Houston, Texas. Recruitment procedures included on-site recruitment during health fairs, referrals from key informants and display of flyers at community centers and medical offices. Flyers contained the study information and the researcher’s contact information. Additionally, recruitment occurred on the social media site Facebook. Flyers were posted on various online Houston Vietnamese groups. Sampling continued until information redundancy occurred. A total of 25 individuals were approached for the study.

Purposive sampling was selected as the primary sampling strategy. This sampling methodology allowed the researcher to purposefully select participants based on the objectives of the study (Green & Thorogood, 2010). Purposive sampling provided assurance that respondents reflected a representative sample that would provide abundant information on diabetes self-management practices (Crabtree & Miller, 1999).

Snowball sampling was selected as the secondary sampling method for this study. Snowball sampling was used to help subsidize purposive sampling through the use of referrals and recommendations from recruited informants within the study. Through this process, potential participants were identified through the referrals in order to help with data saturation (Crabtree & Miller, 1999). Informants were asked for potential referrals at the end of each interview. The researcher requested each participant to provide the researcher’s contact information to potential participants.

Participant selection was based on the following inclusion criteria: a) self-identification of Vietnamese ethnicity; b) age of 18 years or older; c) ability to write,
read, and speak English or Vietnamese; and d) self-disclosure of type 2 diabetes mellitus diagnosis.

**Data collection.**

*Development of interview questions.*

*Descriptive questions.*

Descriptive questions were aimed at understanding the cultural language of the informant (Spradley, 1979, pp. 85). Descriptive questions were useful in encouraging informants to talk freely about diabetes management; they can be used to enhance the building of rapport between the researcher and the informant (Spradley, 1979, pp. 78). Three descriptive questions with additional probes were developed to understand diabetes self-management in Vietnamese Americans living with diabetes (See Appendix A).

Pre-existing cultural beliefs and prior knowledge about diabetes were incorporated in the first grand tour question. Probes explored the etiology of the disease and included previous literature findings that linked imbalances within the body to disease development. Consideration of this aspect was significant since it might be the foundation of an individual’s treatment choice. For example, questions related to diabetes knowledge were started with, “What have you heard about diabetes?”

Knowledge of diabetes treatment was explored in the second grand tour question. Probes inquired about preferential treatment and cultural practices, such as the use of herbals and medicinal foods. Questions on specific herbals and medicinal foods were derived from previous literature findings.

The third grand tour question focused on the individual’s diabetes self-management. Aspects of diabetes self-care were gathered from the American Diabetes
Association (n.d.). Probes pertained to medication, exercise, dietary changes, blood glucose self-monitoring, foot care and eyecare.

Feedback from community leaders, including healthcare professionals, fieldwork and previous reported literature findings were considered for the development of the interview guide (Appendix A). The interview guide was used with each interview to ensure the grand tour questions were covered. Interviews were conducted in a conversational manner to build rapport and the fluidity of participants’ responses. Additional questions and probes were added as additional information arose from subsequent interviews.

**Structural questions.**

Structural questions were formulated after the completion of the domain analysis. In contrast to descriptive questions, the researcher formulated structural questions to adapt to each informant (Spradley, 1979, pp. 120). Structural questions were aimed to complement descriptive questions to elicit folk terms and explanations about the domains of cultural knowledge (Spradley, 1979, pp.123).

Folk terms or folk names refers to how the informants refer to diabetes self-management practices. For example, when the researcher asked the participants to describe practices to help manage diabetes, informants would refer to the restriction of cơm, or rice. An example of a structural questions pertaining to rice is: “What are the different kinds of cơm or rice you can eat when you have diabetes?” or “how do you restrict your cơm or rice intake?”
Contrast questions.

Contrast questions were developed after the completion of taxonomic analysis (Spradley, 1979, pp. 157). The principle of contrast questions is to understand the meaning of folk terms through the distinction from other folk terms. Through these questions, participants would differentiate what the folk terms do and do not mean (Spradley, 1979, pp. 158). For example, participants referred dược thảo or herbals as taking supplements. However, informants did not consider eating herbs or foods that were believed to lower blood sugar as dược thảo.

Semi-structured interviews.

Participants were only asked descriptive questions in the first eight interviews. Responses were collected and analyzed in the first portion of data analysis. Once information redundancy was achieved, participants were selected to be interviewed at any stage of the ethnographic inquiry. Recommended by Spradley (1979), interviews could be conducted concurrently, as long as the participants were knowledgeable about the topic of interest (pp. 121). Participants were asked both descriptive and structural questions once information redundancy was reached. These questions were asked with all participants beginning with the ninth interview. As a result of incorporating descriptive and structural questions simultaneously, participants were able to divulge more information due to a reduction of boredom and tediousness of questions asked (Spradley, 1979, pp. 124). Contrast questions were included in interviews around the time of the fifteenth interview. Contrast questions helped validate previous findings.

Semistructured interviews were conducted in three stages: (a) descriptive questions, (b) structural questions, and (c) contrast questions (Spradley, 1979 pp.217-
Consent was obtained prior to starting the interview process, and each informant was reminded by the researcher of the objectives and purpose of the study.

Face-to-face interviews in public spaces were initially planned by the researcher; however, many informants were hesitant to meet in person and requested to be interviewed via phone. Informants reported that phone interviews were more convenient. One individual, who refused to participate was skeptical of the researcher’s intentions. The individual’s personal information was used to enroll in various programs by previous researchers in the community without the individual’s consent. Due to this emerging information and with IRB approval, the researcher accepted interviews to be conducted over the phone. Additionally, verbal consent was collected on informants who were uncomfortable with written consent. Eleven of the 21 interviews were conducted over the phone.

The remainder of interviews were conducted face-to-face at a public setting such as a private room at a community center. Both telephone and face-to-face interviews lasted approximately 30-45 minutes and were conducted one-on-one in English or Vietnamese. Only two out of the 21 informants requested interviews to be conducted in English. Interviews were recorded using a tape recorder. Participants were compensated $20 for their time. Reimbursement was given at the end of each interview.

**Participant observation.**

Field work was collected at two separate pre-scheduled health fairs that were housed in a primary care office located in the community. Both health fairs were organized by a pharmacist who was familiar with the diabetic Vietnamese American community. Blood glucose testing was offered to participants at no cost at both health
fairs. Under the guidance of the organizing pharmacist, pharmacy students performed the test and interpreted the results. Participants with abnormal results were encouraged to speak to their healthcare providers for follow-up care. Free glucometers were provided to those who were interested in performing self-monitoring at home. Participants were encouraged to attend two presentations presented by two pharmacists in addition to blood glucose testing.

Many of the participants who were identified with abnormal results from both of the fairs attended the presentations. Approximately 20-30 participants attended each presentation, which lasted between 45-60 minutes. Presentation topics were focused on the etiology of diabetes, diabetes treatments and self-management. Each presentation had a question and answer segment, which occurred at the end of each presentation.

Interactions were not made with participants during the fair; the researcher was a complete observer at the first health fair. Field notes were collected to help generate additional interview questions and were combined with interview data for analysis. The researcher observed the participants upon arrival to the clinic and followed the participants’ movements during the fair. New information emerged regarding compliance with Western medications from observations. Many participants inquired if Western medications could cure the disease. For example, participants wondered if diabetes medications could be discontinued once blood glucose returned to normal levels. Participants were observed to compare their individual treatments with each other and verified if the treatment was appropriate with the speakers. Probes were created by using the emergent information that was added to the interview guide.
As the first fair concluded, the organizer invited the researcher as a guest speaker to give a presentation that focused on nutrition and strategies to manage dietary intake with diabetes. Nutritional and dietary strategies obtained from the American Diabetes Association were used to create the presentation. Information in the presentation was translated from English to Vietnamese. The presentation focused mainly on consumption of carbohydrates, proteins and vegetables and the glycemic index values of traditional foods, such as white rice. During the presentation, participants had communicated that the glycemic index was unfamiliar and never mentioned to them by their healthcare provider.

Participants asked questions after the presentation regarding the glycemic index of traditional Vietnamese fruits, specifically durian and mangos. One of participants expressed that she avoided all fruits and vegetables that tasted sweet, such as bananas or carrots. Interestingly, this restriction was not instructed by her healthcare provider. The participant inferred sweet fruits and vegetables would cause an unhealthy increase in blood glucose level. Topic of fruit intake had not emerged in prior completed interviews. As a result, questions regarding fruit intake and perception of high glycemic traditional fruits were then added to the interview guide. Unfortunately, the glycemic index of the specific fruits and vegetables that the participants had asked about was unavailable.

Demographic information.

Demographic data were collected on every informant after the completion of the interviews. Information collected pertained to age, gender, marital status, birthplace, the number of years the participants had lived in the U.S., duration of diabetes, type of diabetes treatment, highest level of education, insurance status, language preference and
religion. Demographic information was used to help describe the sample and explain study findings.

**Data analysis.**

Data transcription, translation, and validation of the transcriptions with the audiotape recordings were performed by the researcher. The researcher translated and performed data transcription. The transcription was validated against the tape audio recordings by the researcher. Interview transcripts and field notes were transcribed into Microsoft Word and uploaded into Atlas.ti computer software. Data were coded and organized using the software. Coded data were sorted to form clusters, and demographic data were entered into a SPSS database.

Data analysis was guided by Spradley’s (1979) four levels of ethnographic analysis: (a) domain analysis, (b) taxonomic analysis, (c) componential analysis, and (d) theme analysis. Each level of ethnographic analysis was used to understand how Vietnamese Americans with diabetes conceptualize diabetes self-management and how individuals integrate the cultural construct of treatment.

**Domain analysis.**

Larger units of cultural knowledge and semantic relationships were identified in the first stage of analysis (Spradley, 1979, pp. 94). Domain analysis permitted the researcher to discover the fundamental components of cultural knowledge regarding diabetes self-management (Spradley, 1979, pp 142). Domain analysis was initiated after the collection of data using descriptive questions. Clustering of codes was used to determine semantic relationships. Five domains were created from clustering a total of 137 codes. Domains were classified into pre-existing cultural beliefs, emotions and
perceived etiology of disease development, healthcare experiences, diabetes treatments, and sources of information regarding diabetes.

**Taxonomic analysis.**

Data collected from structural questions were used for taxonomic analysis. Taxonomic analysis involved an examination of the internal structure of each domain (Spradley, 1979, pp. 144). Domain and taxonomic analyses were separated by the researcher in order to fully understand the process in the first eight interviews. For the remainder of the interviews, domain and taxonomic analyses were combined into a single process. Spradley (1979) recommended combining the two analyses to enhance and ease the flow of identifying domains and isolate the subsets within the domains (pp. 144).

Taxonomic analysis revealed smaller subsets within each domain. For example, medication, blood glucose monitoring, exercise, and nutrition subsets were derived from the treatment domain. From there, each subset was separated into smaller subsets. Western medication, Eastern medication and medicinal foods were uncovered as additional information emerged from subsequent interviews in the medication subset.

**Componential analysis.**

Data collection from contrast questions were used for componential analysis. Multiple attributes and relationships were discovered by the researcher for folk terms through contrast questions (Spradley, 1979, pp. 174). Multiple attributes indicated that there were differences among the symbols within the domain (Spradley, 1979, pp. 177). For example, participants had stated a difference between taking herbal supplements and ingesting herbs. Consuming herbs was not considered as taking herbal supplements.
Componential analysis helped further explain each of the difference in taking herbal supplement and herbal consumption, as it relates to diabetes treatment.

**Thematic analysis.**

Thematic analysis was composed of how the relationships among the domains related to one another and to the culture as a whole (Spradley, 1979, pp. 99). Results of the analysis revealed one main theme: Vietnamese Americans with diabetes have dual Eastern and Western perspectives on diabetes illness and treatment. Duality affects how these individuals integrate health and daily living within a Western medical system.

**Debriefing and triangulation.**

Consultation and debriefing occurred with the researcher’s dissertation committee throughout the data analysis process. The researcher consulted Drs. Joan Engebretson and Rebecca Casarez for feedback on codes, domains and thematic findings. Throughout the process, the researcher repeatedly revisited the data to ensure the findings reflected the data or whether aspects were missed.

Triangulation assures credibility of findings through confirmation of multiple sources (Crabtree & Miller, 1999, pp. 82). Comparison of multiple sources provided evidence to validate interview data and analysis findings. Triangulation occurred using the raw interview data, field notes and observational data.

**Findings**

**Description of sample.**

The study included interviews from a total of 21 informants. All of the informants were first generation Vietnamese Americans with the exception of one. The duration of diabetes disease ranged from less than one year to over 20 years. All informants reported
taking Western medication for diabetes treatment. Summary of demographics collected can be found in Table 1.

**Theme: Integration of Eastern and Western belief practices.**

There was one theme that emerged from the findings in the study. The main theme pertained to the integration of Eastern and Western belief practices into diabetes self-management. Aspects of the diabetes self-management experience were sectioned into five arms: pre-existing cultural beliefs, diabetes diagnosis, treatments, healthcare experiences, and sources of diabetes information. Informants reported characterizing each aspect through Eastern perspective, Western perspective, or integrating both perspectives when managing their diabetes.

**Pre-existing cultural beliefs.**

Pre-existing cultural beliefs referred to what the individual has heard or believed was the etiology for diabetes. Eastern perspectives on diabetes etiology pertained to the concept of “urinating sugar,” or bệnh tiểu đường which is the direct translation of diabetes in the Vietnamese language. Bệnh means illness and tiểu đường means urinating sugar. One of the gatekeepers, a medical provider, reported diabetes was once diagnosed by having an individual urinate onto the ground. If ants became attracted to the urine, that indicated that the individual had diabetes. One of the informants confirmed this methodology of diabetes diagnosis:

“I was playing in the rain. I went home to dry my pants. And when my pants dried, I looked at the crotch area and I saw ants around the crotch area. That was when I was told I had diabetes.” (Informant 21)
Informants who had more of a Western perspective on diabetes etiology believed the disease had a hereditary component. These individuals had at least one family member with the disease. Additionally, some of the informants reported being told by their healthcare provider that diabetes had a genetic component.

Others who integrated both perspectives believed diabetes was caused by excessive consumption of sweets. These individuals understood that in order to avoid leakage of sugar in the urine, they must avoid sweets as instructed by their healthcare providers. Informants reported avoiding all food items that tasted sweet, as these items may cause a rise in blood sugar. White rice, condensed milk with coffee, traditional sweet desserts called chè and traditional fruits and vegetables were among the items that were avoided. Specific traditional fruits were durian, jackfruit, mangoes and carrots.

“I just abused sugar. I used a lot of sugar, a lot of sugar. I drank milk, you know the condensed milk. I ate too much. It led me to develop diabetes.” (Informant 16)

**Diabetes diagnosis.**

Informants who identified with a more Western perspective were more accepting of the disease when diagnosed. Particularly, informants who reported a family history of diabetes or a genetic component for disease development were more accepting of the diagnosis. However, a few of these individuals integrated both Eastern and Western perspectives through the expression of fatalistic viewpoints. Informants believed that disease development was inevitable since there was a family history of the disease.

“I was told it was hereditary. Always, always. Everybody has it, all your aunties and uncles have it, you’re gonna get it too.” (Informant 1)
Fatalism was also found with individuals with Eastern viewpoints. These individuals expressed that the presence of diabetes was to be expected as a person aged. Many of the older participants reported having multiple comorbidities such as hypertension and hyperlipidemia as a result of aging. An older female described the body in relation to a broken down car:

“When you’re older, the machine in your body isn’t working correctly. You see that 1000 people, 900 people have it when they’re older.” (Informant 14)

**Treatments.**

Diabetes treatments referred to aspects of diabetes self-management addressed by the American Diabetes Association (n.d.). Treatments included: diet modifications, medication regimen, exercise, blood glucose self-monitoring, foot care and eye care.

**Diet modifications.**

All informants in the study reported receiving recommendations to adhere to dietary modifications or restrictions from their healthcare providers. As previously mentioned, dietary restrictions involved eliminating sweets from the diet. Dietary restrictions were reported to be the most difficult aspect of diabetes self-management by the majority of informants.

Individuals who adhered to the recommendations of their healthcare provider reported eliminating or reducing white rice and sweets from their diet. Adherence to Western dietary modifications included the consumption of vegetables and lean protein such as chicken breast and salmon as a part of diet modifications. Informants acknowledged that removal of starches, particularly white rice, was difficult since white rice is a staple in the Vietnamese diet. However, informants reported being more
motivated to follow dietary changes since many were caretakers of small children. Others reported fearing diabetes related complications, such as blindness and amputations would occur if they did not eliminate sweets from their diet.

“I feel like its cause I’m still young. My kids are so young. I need to do something. Fish and vegetables, that’s it. It took me a really long time to stop eating starches, like rice and noodles. And if you’re Vietnamese that is hard.”

(Informant 1)

“They cut off your legs and feet. So you hear and you get so scared. That’s way too severe. When your hands and feet ache and you go blind. So that’s why they tell you that you need to take care of it before it gets worse.” (Informant 9)

In addition, restriction of sweets and traditional fruits were a part of reported dietary modifications. Informants believed any food item that tasted sweet would cause an increase in blood sugar levels. Durian, jackfruit, mangoes, longan, and ripened persimmons were among the traditional fruits that were found to be heavily avoided by informants.

“Durian is sweet. It has a lot of sugar. Ripe persimmon, has lots of sugar.”

(Informant 16)

In contrast, there were informants who did not adhere to medically prescribed dietary modifications. Particularly, these informants reported not reducing the amount of white rice consumption. White rice, a staple in the Vietnamese diet, was needed for sustainability. One older female participant believed that white rice restriction or reduction would cause an imbalance in the body, which would result in developing illness.
“When you’re so used to eating rice every day. You know so used to eating it growing up… three times a day.” (Informant 2)

“I have some friends of mine. They hear about diabetes and they’re scared. They’re afraid to eat rice. The sugar goes down, but then you develop some other sickness. When you restrict too much, way too much, your body cannot balance.”

(Informant 14)

Substitution for white rice with other grains such as brown rice or quinoa was reported as being difficult to consume among these participants. This difficulty was due to texture and preparation of grains. Preparation of substitute grains required additional steps to achieve the glutinous texture of traditional white rice. Informants reported that eating substitute grains with classic Vietnamese dishes such as braised catfish (cá kho) and soups (canh) affected the traditional taste of these dishes.

“When you eat brown rice, it’s different than our rice. It’s way different. It does have a nice fragrance. But the taste is different it’s not chewy in the mouth. It’s hard. That’s all.” (Informant 17)

“Because Vietnamese people, we like eating cá kho and canh. With brown rice, it doesn’t taste right.” (Informant 18)

Dietary restrictions were not perceived as imperative in older informants when compared with younger informants with diabetes. Family members of older informants did not require them to adhere to restrictions, but instead encouraged members to eat whatever they wanted.

“He was late 80’s or 90’s. If he wanted a piece of cake. I give him a piece of cake. I let him eat it. I have a friend, her mother who is like high 80’s wouldn’t let her
Informants who integrated both Eastern and Western perspectives modified diets by substituting white rice with other grains such as brown rice, quinoa, and Basmati rice. Adjustments to texture and taste were reported as being difficult at first, but individuals reported that they would rather eat substitute grains than to consume no grains at all. Many informants favored the taste of Basmati rice over the other grains listed above. They also believed the grain did not produce a rise in blood glucose levels.

“Eat Indian rice. It’s not good though. It’s hard to eat. But you get used to it. You have to do it if you’re sick.” (Informant 11)

“Basmati rice, I see that it says no sugar. My sister bought it for me. She said there’s no sugar. Yes it says on the bag too. I read it on the package. It says no sugar. I eat it 2-3 times a week.” (Informant 8)

Medication therapy.

Use of Western medications for diabetes treatment was reported by all informants. Treatments included taking oral antidiabetic medications or administering injections such as insulin. Favor for Western medications and the biomedical approach to treatment occurred if participants observed a fast drop in fasting glucose or hemoglobin A1c values.

“You know even with diet and stuff like that, it helped out but not that much. I needed the medication. I got my insulin and everything else and three months later, the doctor was like wow my blood sugar changed.” (Informant 2)

One informant reported trusting only Western medication because it was regulated by the government. The informant explained if Eastern medicine and herbals
were efficacious in reducing blood glucose levels, then Americans would endorse it as treatment for diabetes.

“I don’t use an Eastern medicine or herbals. My whole family don’t believe it. I only take Western medicine. For me, if it’s good for you, Americans will put it in the store. Plus the research and that stuff is not there.” (Informant 20)

Although trust in Western medication was reported by all participants, a few informants expressed experiencing or having fear of experiencing adverse side effects. Fear of damage to vital organs such as the liver and kidneys was reported. An older male reported cutting medication doses in half to avoid side effects since medical providers tended to over prescribe medications. This informant disclosed using body awareness as an alternative to decide which medication(s) to take because he was insistent his medical provider purposefully withheld medication side effects from him.

“The doctor gives you a lot of medicine. But in there, there’s a couple of medicines that makes you sleepy. I find out which ones make you sleepy. I take it out. If I see my sugar is low, I decrease my medication. I am afraid to tell my doctor. I don’t want him to hate me.” (Informant 21)

Eastern medication, herbals and medicinal foods were found to be used in conjunction with Western treatments. These individuals integrated both Eastern and Western forms of treatments. Eastern medication pertained to medications that were bottled in pill form, while herbals comprised Chinese traditional medicine, or thuốc bắc. Medicinal foods were food items that were used for the purpose of lowering blood glucose.
Eastern medication and herbals were perceived as slower acting compared to Western medicine. One older male expressed feeling assurance when using both Eastern and Western medications simultaneously, since there were benefits to both forms of treatment.

“Each treatment has its benefits. Like if you have a wound, you get an injection of antibiotics, it works fast. If you use herbals, it’s gentle on the body. It works slower.” (Informant 21)

For one female participant, hemoglobin A1c values did not reduce with Western medication alone. After supplementing with an Eastern medication she saw advertised on television, she began to see a drop in her hemoglobin A1c values. She was unaware of the active ingredient(s) found in the pills and believed that the pills would work since a medical provider had endorsed the pills on television.

“I have seen this advertised on TV. I ordered it. Before my A1c was above 7% and hadn’t gone down with medication. I have only taken it for 3 months, and now it’s gone down some. I am quite happy.” (Informant 15)

Informants reported using Western celery, bittermelon, lemon water, and Houttuynia cordata leaves (diếp cá) for medicinal purposes. Western celery was not only used to manage blood sugar but also to treat high cholesterol and blood pressure.

“I have heard every day you eat a bundle of celery on an empty stomach. You can juice it. Then you wait 30 minutes and then you can eat rice. The man next door to me, he does it every day and he has no problems. No diabetes, cholesterol or high blood pressure. He swears by it.” (Informant 4)
All participants reported past or current consumption and/or heard of bittermelon to lower blood glucose values. Consumption of bittermelon varied from daily intake to once a month. Bittermelon was reported to be prepared as a soup or stir fried to consume with white rice or grains.

Lemon water was reported by two informants to reduce glucose levels. Lemon water was ingested either on an empty or full stomach. One of the informants reported she discovered this remedy when she visited Vietnam when she forgot to bring her diabetes medication. The informant reported blood glucose levels did not rise, as she consumed lemon water daily. Both of the informants believed lemon water helped dilute glucose levels in the body.

“One time I went to Vietnam and I forgot to bring my diabetes medicine. I was there for 1.5 months. I went to buy medicine in Vietnam, but it’s not the same as the one from U.S. I didn’t buy it. So after I eat I drink a glass of lemon water. Till the day I went back to the U.S. my sugar wasn’t that high when I checked it.”
(Informant 14)

Consumption of Houttuynia cordata leaves (i.e., diếp cá) juices were reported by two informants in reducing glucose levels. One of the informants reported consuming the juice of the leaves at least once a week, while the other informant mentioned his father also pressed the leaves into a juice. Both of the informants reported consumption of juices resulted in lowered glucose levels.

Exercise.

Exercise was found to align more with a Western perspective towards diabetes self-management. For recently immigrated informants, many had never exercised until
they immigrated to the U.S. Participants reported either engaging in physical activities within or outside of the home.

Walking within the house, as well as yard and house work, were identified as forms of exercise for these participants. Those who engaged in physical activities within the home were over the age of 65 years. Walking outdoors was not an ideal option for these individuals due to concerns for falls and injuries.

“Well I have a weak leg, so I can’t go outside. So in the house I will walk back and forth.” (Informant 10)

“I exercise to death around the house, cooking. I walk back and forth in the house. That’s good enough.” (Informant 4)

In contrast, physical activities that occurred outside of the home were reported by informants under the age of 65 years. Exercise programs, walking outside, or going to the gym were activities reported as appropriate exercises by the informants. An informant emphasized daily exercise was the most important activity to help control blood glucose levels, which included lifting weights and running on a treadmill at the gym.

“Housework… that’s not exercise. Walking around the house does not let you sweat. Sweat is needed. When you sweat you feel good.” (Informant 11)

*Blood glucose monitoring.*

Informants that aligned with a biomedical or Western approach towards diabetes treatment were more compliant with daily blood glucose checks. Pain was often reported as a deterrent; however, these individuals stated that one must persevere since it is an essential part of illness management.
“It’s just things you have to do every day you know. It doesn’t matter if you want to do them or not.” (Informant 13)

Individuals with a more Eastern approach reported blood glucose testing was painful and deemed unnecessary. Instead of daily monitoring, these informants checked blood glucose levels every 2-3 days or only once a week. Informants relied on body awareness to monitor glucose levels. When blood glucose values were too high or low, informants reported experiencing symptoms such as sweating or dizziness. Informants believed that individuals with well-maintained blood glucose levels should not experience sweating or dizziness.

“I know my body well enough and what is going to make me sick and what’s not going to.” (Informant 1)

“I see that my sugar is normal. Other people who have high sugar will feel dizzy. They feel that their body is different. I don’t see anything. I see mine is normal. My sugar may not be too high.” (Informant 14)

Footcare and eyecare.

Similar to exercise, footcare and eyecare were identified as Western forms of diabetes treatments. Individuals who reported having fears of blindness and amputations acknowledged that the practice was reasonable. Daily footcare inspections and having annual eye exams were reported by five informants.

Healthcare experiences.

Experiences with the Western biomedical system were reported as being either a positive or negative. Informants who had a more positive healthcare related experience reported having a trusting relationship with their medical provider. In order to build a
trusting relationship, informants had to trust the capabilities of the medical provider by seeing a decrease in hemoglobin A1c values. Reports of medication adherence was greater in individuals who reported having trust in their healthcare provider. These individuals were more likely to discuss openly with their provider regarding adverse effects with medications.

“I went to see an endocrinologist for the first time. My A1c was really high. He’s gotten it down a lot. It’s so well controlled. Since then I love my endocrinologist. It’s been eleven years now. And a lot of different medications. I don’t like side effects, so if there’s something I don’t like about a med that came out. I will tell him.” (Informant 1).

Negative healthcare experiences were reported to be related to dissatisfaction with medical care as a result of language barrier and a disconnection with the medical provider. Newly immigrated informants reported being the most dissatisfied with the American health system. During interviews, these individuals would often compare the differences between the health systems in the U.S. and Vietnam. One informant reported difficulty in obtaining a glucometer machine despite requesting the device from the medical provider. Due to this mistrust with the medical provider, the informant felt discouraged to fully disclose the use of herbals to supplement medication treatments.

“I don’t really feel like I need to tell them. It’s not a big deal. In Vietnam, when you’re tired, you get an ultrasound. If you have money you get to go to the hospital. They do what you want. I just want an ultrasound to make me feel better. But here it’s not like that. They tell you what you need. You can’t request things.” (Informant 15)
Sources of information.

Sources of information pertains to how informants acquire information related to diabetes disease and management. Medical providers, family members, community, and YouTube channels were the various resources that were used to gain information. Participants reported using multiple sources listed above in order to better manage diabetes disease.

Healthcare providers remained the primary source for information for all participants in the study. Informants preferred to obtain diabetes self-management information from their medical providers. Information was normally given through handouts. A few individuals reported medical providers were helpful in explaining the disease and answering questions.

“The doctor guides and tells you what to do. The doctor gives you handouts so that you can take care of yourself. Like eating vegetables. The doctor told me to eat more vegetables.” (Informant 16)

YouTube was reported as a secondary source of information by the majority of participants. Many reported receiving diabetes management tips from a medical doctor from California. Diabetes management tips provided by YouTube included white rice restrictions and substituting brown or Basmati rice into daily diets. In additional, another YouTube video was mentioned to provide different medical foods to lower blood glucose levels.

“Sometimes I open YouTube, they tell me about the disease. I listen to the doctor on there from California. They tell you what to eat, what to restrict, what to stop eating.” (Informant 15)
Family members, particularly those with diabetes and or have a healthcare background, were essential in helping informants take care of their diabetes. Many relied on previous experiences and knowledge from family members with diabetes to help guide their own disease management. Information regarding the efficacy of medications to types of foods to lower blood glucose values was shared.

Informants reported sharing information throughout the community and to other members of the community with diabetes. Older informants were found to be more involved in the community and were more knowledgeable about medicinal foods. Younger participants reported having less time to converse with members of the community due to long working hours.

**Model development.**

A model was developed using the findings from the study to conceptualize diabetes self-management and diabetes experience in the Vietnamese American population (Figure 1). The following are the five domains used to illustrate the diabetes experience in this population: (a) pre-existing cultural beliefs, (b) diabetes diagnosis, (c) healthcare experiences, (d) treatments, and (e) sources of information.

The social ecological model was used as a framework to help demonstrate the interactions between the individual, social, cultural and environmental factors. Instead of using a circular diagram, a pentagram was selected to illustrate the interactions between the domains. In order to display the fluidity and complexity of culture, bidirectional arrows were chosen to depict the connection between the domains. Arrows signified a reciprocal interaction between the domains; thus each domain has the ability to affect one another.
The goal of the model is to help illustrate the interactions that were found during interviews. The model demonstrates that diabetes self-management in this population is not a linear or a simple process. Each domain of the model can impact one another and ultimately affect an individual’s diabetes self-management process. For example, an individual who believed consuming excessive amounts of condensed milk will cause diabetes is more likely to be accepting of the disease if he or she consumed the item. If the individual’s healthcare provider instructed to restrict other sweet items from the diet, this individual will more likely adhere since he or she believed consumption of sweets caused diabetes. The individual will use other sources of information such as social networks or the internet to identify other sweet items to restrict in the diet. This overall will solidify the acceptance of diabetes disease. This individual will more likely adhere to other forms of diabetes treatment for this reason.

On the contrary, if an individual had a negative healthcare experience due to the healthcare provider’s inattentiveness to the individual’s concerns, the individual may look for other sources of information on disease development and treatment. If the individual viewed misconceptions about the disease on YouTube, this may affect the individual’s perception on disease management and overall acceptance of the disease process.

**Discussions**

The purpose of this ethnographic study was to explore how Vietnamese Americans living with diabetes conceptualize and integrate the cultural construct of treatment and self-management of diabetes. Results from this study revealed how Eastern and Western treatments of diabetes shape Vietnamese Americans’ attitudes towards
diabetes disease and treatment experience. Several components were discovered to affect diabetes self-management, which included the individual’s cultural beliefs, perception of disease, healthcare experiences, treatments and sources of diabetes information.

Integration of Eastern and Western beliefs and practices.

Dual integration of Eastern and Western health beliefs and practices into diabetes self-management was the predominate theme found in this study. All of the informants reported dual integration in at least one aspect of diabetes care. For example, Western treatments were used concurrently with Eastern herbals or with medicinal food practices. This finding corroborated a previous study that indicated Vietnamese Americans achieved a balance of yin and yang by integrating Eastern and Western treatments (Nguyen, 2014). A number of informants in this study reported the concept of balance was necessary to achieve health; however, they did not identify balance as the principle of yin and yang or hot and cold, as previously reported in the literature (Mull et al., 2001; Nguyen, 2014).

Contrary to previous reports regarding noncompliance of Western diabetes medication treatments, all informants in this study relied on Western medication to control blood glucose levels (Nguyen, 2014). Many individuals in this study reported Western medication was superior to Eastern forms of treatments and necessary for diabetes treatment. Additionally, informants did not prefer solely Eastern medication to treat diabetes. A possible rationale for this finding might be due to the type of settings used to recruit for the study. Since participants were recruited from health fairs and/or physician’s offices, there was a possibility of informants being more accustomed to the biomedical healthcare system and Western beliefs for development of diabetes.
Additionally, findings on medicinal foods were similar to previous literature. However, aside from bittermelon, there were additional foods that have not been reported in previous literature (Mull et al, 2001), such as the use of Western celery, lemon water, and Houttuynia cordata leaves.

Similar to findings in previous studies, participants in this study had difficulty in reducing or eliminating consumption of white rice (Nguyen, 2014). Reasons for this challenge included the taste and texture of white rice are necessary for traditional Vietnamese meals. Many considered that replacing or omitting white rice in traditional Vietnamese dishes was not considered a Vietnamese meal. This finding might be helpful in understanding why eliminating or reducing white rice consumption is difficult in this population and how to improve compliance in dietary changes to encourage better diabetes management.

**Impact of healthcare experience on diabetes self-management.**

An individual’s healthcare experience was found to impact diabetes self-management and daily life. Previous literature has reported Vietnamese Americans were more likely to trust the recommendations given by their medical providers (Tran, 2009). A previous study reported that positive relationships between healthcare providers and informants were found to promote adherence to diabetes treatments and recommendations. A trusting relationship with healthcare providers helped improve adherence to healthcare recommendations, better glycemic control, and less emotional burden in diabetic Vietnamese Australians (Carolan-Olah et al., 2013).

Negative healthcare experiences were found to facilitate noncompliance with diabetes treatments and recommendations. Informants associated negative experiences
with dissatisfaction of care by healthcare providers. Healthcare providers were perceived as treating healthcare as a business when they did not provide a sufficient amount of time during office visits to address participants’ concerns. This finding has not been reported by previous studies. Since a large number of informants were immigrants who’ve recently arrived in the U.S., a possible rationale to support this finding could be the informants were more familiar with the healthcare system in Vietnam.

**Seeking other sources for information.**

Informants in this study expressed the desire to acquire more knowledge of the disease process through a variety of sources that were not consistent with current literature. Previous literature suggested Vietnamese Americans were dependent on medical providers for treatment and disease information (Tran, 2009; Nguyen et al., 2008). Although informants in this study reported trusting and relying on their medical provider for information, they continued to search for information from outside sources. Outside sources included attending community health fairs, which also provided opportunities to share personal diabetes treatment experiences with other diabetic individuals in the community.

In addition to obtaining information from community health fairs, YouTube was another source of information used to learn about the disease process reported by informants. Informants in this study reported obtaining diabetic nutrition information, such as supplementing Basmati rice for white rice from the popular site. One informant discussed seeing a video about the sugar content of the popular southeastern fruit, durian. After seeing this video, the individual reduced the amount of durian consumption indefinitely. The individual reported that the healthcare provider did not suggest this
restriction. This finding was not surprising considering how the internet has influenced the access of information; it has not been well documented as a source of information in this population in prior literature.

**Implications for Research and Practice.**

As evidenced by the findings of this study, diabetes self-management in the Vietnamese Americans was impacted by Eastern and Western perspectives. Considerations need to be made by healthcare providers to provide competent care in this population. Vietnamese Americans in this study used a combination of medicinal foods with Western medication, which was essential for treatment to help reduce glucose levels. It is important for healthcare providers to improve patient relationships through open communication and routinely ask about herbal and medicinal food intake, as it might interfere with medication absorption and glycemic control.

YouTube was reported as a secondary source of information for Vietnamese Americans in this study. Healthcare providers will need to review and be familiar with information provided on this form of media to prevent misinformation or misconceptions that might affect patients’ diabetic management and treatment.

Misconceptions reported by individuals in this study included inaccurate reports of glycemic index for certain grains. Informants reported that Basmati rice, used as a substitute for white rice, and contained very little or no sugars. Healthcare providers will need to address these misconceptions and tailor diabetes education to include these misconceptions to improve dietary compliance.

These findings can be impactful to understanding diabetes self-management in this population; however, a gap of knowledge still remains. Future research is needed to
focus on the diabetes self-management practices of second generation Vietnamese Americans as their practices may vary when compared to first generations. Further research is needed to account for the influence of internet sources, not limited to YouTube, and the effects online sites may have on diabetes care in this population.

Limitations.

All of the informants with the exception of one were first generation Vietnamese Americans. Findings from this study did not represent individuals from the second generation. The majority of the sample was middle age adults, which was not an accurate representation of the population with diabetes, as younger individuals have been diagnosed with diabetes. According to the American Diabetic Association (n.d.), diabetes screening in Asians should occur at age 45 years or younger than 45 years of age if there are risk factors.

Participants were also given the option to partake in phone interviews. Because of this, the researcher was not able to observe participants’ nonverbal cues and facial expressions. This was a limitation of the study due to lack of additional information provided by nonverbal language cues.

Additionally, sample recruitment occurred at health fairs and physician’s offices. As a result, majority of participants were familiar with the biomedical healthcare system and had trust in Western medications. Findings may vary depending on the recruitment sites.

The concept of social desirability was a limitation due to recruitment of participants from medical offices. Social desirability might affect the way informants answer questions, which could potentially yield inaccurate information given to the
researcher. Inaccurate information given to the researcher by participants could be because participants feel the need to consistently maintain a positive image to the researcher and their healthcare provider.

**Conclusion**

The results of this study revealed the importance of understanding how this population integrates the cultural construct of treatment for diabetes self-management. This understanding will help health providers improve and manage diabetes disease through the development of culturally appropriate interventions that will reduce the short and long term complications of diabetes in Vietnamese Americans.
References


Glanz, K., Rimer, B.K., & Viswanath, K. (2008). *Health behavior and...*


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Current herbal use  4
Figure 1. Diabetes experience model
MANUSCRIPT APPENDIX A

Interview Guide
Interview Guide.

Grand Tour: What have you heard about diabetes?

4. Probe: Where do you get the information about diabetes?

5. Probe: What do you think caused people to have diabetes?

6. Probe: Have you heard of imbalances (hot/cold) causing diabetes?

Grand Tour: What are things you heard about diabetes treatment?

4. Probe: What are some things you think you should do to take care of your diabetes?

5. Probe: What are some food or herbals that you heard of that can help manage diabetes?

6. Probe: What are things you heard about exercise and health? Do you think exercise can help manage diabetes?

Grand Tour: What are things you do to take care of your diabetes?

4. Probe: How has diabetes changed the way you eat?

5. Probe: What type of exercise are you currently doing to help manage your diabetes?

6. Probe: What has been the hardest aspect of diabetes self-management?
APPENDIX A

CPHS Approval letters
NOTICE OF APPROVAL TO BEGIN RESEARCH

April 09, 2019

HSC-SN-19-0202 - Copy of Understanding diabetes health beliefs and health practices in Vietnamese Americans.

Number of Subjects Approved: Target: /Screen:

PROVISIONS: This approval relates to the research to be conducted under the above referenced title and/or to any associated materials considered by the Committee for the Protection of Human Subjects, e.g. study documents, informed consent, etc.

APPROVED: By Expedited Review and Approval

REVIEW DATE: 03/29/2019

APPROVAL DATE: 04/09/2019

CHAIRPERSON: L. Maximilian Buja, MD

Subject to any provisions noted above, you may now begin this research.

PLEASE NOTE: Due to revisions to the common rule that went into effect July 19, 2018, this study that was approved under expedited approval no longer needs to submit for continuing review. Changes to the study, adverse events, protocol deviations, personnel changes, and all other types of reporting must still be submitted to CPHS for review and approval. When this study is complete, the PI must submit a study closure report to CPHS.

CHANGES: The principal investigator (PI) must receive approval from the CPHS before initiating any changes, including those required by the sponsor, which would affect human subjects, e.g. changes in methods or procedures, numbers or kinds of human subjects, or revisions to the informed consent document or procedures. The addition of co-investigators must also receive approval from the CPHS. ALL PROTOCOL REVISIONS MUST BE SUBMITTED TO THE SPONSOR OF THE RESEARCH.

INFORMED CONSENT DETERMINATION:
Signed Informed Consent Required

**INFORMED CONSENT:** When Informed consent is required, it must be obtained by the PI or designee(s), using the format and procedures approved by the CPHS. The PI is responsible to instruct the designee in the methods approved by the CPHS for the consent process. The individual obtaining informed consent must also sign the consent document. Please note that only copies of the stamped approved informed consent form can be used when obtaining consent.

**HEALTH INSURANCE PORTABILITY and ACCOUNTABILITY ACT (HIPAA):**

**Exempt from HIPAA**

**UNANTICIPATED RISK OR HARM, OR ADVERSE DRUG REACTIONS:** The PI will immediately inform the CPHS of any unanticipated problems involving risks to subjects or others, of any serious harm to subjects, and of any adverse drug reactions.

**RECORDS:** The PI will maintain adequate records, including signed consent and HIPAA documents if required, in a manner that ensures subject confidentiality.
NOTICE OF APPROVAL TO IMPLEMENT REQUESTED CHANGES

April 29, 2019

HSC-SN-19-0202 - Copy of Understanding diabetes health beliefs and health practices in Vietnamese Americans.
PI: Dr. Linda Sheen

Reference Number:
187425

PROVISIONS: Unless otherwise noted, this approval relates to the research to be conducted under the above referenced title and/or to any associated materials considered at this meeting, e.g. study documents, informed consent, etc.

APPROVED: By Expedited Review and Approval

CHANGE APPROVED: Study Protocol 2
Flyer 2

REVIEW DATE: 04/26/2019

APPROVAL DATE: 04/29/2019

CHAIRPERSON: Charles C. Miller, III, PhD

Upon receipt of this letter, and subject to any provisions noted above, you may now implement the changes approved.

CHANGES: The principal investigator (PI) must receive approval from the CPHS before initiating any changes, including those required by the sponsor, which would affect human subjects, e.g. changes in methods or procedures, numbers or kinds of human subjects, or revisions to the informed consent document or procedures. The addition of co-investigators must also receive approval from the CPHS. ALL PROTOCOL REVISIONS MUST BE SUBMITTED TO THE SPONSOR OF THE RESEARCH.

INFORMED CONSENT: Informed consent must be obtained by the PI or designee(s), using the format and procedures approved by the CPHS. The PI is responsible to instruct the designee in the methods approved by the CPHS for the consent process. The individual obtaining informed consent must also sign the consent document. Please note that if revisions to the informed consent form were made and approved, then old
**blank copies of the ICF MUST be destroyed. Only copies of the appropriately dated, stamped approved informed consent form can be used when obtaining consent**

**UNANTICIPATED RISK OR HARM, OR ADVERSE DRUG REACTIONS:** The PI will immediately inform the CPHS of any unanticipated problems involving risks to subjects or others, of any serious harm to subjects, and of any adverse drug reactions.

**RECORDS:** The PI will maintain adequate records, including signed consent documents if required, in a manner that ensures subject confidentiality.
APPENDIX B

Informed Consent
INFORMED CONSENT TO TAKE PART IN RESEARCH

Study Title: Understanding diabetes health beliefs and health practices in Vietnamese Americans

Principal Investigator: Linda Sheen, PhD (c), Cizik School of Nursing, UTHealth

Study Contacts: Linda Sheen

Contacts: Linda Sheen, 713-500-2091

We are inviting you to be in a research study by investigators at the UTHealth Cizik School of Nursing. We are studying the health beliefs and health practices in regards to diabetes self-management in the Vietnamese American population. This information will help the researchers be able to improve diabetes self-management in this population in order to help reduce the diabetes burden in the United States.

If you agree to be in our study, we will talk with you for approximately one hour. If you agree, we will ask you to take part in a one-on-one interview with the researcher. You do not have to be in the study if you do not want to. You can change your mind at any time and there will be no penalty. You and the researcher will decide together how many interviews you will have, and when they will occur. The interviews may happen over the span of a week, if you agree.

You do not have to share any information that you are not comfortable sharing. You can stop participating in conversation at any time.

We will be careful to keep your information confidential, and we will ask you to keep the discussion confidential as well. There is always a small risk of unwanted or accidental disclosure. We plan to record the conversations with your permission. Any notes, recordings, or transcriptions will be kept private by the primary investigator, Linda Sheen. Any digital files will be encrypted and password protected. You can decide whether you want your name used.

If you have questions or concerns at any time about the research, you can contact Linda Sheen at 713-500-2091. If you have any questions about your participation in this research, you can call the Institutional Review Board (IRB) at 713-500-7943. The IRB is a committee that has reviewed and approved this research study (HSC-MS-19-0202).

I give permission for my interview to be recorded: Yes/No

Printed Name of Subject: ____________________________  Signature of Subject: ____________________________  Date: ____________________________

Printed Name of Person Obtaining Informed Consent: ____________________________  Signature of Person Obtaining Informed Consent: ____________________________  Date: ____________________________

IRB NUMBER: HSC-SN-19-0202
IRB APPROVAL DATE: 04/09/2019
APPENDIX C

Recruitment Flyer
PARTICIPANTS NEEDED

For research study on diabetes health beliefs and health practices!!

Dates & times for participating are flexible and may involve 1-2 visits. Financial compensation will be provided for participation and travel expenses.

Cizik School of Nursing

We need:

- Participants who are 18 years and older
- Vietnamese ethnicity
- Able to read, write and speak Vietnamese or English
- Diagnosed with type 2 diabetes mellitus

CONTACT LINDA
For more information
281-793-8920

IRB NUMBER: HSC-SN-19-0202
IRB APPROVAL DATE: 04/09/2019
CURRICULUM VITAE
Linda H. Sheen, PhD, MSN, RN, FNP-BC

EDUCATION:

University of Texas Health Science Center
Cizik School of Nursing
Houston, Texas

2019  PhD  Nursing

University of Texas Health Science Center
School of Nursing
Houston, Texas

2012  MSN  Nursing
Family Nurse Practitioner

University of Texas Medical Branch
Galveston, Texas

2009  BSN  Nursing

PROFESSIONAL POSITIONS:

University of Texas Health Science Center
Cizik School of Nursing
Houston, Texas
Teaching Associates

2015 – Present

University of Houston – Downton
Houston, Texas
Family Nurse Practitioner

2016 – 2018

University of St. Thomas
Carol and Odis Peavy School of Nursing
Adjunct Clinical Faculty

2015

University of Texas Health Science Center
School of Medicine
Family Nurse Practitioner

2014 – 2015

University of Texas Medical Branch
School of Nursing
Adjunct Clinical Faculty

2014 – 2015

Rediclinic
Houston, Texas
Family Nurse Practitioner

2013 – 2014

University of Texas Health Science Center
School of Nursing
Graduate Assistant

2009 – 2013
Texas Children’s Hospital 2009 – 2014
Registered Nurse

PROFESSIONAL MEMBERSHIP:

American Association of Nurse Practitioners 2018 – Present
Member

Council on Nursing and Anthropology 2019 – Present
Member

Vietnamese Nurses Association 2015 – Present
Member, Houston Chapter

Sigma Theta Tau 2013 – Present
Member, Zeta Pi Chapter

PRESENTATIONS:

Poster sessions

“Traumatic Brain Injury: The continuing Nightmare”
University of Texas Health Science Center
School of Nursing
Houston, Texas

AWARDS AND RECOGNITION:

2016 Recipient, Sigma Theta Tau Zeta Pi Chapter
PhD student award