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Needs Assessment: A Food Pharmacy during the COVID-19 Pandemic

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Needs Assessment: A Food Pharmacy during the COVID-19 Pandemic

BH 656: Master of Science in Behavioral Health Capstone

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Abstract

Introduction

The needs assessment report discusses the effects of COVID-19 (Coronavirus) pandemic on a low-income Hispanic/Latino population specifically for diabetic patients seeking food pharmacy services at a non-profit clinic in San Mateo County. Nutrition is an essential aspect of diabetes management, which can be challenging to obtain among low-income populations. The COVID-19 pandemic has caused additional challenges among the general population, making it more challenging for the diabetic low-income population. This project was undertaken to identify the effects COVID-19 has on the food pharmacy patients.

Methods

The needs assessment consisted of eleven in-depth interviews done in six week period. A demographic survey was given before the interview to assess the background of the participants.

Results

A total of ten out of eleven participants reported challenges due to the COVID-19 pandemic. All participants addressed diabetes-self management in their interviews. Results showed that eight out of eleven participants addressed financial challenges when asked about the food pharmacy services. Having the necessity was a motivator in seeking food pharmacy services, which nine out of the eleven participants discussed during the interviews.

Discussion

Information about the COVID-19 pandemic is still emerging due to COVID-19 being a new disease (Kumar et al., 2020). According to Kumar et al. (2020), case-control studies have been conducted and have demonstrated that individuals diagnosed with COVID-19 who already

have diabetes mellitus have increased mortality. In addition to health concerns, COVID-19 pandemic has brought up other concerns for participants in this needs assessment.

Keywords: Diabetes, Diabetes self-management, nutrition, COVID-19, Coronavirus, food pharmacy.

Executive Summary

COVID-19 pandemic has affected many individuals globally. Our communities have faced many challenges and are currently facing challenges during the pandemic. COVID-19 pandemic has a significant impact on our health. Vulnerable populations are at higher risk than others in contracting COVID-19, such as diabetic individuals. Samaritan House Clinic has overcome challenges during this time but continues to provide services for their patients. Samaritan House Clinic partners with the food bank to provide food pharmacy services for diabetic patients.

Samaritan House Clinic has continued to provide food pharmacy services through the COVID-19 pandemic. The food pharmacy has positively impacted the food pharmacy patients' lives, not only with just their health, especially during this time of the pandemic. In-depth interviews were conducted to better understand the effects of the COVID-19 pandemic on the food pharmacy patients at the Samaritan House Clinic.

All the participants in the needs assessment in-depth interviews are from Hispanic/Latino countries and have Spanish as a primary language. Following the demographic survey, in-depth interviews were conducted, which consist of eleven participants. The participants were patients that were referred to the food pharmacy services by their doctor at the Samaritan House Clinic. The participants include patients seeking services, do not find services often, and do not seek assistance. Three interviews were conducted in person, while the food pharmacy patients waited outside to pick up their food. Social distancing was put into practice, while participants and I

wore masks. The rest of the eight interviews were conducted over the phone. Utilizing random sampling, I recruited participants for the phone interviews.

Following verbal consent from participants, the interviews conducted addressed three major themes. The three essential topics found from the in-depth interviews are the effects of COVID-19, Diabetes Management, and the food pharmacy. Other areas found from COVID-19 are challenges, finances, and employment. Areas addressed for diabetes management include exercising, medication adherence, and nutrition. Discussing areas of motivations in seeking services, problems in finding services, and addressing reasons not to seek assistance in the food pharmacy were a result of the interviews.

Before the beginning of the COVID-19 pandemic, the foodbank partnered with Samaritan House Clinic to provide a food demonstration class for patients referred to the food pharmacy services. The food demonstration class was available to food pharmacy patients once a month. I was only able to attend one food demonstration class due to the cancelation of the rest of the classes because of maintaining social distancing. Samaritan House Clinic and the food bank are currently working on organizing a food demonstration class while incorporating social distancing and supporting each patient and employee's safety.

As a result of the findings, ten out of the eleven participants discussed the COVID-19 pandemic challenges. All participants addressed diabetes self-management and food pharmacy services in their interviews. I created a video for the incoming new food pharmacy patients, including the benefits of using food pharmacy services and instructions on how to get assistance. Besides, a reminder of maintaining social distancing and bringing a mask when seeking services are included. The video is still pending approval from Samaritan House Clinic to send to their patients.

Literature Review

Introduction

According to the CDC (2019), over 34 million individuals living in the United States have diabetes. Diabetes is a chronic disease that is increasing dramatically in the United States. Diabetes is caused by many risk factors, such as family history and lifestyle choices. Diabetes self-management influences an individual's control over their blood sugar levels. According to Heter (2019), the American Association of Diabetes Educators (AADE) has initiated seven diabetes self-management areas, including healthy eating. According to the National Institution of Diabetes and Digestive and Kidney Disease (NIDDK) (2016), nutrition is an essential part of supporting a healthy lifestyle when living with diabetes.

Although there is an increasing rate of individuals becoming diagnosed with diabetes, individuals have barriers to accessing the right nutrition for diabetes. Racial and health disparities have been found among the Hispanic or Latino populations who have a high prevalence rate of diabetes (Murayama et al., 2017). However, diabetes proper nutrition is more costly and not accessible to food-insecure households that are out of reach. Since the COVID-19 pandemic began, access to nutritional support for diabetic individuals has become increasingly challenging. According to Brody (2020), the nation has not focused on the lack of access to dietary needs and the need to support and maintain a healthy immune system.

Defining Diabetes

There are two forms of diabetes, which are typically one and type two. Diabetes type one is when the body is producing little to no insulin (ADA, 2019). Insulin is a hormone provided by the pancreas, allowing blood sugar to enter the body's cells and used for energy (CDC, 2019).

When the pancreas produces little to no insulin, the blood sugar cannot get into the body cells, which can build up in the bloodstream (CDC, 2019).

When there is an immune reaction where the body attacks itself, it mistakenly results in type one diabetes (CDC, 2019). According to the CDC (2019), a known risk factor of diabetes type one is family history. Diabetes type one is developed typically as a child, teen, or young adult in the U.S., which currently, there is no prevention (CDC, 2019).

In comparison, diabetes type two is developed generally over the age of 45. However, there is an increase in children, teens, and young adults developing diabetes type two (CDC, 2019). With diabetes type two, cells in the body do not usually react to insulin, known as insulin resistance (CDC, 2019). According to the CDC (2019), insulin resistance results in the pancreas, making more insulin to react to the cells, which ultimately the pancreas can't keep up, and the blood sugar increases. When the blood sugar increases, it sets up the stage for pre-diabetes and type 2 diabetes (CDC, 2019). Individuals at risk for type two diabetes are overweight, forty-five years of age or older, family history, lack of physical activity, have had gestational diabetes during pregnancy, or have given birth to a baby who weighed more than 9 pounds (CDC, 2019).

Overall, individuals with diabetes are at higher risk for comorbidities such as heart disease, stroke, kidney disease, and mental health problems (CDC, 2019). Diabetes care can be costly, like medical costs, and lost work wages total \$327 billion a year (CDC, 2019).

Diabetes Self Management

Diabetes is a lifelong illness that can cause health issues if not managed in the early phase of diabetes (Heter, 2019). According to Powers et al. (2017), being diagnosed with diabetes can be immensely challenging. ADA strongly recommends Diabetes Self-Management Education (DSME), when being diagnosed with diabetes, and continues to be managed. DSME is needed to

fulfill and continue behaviors and coping skills required to self-manage regularly. DSME includes the background and information about diabetes to help individuals with guidance in decisions and lifestyle choices to improve health results (Powers et al., 2017). According to Heter (2019), Diabetes self- management education (DSME) is interpreted as a multidisciplinary approach to managing the disease, including the patient, diabetes educator, primary care clinician, pharmacists, nutritionist, and peer support.

DSME programs focus on the patient's self-care behaviors and provide education on nutrition, physical activity, medication adherence, and risk reduction (Heter, 2019). According to Heter (2019), the American Association of Diabetes Educators (AADE) has initiated seven areas of diabetes self-management, which include (1) healthy eating, (2) physical activity, (3) self-monitoring, (4) medication adherence, (5) problem solving, (6) reducing risk, and (7) healthy coping. Education has appeared to have the same positive impact in treatment as medication, and there has been a connection with DSME programs and a reduction in hemoglobin A1C (Heter, 2019).

Medication Adherence

Medication adherence is an essential aspect of diabetes self- management (DSM). According to Baghikar et al. (2019), oral medications and insulin, an injection is used as a form of medicines for diabetes. Oral medications and insulin are highly encouraged to manage A1C levels and improve overall health (Baghikar et al., 2019). Low medication adherence is a significant roadblock in DSM and increases health disparities (Baghikar et al., 2019). Baghikar and colleagues (2019) conducted a qualitative study using semi-structured interviews that targeted the Mexican-American and Hispanic or Latino populations to identify participants' concerns concerning diabetes medication and its effects (Baghikar et al., 2019).

Medication adherence barriers and facilitators were identified, which addressed the attitudes, awareness, views, and exterior factors. One of the most common supports for medication adherence was family support, which included partners and children of individuals with diabetes. Family support can also improve and encourage other DSM areas, such as nutrition and exercise (Baghikar et al., 2019). One of the limitations of medication adherence is the cost of the medication, which Hispanics are most likely to have issues with in addition to food insecurity (Baghikar et al., 2019).

Physical Activity

According to the AMA (2004), it is essential to encourage physical activity as a DSM component because it will significantly benefit the patient. Current studies have demonstrated the importance of including physical activity programs in diabetes treatment (AMA, 2004). According to AMA (2004), physical activity among individuals with diabetes includes long-term exercise plans included in their treatment, such as leisure activities and sports. Physical activity is essential in DSM because it has a better reaction due to the cells becoming more sensitive; therefore, insulin medication is more effective.

Nutrition

According to NIDDK (2016), food is an essential part of supporting a healthy lifestyle when living with diabetes. Maintaining a proper diet specific to the needs of diabetes is vital to managing diabetes because it balances the sugar levels of an individual (NIDDK, 2020). The appropriate diet for a diabetic individual is just as important as medication adherence. According to Rogus (2015), diets that consist of low-calorie and nutrient-dense food result in positive health outcomes, such as reducing obesity, heart disease, and some forms of cancer. Also, it reduces the risk of diet-related diseases like diabetes (Rogus, 2015). The AADE emphasizes a balanced diet's

seriousness related to carbohydrates, fruit, vegetables, lean proteins, nutrition education, counting carbs, and portion control (Heter, 2019). Having an early knowledge of a diet and implementing those practices will prepare patients to use the behaviors they learn in their day-to-day routines (Heter, 2019).

Healthy Kitchens, Healthy Lives (HKHL) is a yearly conference supported by Harvard School of Public Health, the Culinary Institute of America, and the Samueli Institute (Eisenberg et al., 2015). According to Eisenberg et al. (2015), the HKHL conference consists of educational and experiential education from presentations and has engaged over 3,500 health professionals. The HKHL conference provides hands-on learning, such as cooking and food demonstrations (Eisenberg et al., 2015). According to Eisenberg et al. (2015), HKHL provides individuals attending the HKHL conference with updates on nutrition science, such as cooking healthy, affordable recipes, including family meals.

According to Eisenberg et al. (2015), professionals in health care with basic knowledge in culinary arts and nutrition science are an essential component in providing education in nutrition. However, including nutrition science in medical school will not satisfy patients' needs (Eisenberg et al., 2015). According to Eisenberg et al. (2015), health decisions and lifestyle behaviors happen outside of the clinical setting; therefore, different interventions to extend education on healthy behavior are needed. Various forms can motivate health behavior change, such as food demonstration classes and physical activity education.

Disparities and Mental Health

Studies have shown that discrimination is associated with depressive systems, the stress associated with having diabetes among the Hispanic or Latino population, and adverse outcomes for DSM (LeBrón et al., 2019). Discrimination among the Hispanic or Latino population can

harm mental health and glucose levels (LeBrón et al., 2019). Survey data collected at baseline as part of a diabetes intervention analyzed racial/ethnic discrimination with depressive symptoms and stress related to diabetes (LeBrón et al., 2019). Results from the study demonstrated essential findings: first is that two-thirds of Hispanic or Latinos experience racial/ethnic discriminations, and the second finding is that racial/ethnic discrimination influences depressive symptoms and diabetes stress (LeBrón et al., 2019).

Having recognition of discrimination connections to race/ethnicity in healthcare rather than just discrimination broadly will help find methods to improve health outcomes (LeBrón et al., 2019). Diabetic individuals who are Hispanic or Latino experiencing ethnic/racial discrimination are critical stressors that affect their daily lives and mental and physical health (LeBrón et al., 2019). Racial/ethnic discrimination can aggravate diabetes-related stress and depressive symptoms (LeBrón et al., 2019). According to Murayama et al. (2017), to improve health disparities among the Hispanic or Latino population, community health worker (CHW) interventions are a successful method in improving lifestyle choices and health outcomes for specific racial/ethnic communities.

COVID-19 (Coronavirus) and Hispanic or Latino Population

According to Calo et al. (2020), the Hispanic or Latino population has become more vulnerable in contracting the COVID-19 virus. According to Calo et al. (2020), there are many reasons why the Hispanic or Latino population is more likely to be diagnosed with COVID-19. For example, they experience different forms of exposure, vulnerability, and health care access. Individuals in the Hispanic or Latino population have frontline occupations, including grocery stores, cleaning, food delivery, and waste management services, that consistently put expose them to contracting COVID-19 (Calo et al., 2020).

Additional challenges that the Hispanic or Latino population has to include living conditions fear, anxiety, language barriers, lack of healthcare access, and lack of health education (Calo et al., 2020). According to Calo et al. (2020), twenty-five percent of Hispanic or Latino individuals live in households with multigenerational family members, such as older adults. According to Carlo et al. (2020), It is challenging to live in multigenerational households with limited space to take the proper precautions to prevent more former family members from getting COVID-19.

CCOVID-19 (Coronavirus) and Diabetes

COVID-19 pandemic is having a significant impact on individuals worldwide. According to Angelidi, Belanger, & Mantzoros (2020), a critical acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the cause of COVID-19. Individuals with a compromised immune system, such as individuals with diabetes, are at higher risk of becoming infected with COVID-19. According to Angelidi et al. (2020), the United States' first confirmed case was on January 20, 2020. Two early case series conducted to observe critical patients that became admitted in the intensive care unit (ICU) showed an incidence of diabetes of 58% and 33.3% (Angelidi et al., 2020). A common risk factor of SARS-CoV-2 infection diabetes was found in preliminary data collected by the United States (Angelidi et al., 2020).

According to Kumar et al. (2020), a meta-analysis demonstrated the connection between individuals with diabetes and mortality rates for COVID-19. The meta-analysis included the severity rates of COVID-19 among individuals with diabetes (Kumar et al., 2020). The meta-analysis consisted of thirty-three studies, including 16,003 patients and demonstrated relation among individuals with diabetes and COVID-19. The review showed that individuals who have diabetes are twice as likely to contract COVID-19 than individuals that do not have diabetes

(Kumar et al., 2020). According to Kumar et al. (2020) and individuals with diabetes contracting COVID-19, individuals with diabetes are twice as likely to perish due to COVID-19.

COVID-19 (Coronavirus) impacts on Food Insecurity

Food insecurity is a risk factor that influences making healthy choices in diabetes self-management, such as making unhealthy choices in diet and medication and economizing medications (Wetherill, Williams, White & Seligman, 2019). The 2018 standards of medical care in the American Diabetes Association (ADA) advocate that it is essential to have community support, such as food resources and self-management support (Wetherill et al., 2019). A study called The Hunger in America demonstrated that 33% of the households have at least one member per household with diabetes (Wetherill et al. 2019). According to Wetherill et al. (2019), 65.1% of families of people with diabetes disclosed that they include food pantry services in their monthly budgeting. More than half of households of people with diabetes revealed they use food pantry services about 45.4% of the year.

According to Wetherill et al. (2019), food pantry services provide social support and food assistance; however, not all provide the necessary products and services for DSME. Individuals who have diabetes who live in households with food insecurity do not have sound nutritional care, such as not having enough vegetables or fruit than individuals who do not live in food-insecure houses (Wetherill et al. 2019). According to Wetherill et al. (2019), food insecurity results in households with individuals who have diabetes having to decide to prioritize food or medicine and medical care every month. Food insecurity significantly impacts medication adherence and making healthy food choices. Food insecurity challenges have increased within these last few months due to the global pandemic.

The COVID-19 pandemic has brought a challenging time to our communities and has affected our nutritional necessities. According to Brody (2020), the nation has not focused any attention on the lack of access to dietary needs and the need to support and maintain a healthy immune system. According to Reiley (2020), the spread of the COVID-19 outbreak makes it more challenging for food banks and food pantries to maintain their services when they are in demand. Since the unemployment rate due to the COVID-19 pandemic is increasing, the necessity for food banks and food pantries will increase.

COVID-19 (Coronavirus) & Unemployment

In addition to the COVID-19 pandemic as a public health crisis, it is also an economic crisis, including individuals that have not contracted COVID-19 (Tepper, 2020). According to Crayne (2020), over thirty million adults have applied for Unemployment in the United States, and it will continue to be a challenge after the end of the COVID-19 pandemic. There is a high chance that millions of individuals in the United States will lack access to stable employment when social distancing and virus protection policies discontinue (Crayne, 2020).

According to Crayne (2020), research has identified that successfully finding reemployment relies on an individual's behavior in finding employment. An individual's job search behaviors are influenced by the individual's self-efficacy (Crayne, 2020). To succeed in reemployment, an individual needs to believe that they are fit to have that job, supported by actual events and hurt by adverse events (Crayne, 2020). According to COVID-19, it can affect individuals about employment, resulting in a significant increase in Unemployment.

Conclusion

In addition to health disparities among the Hispanic or Latino population, which affect mental health, since the COVID-19 pandemic has begun, there has been limited support in the

nutritional needs of diabetic patients. Nutrition is an essential part of diabetes self-management, in which individuals of low-income communities already had challenges in accessing their dietary requirements before the COVID-19 pandemic began. Also, medication adherence and exercise are other essential aspects of DSM, which has become affected by the COVID-19 pandemic. The COVID-19 epidemic has increased food insecurity among all communities and has increased food insecurity even among economically challenged communities.

Agency Profile

Samaritan House is a non-profit organization, located in San Mateo County that provides social and healthcare services. Samaritan House usually offers services and resources to over 14,000 individuals annually but has expanded due to COVID-19 to serve over 23,000 and is growing daily. Food and nutrition services are at 300% of normal, and demand grows each week markedly. Food pharmacy demand has grown over 60% since COVID-19. The populations that Samaritan House serves are the low-income and homeless people of San Mateo County.

Samaritan House has two clinic locations in San Mateo County that provide health and dental services. Samaritan House Clinic has dedicated professional staff and volunteers to work together to offer their services. Most patients are ineligible for Medi-Cal insurance coverage and cannot pay out of pocket. Patients seen at the clinic have jobs in gardening, food service, and house cleaning, which do not provide health insurance benefits. The Samaritan House Clinic gives access to low-income and uninsured individuals living in San Mateo County.

The primary service combines robust outpatient health services with robust human/social services to cover the spectrum of the social determinants of health, including food and nutrition, shelter, clothing, health care, financial assistance, and more. Both locations of Samaritan House Clinic have a food pharmacy program for their diabetic patients. The diabetic patients seen by

the providers at Samaritan House Clinic give a prescription for fresh produce from the food pharmacy weekly. Not only is the food pharmacy produce for the patients, but the order is also for their family members. The clinic collaborates with the local food bank to provide fresh produce weekly for the food pharmacy patients. The food pharmacy services are only for Samaritan House Clinic patients diagnosed with diabetes.

Problem Statement and Project Goals

According to Vandenbosch et al. (2018), DSME is an essential aspect of treatment results, and AADE identifies seven self-care behaviors to maintain diabetes. The seven actions that are defined by AADE are eating healthy, exercise, monitoring sugar levels, medication adherence, and problem solving concerning nutritional challenges (Vandenbosch et al., 2018). According to Vandenbosch et al. (2018), healthy coping, which consists of social support, handling stress, and identifying behaviors that need to be changed to avoid developing other health risks, is defined as self-care behaviors diabetes.

Literature shows that nutrition is an essential aspect of diabetes self-management. According to Vandenbosch et al. (2018), making the lifestyle choice of having a healthy diet can significantly impact diabetes treatment and help prevent the risk of additional complications. According to Russell et al. (2019), diabetes is an evolving issue in the United States among the Hispanic population. It is predicted that by 2050 the increase of diabetes among the Spanish people will increase from 5.47% to 12.38 (Russell et al., 2019). According to Russell et al. (2019), there are many barriers for the Hispanic population that is more than just economic challenges. The food pharmacy program at Samaritan House Clinic supports their patient's DSME.

Patients referred to the food pharmacy program can pick up their food products and produce weekly at Samaritan House Clinic. However, not all patients seek food pharmacy services when their doctor sends them. Also, the COVID-19 pandemic has affected the patients referred to the food pharmacy in various forms. The first goal of the needs assessment is to identify the effects that COVID-19 has on the patients referred to the food pharmacy services. The second goal is to identify any food insecurity challenges among the patients referred to the food pharmacy due to the COVID-19 pandemic. The third goal of the needs assessment is to identify any barriers patients referred to the food pharmacy have in seeking services.

Needs Assessment methods

Questions and Aims

The needs assessment was used to determine the effects that COVID-19 has had on patients of Samaritan House Clinic referred to the food pharmacy by answering the following questions.

- Have the patients referred to the food pharmacy sought out services during the COVID-19 pandemic?
- Have food pharmacy patients managed their diabetes during the COVID-19 pandemic?
- What motivates or encourages patients to seek food pharmacy services?

Study Design Overview

Qualitative data was used for the needs assessment, such as observation, demographic surveys, and in-depth interviews. The observation method was used during a food demonstration that was provided by the food bank. I only had the opportunity to observe one food demonstration due to COVID-19 pandemic. My preceptor recommended open-ended questions

when receiving information from patients, which resulted in using in-depth interviews in collecting data. The demographic survey included a question regarding forms of transportation.

Before the COVID-19 pandemic, I was planning to conduct a program evaluation in understanding the barriers patients had when seeking services at the food pharmacy. However, with my advisor's approval at the University of San Francisco and my preceptor at Samaritan House Clinic, I pivoted my project to a needs assessment in understanding the effects that the COVID-19 pandemic has had on food pharmacy patients. Although I pivoted my project, I was still able to identify barriers influenced by the COVID-19 pandemic that patients have when seeking food pharmacy services.

Participants

Patients who participated in the interviews are patients from Samaritan House Clinic referred to the food pharmacy. Requirements to obtain services from food pharmacy are to be a Samaritan House Clinic patient, referred by a doctor of the clinic, and diagnosed with diabetes. Participants interviewed included participants who seek services frequently, not as often, and do not seek assistance. Participants were all primarily Spanish speaking.

Data Collection Tools

Food Demonstration

The food demonstration Provides nutrition education for a diabetic diet. The food demonstration is provided to patients referred to the food pharmacy. The food bank offers a food demonstration class and partners with the clinic to present the class. The food demonstration typically was provided once a month but was stopped due to the COVID-19 pandemic. I had the opportunity to attend one food demonstration in February 2020. Two food bank volunteers set up at the clinic for a food demonstration class, which was attended by six to seven participants. I

then assisted in translating from English to Spanish during the food demonstration when the volunteer discussed nutritional information to the participants. The participants were offered flyers and pamphlets with nutritional information. One volunteer helped cook the recipes provided and explained the steps and ingredients used in preparing the recipes. The food supplied by the food bank for the food pharmacy is used during the food demonstration to cook the recipes.

Demographic Survey

The purpose of the demographic survey is to identify the background of the participants interviewed. The demographic survey consisted of four questions. I was able to translate the demographic survey from English to Spanish. I am fluent in both English and Spanish. Two clinic staff members and one professor from the University of San Francisco revised the questions. The demographic survey was conducted before the interview after receiving verbal consent from the participants. The demographic survey is shown in Appendix C in English and translated in Spanish.

In-depth Interviews

The interview questions provided are in both English and Spanish. The interview questions were revised by two staff members of the clinic and a professor at the University of San Francisco. After receiving verbal consent, the first three interviews were completed outside of the clinic while patients waited for their food pharmacy produce, which had a few challenges. The consent form is shown in Appendix A and translated in Spanish in Appendix B. There were some challenges to data collection: some food pharmacy patients send their family members to pick up their produce, maintain social distancing, wear a mask, and the weather was challenging while conducting the interviews.

These challenges influenced me to switch to telephone interviews, which had fewer obstacles to overcome. I wrote down the responses the participants provided in response to the questions. Eight interviews were conducted over the phone after the participants provided verbal consent. I called a total of eighteen patients on the list, and only eight participants completed the interview. The other eleven patients did not answer their phone, or the phone was disconnected. The interview questions are shown in both Appendix D and E, in English and translated in Spanish.

Sampling Strategy

I obtained a list of one hundred and seventy patients referred, enrolled, or who used food pharmacy services. The clinic was in the process of updating its list during the time of their interviews. Pre-diabetic, diabetic, and a few non-diabetic patients were found on that list by the clinic staff. The clinic made a final decision on providing services for only diabetic patients. The pre-diabetic or not-diabetic patients were referred to another location that offers food bank services for clinic patients. I assigned a number to each patient on the list of the patients of the food pharmacy. A random number generator website called True Random Number Service was used to choose the order of which client to recruit over the phone.

Data Collection Procedures

In-person, I recruited three participants, and each participant gave verbal consent before participating. The participants were waiting outside the food pharmacy to pick up their food supply when I did the three interviews. Social distancing was practiced during the in-person interviews. The participants and I were wearing masks. Additionally, eight in-depth interviews were conducted over the phone with the patients who seek food pharmacy services at the clinic.

The interviews were completed in a six-week time frame. The interviews were conducted during the COVID-19 pandemic.

Data Analysis

Qualitative data collection was conducted during the needs assessment by conducting interviews with patients referred to the food pharmacy. The qualitative data analysis software NVivo was used for data analysis for the interviews. Using NVivo, I was able to organize the findings of the interviews. Observation and note taking were done during the food demonstration class at Samaritan House Clinic. Results are summarized and will identify challenges and needs for the patients referred to the food pharmacy.

Needs Assessment Results

Food Demonstrations

The food demonstration participants took part in peer discussions on specific topics such as different types of recipes. In addition to the food bank volunteers, participants learned new information from each other. They felt comfortable to discuss diabetes nutrition with each other and ask questions to the food bank volunteers. Participants wanted to seek more specific answers to their sugar and carbohydrate intake questions; however, it is challenging because only a nutritionist or doctor can provide that detailed information. The Food demonstration was offered before the social distancing and shelter in place orders due to COVID-19 pandemic.

Demographic survey

The demographic survey consisted of asking the age, country of origin, preferred language, and form of transportation to the food pharmacy. The purpose of the demographic survey was to identify the background of the participants. The question about the form of transportation was to understand if transportation is a barrier in seeking food pharmacy services.

The age range of participants was between the ages of forty to sixty-six years old. All eleven participants' countries of origin were from Hispanic or Latino countries. The preferred language of all participants was Spanish. Transportation was addressed in the survey in which ten out of eleven participants had access to car transportation. The ten participants having access to car transportation include receiving a ride from another individual, owning a car, or borrowing a car. Only one participant out of the eleven used public transportation, such as the bus.

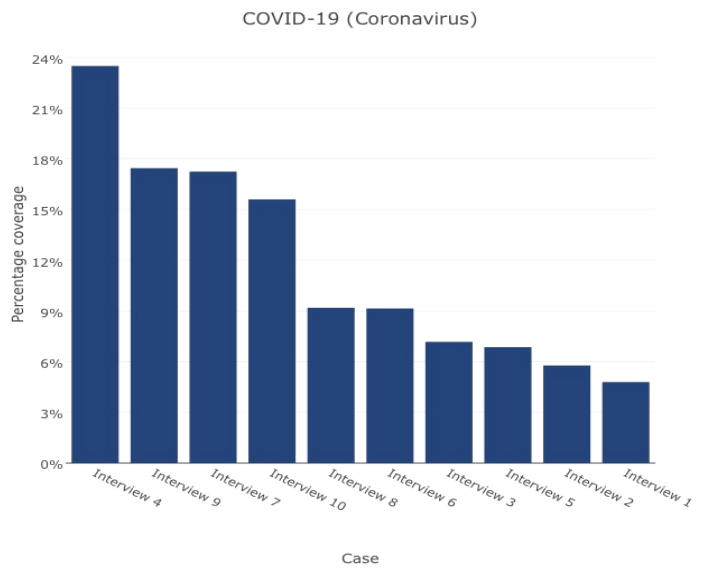
In-depth Interviews.

There were two versions of the interview questions, one for participants who seek food pharmacy services, and the second for participants not seeking pharmacy services. A total of eleven participants were interviewed, three in person, and eight over the phone. Participants who seek and do not seek food pharmacy were identified during the interview.

COVID-19 (Coronavirus)

One of the main themes in the interviews was COVID-19. A total of ten participants reported challenges due to the COVID-19 pandemic. Subthemes found within the main theme of COVID-19 pandemic included finances, employment, and other problems. Below Table 1.1 demonstrates how many participants addressed the topic of COVID-19.

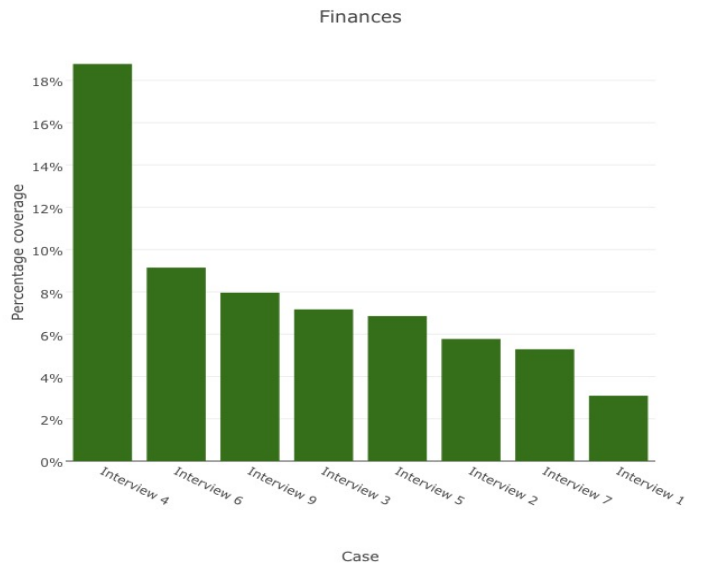
Table 1.1



Finances

COVID-19 pandemic has caused many financial problems. A total of eight participants discussed financial hardships during the interviews. Six participants discussed how they benefited from the food pharmacy services concerning their finances. Below table 1.2 demonstrates how many participants discussed economic challenges due to COVID-19.

Table 1.2



Employment

Employment is another complication caused by the COVID-19 pandemic, which consists of unemployment or inconsistent employment throughout the COVID-19 pandemic. A total of five participants discussed employment challenges for them or another individual in the household. Participant two said, “I work once in a while so I go to the food pharmacy more often due to finances.”

COVID-19 (CV) Challenges

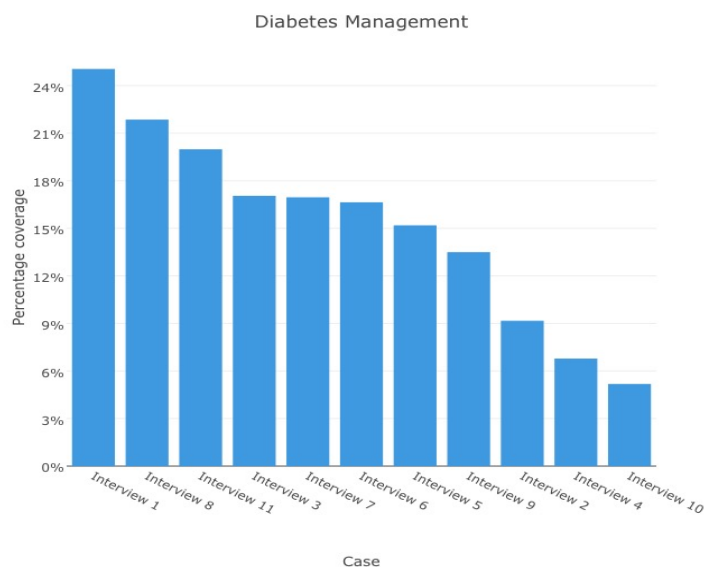
Additional challenges due to COVID-19 included anxiety, stress, pain, travel restrictions, and difficulty when going to the market or store to purchase food. Only Four out of the 11 participants had additional challenges other than finances, employment, and social distancing. Only two participants discussed their feelings of anxiety due to COVID-19 pandemic. Out of the eleven participants, one participant stated she had body pain due to her stress. One participant was out of the country before the pandemic and has not been able to get back into the United States due to the travel restrictions. Participant nine said, “I have had a lot of anxiety, which I believe contributed to the high levels. I think what's going on these last few months has increased and caused my anxiety.”

Diabetes Management

Literature has shown that diabetes self-management is essential in maintaining health. Diabetes self-management includes exercising, nutrition, and medical adherence. Samaritan House Clinic provides both medication and nutritional support for their diabetic patients. In addition to the food pharmacy, Samaritan House Clinic has a small pharmacy and provides medicines for their patients. All participants addressed diabetes-self management in their

interviews. Table 1.3 demonstrates the percentage of how many times diabetes-self management was discussed in the interviews by participants.

Table 1.3



Exercising

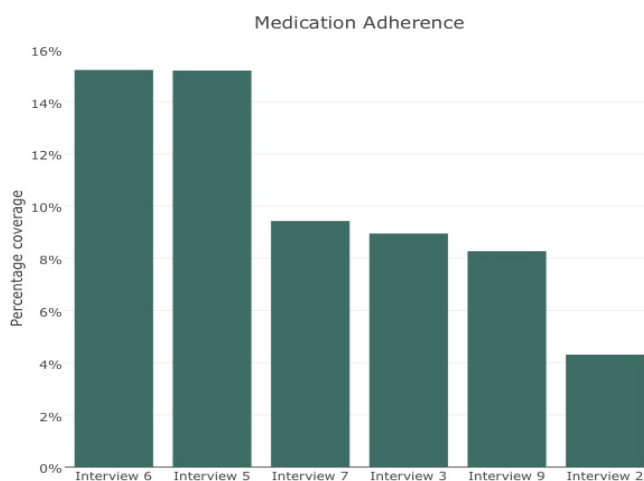
Studies have shown that exercising is strongly encouraged for diabetes self-management. A total of three participants addressed putting exercise into practice for diabetes self-management. A total of two participants regularly walk to exercise, and one participant uses dancing as a form of exercise. The participant that uses dance as a form of exercise maintained their nutritional and physical activity needs while being stuck in a different country during the COVID-19 pandemic. Participant eight said, “I dance every day for exercise, and I feel good.”

Medication Adherence

The literature discusses that medication adherence is an essential part of diabetes self-management. A total of six participants addressed medication adherence in their interviews. Out of the eleven participants, five participants discussed that they have been able to control their diabetes in managing their medications. Only one participant who was newly diagnosed with

diabetes when the COVID-19 pandemic began addressed that he has had challenges managing his medications. Table 1.4 below displays the number of participants who addressed medication adherence.

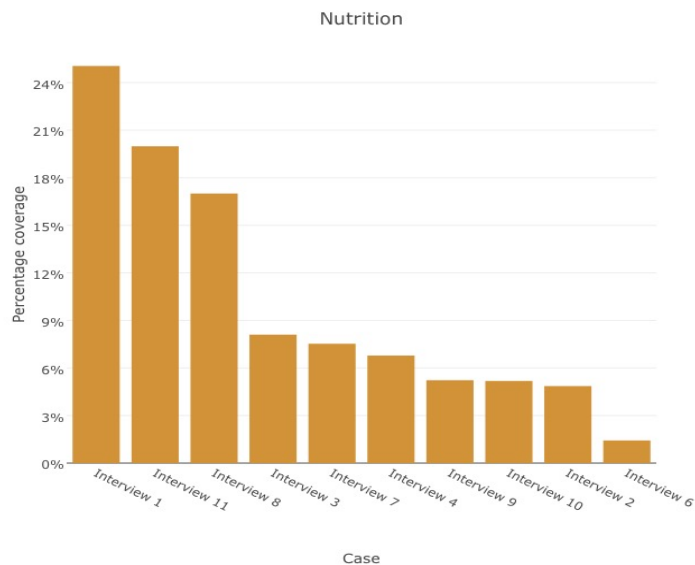
Table 1.4



Case

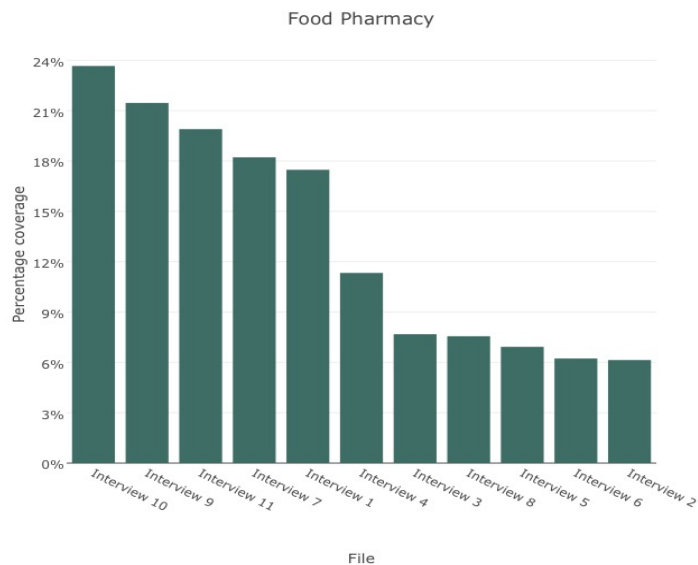
Nutrition

In addition to exercise and medication adherence, nutrition is essential for diabetes self-management. Out of the eleven participants, ten participants addressed their food in the interviews. Out of the eleven participants, eight participants addressed managing their nutrition to control their sugar intake. A total of eight participants discussed their daily meals, such as what type of food they try to eat and foods they try to avoid. A total of two participants addressed not being able to manage their nutritional needs during the interview. Table 1.5 below demonstrates the amount of participants that addressed nutrition in the interviews

Table 1.5

Food Pharmacy

The food pharmacy receives produce from the local food bank. The food pharmacy hours to pick up products is limited due to the COVID-19 pandemic. Patients can pick up food weekly while maintaining social distancing and wearing a mask. Staff and volunteers prepare boxes and bags for patients with produce, and then patients take it to their car. Before the COVID-19 pandemic, patients could enter the food pharmacy and pick the products and produce, however, due to the COVID-19 pandemic Samaritan House Clinic staff created a new workflow. All participants discussed food pharmacy services. Motivations and challenges in seeking services were addressed as well as reasons not to find assistance. Table 1.6 below demonstrates the number of participants that discussed the topic of the food pharmacy.

Table 1.6

Challenges

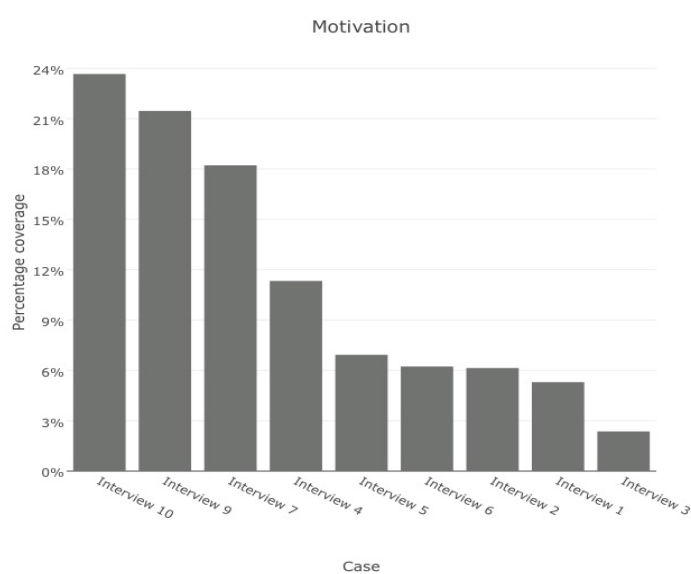
Out of the eleven participants, three participants discussed challenges in seeking food pharmacy services during the COVID-19 pandemic. Travel restriction policies have been put in place in various counties due to the COVID-19 pandemic. As a result, one participant traveled to another country before the COVID-19 pandemic and has not returned to the United States. Public transportation is a limitation to one participant due to her concerns about social distancing on the bus; therefore, she has not sought food pharmacy services. Participant one said, “I tried to go once to the Food Pharmacy and I have not gone due to public transportation and there is no social distancing on public transportation. Since there is no social distancing on the bus I am not able to go to the Food Pharmacy.” Also, scheduling conflicts and forgetting to pick up the food caused one participant not to find food pharmacy services.

Motivation

Understanding the motivation of patients when seeking food pharmacy services is essential when providing services. Out of the eleven participants, nine participants addressed

their motivation in seeking food pharmacy services. Out of eleven participants, seven participants addressed that the “help” the food pharmacy provides motivates them. Participant six said that it was his first time seeking food pharmacy services. Participant six discussed that he had heard positive feedback about the food pharmacy from other patients. Below, Table 1.7 displays the amount of participants who addressed motivation in seeking food pharmacy services.

Table 1.7



Reasons to Not Seek Services

During the interviews, one participant has not sought food pharmacy services since he was approved for assistance. The participant was referred to the food pharmacy before the COVID-19 pandemic. The participant addressed that he does not need to seek food pharmacy Services while preferring to give other patients referred to the food pharmacy program that need it more. Participant eleven mentioned, "I have never gone because I do not want it to go to waste, while someone who needs it more than me can have it."

Video

A video was created for both new and current food pharmacy patients. The video includes instructions on enrolling in the food pharmacy when diagnosed with diabetes and the benefits of using the services. It also contains instructions on picking up the food at the pharmacy, such as a reminder of social distancing and wearing a mask. The video is still pending approval from Samaritan House Clinic to send to their patients.

Discussion

Information about the COVID-19 pandemic is still emerging due to COVID-19 being a new disease (Kumar et al., 2020). According to Kumar et al. (2020), case-control studies have been conducted and have demonstrated that individuals diagnosed with COVID-19 who already have diabetes mellitus have increased mortality. Also, individuals diagnosed with COVID-19 and have diabetes mellitus have a critical clinical experience (Kumar et al., 2020).

In addition to health concerns, COVID-19 pandemic has brought up other concerns for participants in this needs assessment. Results showed that eight out of eleven participants addressed financial challenges when asked about the food pharmacy services. Having the necessity to obtain food was a motivator in seeking food pharmacy services, nine out of the eleven participants discussed during the interviews.

Limitations

One of the significant limitations of the needs assessment was the COVID-19 pandemic. The COVID-19 pandemic brought up many challenges, such as time constraints during the needs assessment and maintaining social distancing. Samaritan House Clinic limited the hours to the food pharmacy due to the shelter in place, social distancing policies, and curfew orders. Also, food demonstrations were not available to food pharmacy patients since it used to take place at Samaritan House Clinic. Due to the COVID-19 pandemic, Samaritan House Clinic transitioned

to phone appointments and limited in-person appointments. Recruitment is more accessible in person than over the phone. When recruiting participants, phone numbers were disconnected or did not have a voicemail set up.

In addition to the COVID-19 pandemic, another limitation was that Samaritan House Clinic was updating its list of patients referred to the food pharmacy. Also, the needs assessment had a small sample size of eleven participants due to time constraints. Many food pharmacy patients send their family members to pick up their produce and products, which was a challenge when recruiting participants in person.

Implications for Practice

Literature has addressed that diabetic individuals and the Hispanic or Latino population are at higher risk of being diagnosed with COVID-19. In addition to taking the proper precautions during the COVID-19 pandemic, DSME continues to be an essential aspect of maintaining diabetes. DSME consists of medication adherence, physical activity, and nutrition, in which Samaritan House Clinic has the food pharmacy to support nutritional needs. Also, Samaritan House Clinic has a pharmacy to provide medication for their patients.

Studies and research have shown that the Hispanic or Latino population is at higher risk of having diabetes than other people. Also, there is a gap in research among the Hispanic or Latino population and diabetes self-management. The Latino or Hispanic population is a highly vulnerable population currently being diagnosed with diabetes and COVID-19, which can cause fear among the Latino or Hispanic community. The COVID-19 pandemic has affected food pharmacy patients by creating different challenges in their lives and transitioning to using more technology for health care services.

Recommendations

Policies

According to American Health Consultants (AHC) Media (2020), the office of Civil Rights addressed that there will not be penalties for healthcare providers using telecommunication that are non-compliant to Health Insurance Portability and Accountability Act (HIPAA) regulations. Penalties will not occur if used under the right circumstances due to the COVID-19 public health crisis. The COVID-19 Pandemic has increased the number of technology communications among healthcare facilities and their patients. Future research, feedback on access, and knowledge of technology from the target population should be a part of future evaluations and assessments.

The Federal Communication Commission (FCC) addressed a final regulation on April 9 to put into place the COVID-19 telehealth program (AHC Media, 2020). According to AHC Media (2020), the COVID-19 telehealth, the program supports healthcare providers by providing a \$200 million emergency fund to help providers obtain telecommunications services and devices to use telehealth. The COVID-19 Telehealth program will help healthcare providers communicate with their patients from home or other locations (AHC MEDIA, 2020). According to AHC MEDIA (2020), the COVID-19 program falls under the funding of the COVID-19 Aid and Relief and Economic (CARES Act)

Technology

Since the COVID-19 pandemic is continuing to be a public health crisis, in-person contact is becoming more limited in clinics in hospital settings. According to AHC (2020), forms of technology communications include standard video chat or messaging. Typical applications are Zoom, Skype, and Facetime for video communication. Other social media platforms used for communication are Facebook Messenger and Google Hangouts (AHC, 2020). Addressing health

education information to patients can be done by using these platforms of communication. Individuals need to have access to a mobile phone, smartphone, and other devices to use different communication platforms. One of the most common forms of communication is text messaging, which has been successful in DSM (Rollo et al., 2016). Studies have found that text-messaging results show progress in diet and exercise, including a daily intake of healthy food and increasing physical activity (Rollo et al., 2016).

Diabetes is a challenging disease that involves an individual making lifestyle choices daily, including healthy nutrition, physical activity, medication to meet their target goals (Rollo et al., 2016). According to Rollo et al. (2016), technology can be a source for individuals to maintain their nutrition needs, physical activity behaviors, and improve outcomes. Since nutrition and physical activity are the most challenging and vital aspects of DSME, web-based programs should become available for support (Rollo et al., 2016). Web-based programs can provide social support and convey information in various forms, such as audio, video, and written (Rollo et al., 2016). According to Rollo et al. (2016), studies have shown that using web-based services as interventions and DSME has been more effective than traditional care.

Web-based programs and virtual reality are sources that can be used for DSME, specifically during the time of the COVID-19 pandemic. Web-based programs examples include the "GoCARB" application, which tracks dietary information and the Nintendo Wii Fit Pulse that provides physical activity exercises for adults (Rollo et al., (2016). According to Rollo et al. (2016), virtual reality is a digital environment that portrays physical existence, such as visual and auditory. The individual using virtual reality will have the ability to control their virtual environment, including avatars of health professionals, health education sessions, and discussions in the supermarket setting (Rollo et al., 2016). For a web-based program and virtual

reality to be successful among the target population, technology-providing training for the individuals will help the web-based application succeed (Rollo et al., 2016).

Culture

Disparities in research exist in medication adherence among the Hispanic or Latino population with diabetes (Baghikar et al., 2019). Also, there is not much research about the influence that family support has on medication adherence for diabetes within the Hispanic or Latino population (Baghikar et al., 2019). According to Baghikar et al. (2019), language barriers are another challenge in maintaining medication adherence among the Hispanic or Latino population. Furthermore, a suggestion is to tailor DSME to the Hispanic or Latino community for future research (Baghikar et al., 2019). DSME resources need to be culturally sensitive to patients and discuss beliefs resulting in poor medication adherence among the Hispanic or Latino population and recommending support for the target population by providing educational resources for clinicians on intervention development (Baghikar et al., 2019).

Family Participation

According to Baghikar et al. (2019), among the Hispanic or Latino population, it is recommended to include family members in participating in the patient intervention to support medication adherence. According to Felix et al. (2020), including family members in DSM programs for diabetes patients has a high effective rate in improving diabetic patients' health outcomes. There is a lack of literature regarding participating in family support in DSME. Not only can it have positive health outcomes for the diabetic family member but also the other family members since diabetes can be hereditary (Felix et al., 2020).

According to Felix et al. (2020), a family participation intervention was done during an eight week time period, which consisted of one class a week of seventy-five minutes. The course

includes family member participation in instructive health education, visual learning models, and storytelling (Felix et al., 2020). Question and answer sessions addressing cultural examples and beliefs were discussed in the class (Felix et al., 2020). According to Felix et al. (2020), setting goals amongst family members was encouraged since goal setting is essential in behavior change, but setting goals was optional not required. The targets consisted of methods of how family members can support the diabetic participant (Felix et al., 2020). As a result, DSME that includes and has family engagement can improve the participant's health; however, lack of family members' attendance can affect the outcome (Felix et al., 2020).

Self-Efficacy

Culturally sensitive services and information should be provided to patients to improve health outcomes and increase self-efficacy among diabetic patients (Murayama et al., 2017). According to Jiang et al. (2019), the social cognitive theory found by Bandura, explains that self-efficacy is essential for directly affecting behavior. Being able to believe in oneself to have the ability to do a particular task or change behavior is self-efficacy (Jiang et al., 2019). According to Jiang et al. (2019), a cross-sectional study was used to find self-efficacy, education, and diabetes-related stress affecting DSM behaviors. As a result, self-efficacy foresees DSM behaviors. The social cognitive theory also addresses that emotional effects can influence the judgment in an individual's self-efficacy Jiang et al. (2019). In addition to family support, providing other forms of assistance can be delivered to individuals with diabetes.

Teach Kitchens

Another recommendation is teach kitchens that should be accessible for anyone disregarding their socioeconomic status and training for medical providers (Eisenberg et al., 2015). According to Eisenberg et al. (2015), teaching kitchens are used as laboratories for

nutritional education for healthcare providers and can be used for patients in the future. The Share, Our Strength's Cooking Matters program, is a six-week-long course consisting of nutritional classes that provide nutrition information, hands-on experience, and market tours (Eisenberg et al., 2015). As of 2012, Cooking Matter has had 23,236 participants, and nutritional choices, home cooking, and label reading have increased. However, due to the COVID-19 pandemic, teaching kitchens can be challenging to use. In the future, once the COVID-19 pandemic has come to an end, teaching kitchens can be an option.

Conclusion

Overall, DSME will play a role in maintaining diabetes. However, a new challenge is faced now with the current COVID-19 pandemic. Also, there are gaps in DSME research among the Hispanic or Latino population, a continuously evolving population in the United States. Since the Hispanic or Latino population is vulnerable to both diabetes and COVID -19, different methods of DSME and COVID-19 precautions support needs to be accessible. Various forms of technology should arise through the COVID-19 pandemic in DSME specifically for the Hispanic or Latino population.

Appendix A

English Consent Form

Consent Form

Welcome

My name is Genesis Talavera and I am a current graduate student at the University of San Francisco in the Master of Science of Behavioral Health program. I am a graduate intern at the Samaritan House Clinic in the Food Pharmacy.

The beginning of the COVID-19 (Coronavirus) pandemic has been a stressful time for everyone in our communities. One of the major challenges that the COVID-19 (Coronavirus) pandemic has caused is challenges in accessing food. Research has shown that nutrition is a major part of maintaining diabetes. As part of my internship here I will be evaluating the Food Pharmacy services during the time of the COVID-19 (Coronavirus) pandemic to further support the Food Pharmacy clients.

You are invited to participate in an interview on your experiences of the Food Pharmacy during the time of the COVID-19 (Coronavirus) pandemic. Interview responses will be used to assess the strengths and needs of the Food Pharmacy during the COVID-19 (Coronavirus) pandemic in order to support the current and future clients during this time.

Please answer the following interview questions honestly and the best of your ability. The interview will last approximately 15 minutes.

Participation

Your participation in this following interview is completely voluntary. You may refuse to answer any of the interview questions or discontinue the interview. You may skip any questions that you may not want to answer.

Confidentiality

The interview is anonymous. All information collected will be kept in a locked file cabinet and password-protected computer. Your identity will be kept confidential, and your name will not be identified. Your responses will remain anonymous.

Contact

If you have any questions about this study you may contact me, Genesis Talavera, at gmtalavera@dons.usfca.edu.

***Please provide verbal consent if you “agree” or “disagree”**

Agree

Disagree

Appendix B

Consent form translated in Spanish

Formulario de consentimiento

Bienvenidos

Mi nombre es Genesis Talavera y soy estudiante de la Universidad de San Francisco en el programa de Maestría en Ciencias de la Salud del Comportamiento. Soy voluntaria de la Clínica Samaritana en la farmacia de comida.

El comienzo de la pandemia de COVID-19 (coronavirus) ha sido un momento estresante para todos en nuestra comunidad. Uno de los problemas principales que la pandemia del COVID-19 (coronavirus) ha causado, es el acceso a la comida. Investigación y estudios han demostrado que la nutrición es una parte importante del mantenimiento de la diabetes. Parte de mi tiempo aquí en la clínica Samaritana será evaluar los servicios de la farmacia de comida durante el período de la pandemia de COVID-19 (coronavirus), para ayudar a los clientes con diabetes.

Usted está invitado a participar en una entrevista sobre su experiencias con la farmacia de comida durante el tiempo de la pandemia de COVID-19 (coronavirus). Las respuestas de la entrevista se utilizarán para evaluar lo positivo y las cosas que deben mejorar en la Farmacia de Comida durante la pandemia de COVID-19 (coronavirus), con el fin de ayudar los clientes actuales y nuevos en el futuro.

Responda las siguientes preguntas de la entrevista honestamente y lo mejor que pueda. La entrevista durará aproximadamente 15 minutos.

Participación

Su participación en la siguiente entrevista es completamente voluntaria. Puede negarse a responder cualquiera de las preguntas, o para la entrevista en cualquier momento.

Confidencialidad

La entrevista es anónima. Toda la información colectada se guardará en un archivador cerrado y una computadora protegida con clave. Su identidad se mantendrá confidencial y su nombre no será identificado. Sus respuestas permanecerán anónimas.

Contacto

Si tiene alguna pregunta sobre este estudio, puede comunicarse conmigo, Genesis Talavera, a gmtalavera@dons.usfca.edu.

*** Por favor puede dar su consentimiento verbal si está "de acuerdo" o "en desacuerdo"**

De Acuerdo

En desacuerdo

Appendix C

Demographic Survey in English and translated in Spanish

Demographic Survey

Age:

Country of Origin:

Preferred Language:

What is your form of transportation?

Cuestionario Demográfico

Edad:

Pais de origen:

Idioma preferido:

¿Tiene acceso a transporte (autobus, automovil propio, no tiene acceso)?

Appendix D

Interview guide of Patients seeking services in English and translated in Spanish

Interview Guide (Patients Seeking Services)

English

1. Have you managed your diabetes during the COVID-19 (Coronavirus) pandemic? If yes, please explain.
2. Have you managed your diet during the COVID-19 (Coronavirus) pandemic? If yes, please explain.
3. What are some difficulties when getting food at the grocery store or supermarket?
4. Has the Food Pharmacy helped you during the COVID-19 (Coronavirus) Pandemic? If yes, please explain.
5. What motivates you to seek Food Pharmacy Services?

Spanish

1. ¿Ha podido controlar su diabetes durante la pandemia de COVID-19 (coronavirus)? En caso de que sí, explíquelo por favor.
2. ¿Ha mantenido su dieta durante la pandemia de COVID-19 (coronavirus)? En caso de que sí, explíquelo por favor.
3. ¿Cuales son las dificultades para obtener comida en el supermercado o tienda?
4. ¿Le está ayudando la farmacia de comida durante la pandemia COVID-19 (coronavirus)? En caso que si, explíquelo por favor.
5. ¿Qué te motiva a buscar servicios de la farmacia de comida?

Appendix E

Interview guide of patients not seeking services in English and translated in Spanish

Interview Guide (Patients Not Seeking Services)

English

1. Have you managed your diabetes during the COVID-19 (Coronavirus) pandemic? If yes, please explain.
2. Have you managed your diet during the COVID-19 (Coronavirus) pandemic? If yes, please explain.
3. What are some difficulties when getting food at the grocery store or supermarket?
4. Do you have any obstacles to obtaining Food Pharmacy services? If yes, please explain.
5. What will encourage you to seek Food Pharmacy services?

Spanish

1. ¿Ha podido controlar su diabetes durante la pandemia de COVID-19 (coronavirus)? En caso de que si, explíquelo por favor.
2. ¿Ha mantenido su dieta durante la pandemia de COVID-19 (coronavirus)? En caso de que si, explíquelo por favor.
3. ¿Cuales son las dificultades para obtener comida en el supermercado o tienda?
4. ¿Tiene algún obstáculo para obtener los servicios de farmacia de comida? En caso que si, explíquelo por favor.
5. ¿Qué lo motiva a buscar servicios de la farmacia de comida?

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