A DNP PROJECT

Evaluating the Effectiveness of a Patient-Centered
Type 2 Diabetes Prevention Program

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by

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Abstract

Introduction: According to the American Diabetes Association (ADA), 34.2 million adults or 10.5% of the population had diabetes (ADA, 2018). In 2015, 88 million Americans age 18 and older had prediabetes (ADA, 2018). Diabetes remains the 7th leading cause of death in the United States (U.S.). The “Prevent T2 Program” is an example of an initiative supported by the Centers for Disease Control and Prevention to address the increasing burden of prediabetes and type 2 diabetes in the U.S. The program aims to prevent diabetes and complications associated with the disease through diabetes self-management education (DSME) and peer support.

Methods: This project was a retrospective descriptive program evaluation, guided by the PRECEDE/PROCEED and Plan-Do-Study-Act models. The hemoglobin A1c levels pre-and-post intervention will be evaluated in pre-diabetics and type 2 diabetes participants after enrolling in the “Prevent T2 Program” at the Charles County Health Department. Data in the post-intervention survey includes HbA1c levels and knowledge acquisition from participants in two cohorts (January 2021 and June 2021). The outcomes of post HbA1c and the LMC Skills, Confidence, and Preparedness Index Scale were evaluated three to six months after the intervention was initiated.

Results: Data was collected three to six months after the initiation of the intervention. Three participants completed the survey (6.5% response rate) with self-reported HbA1c results pre-intervention and three to six month follow up of HbA1c results, while completing the DSME and peer support classes. Twenty-three questions from the LMC Skills, Confidence, and Preparedness Index tool were utilized to assess the participants’ comprehension of diabetes management resulting in the participants scoring above five in the three subscales.

Conclusions: Based on the results and low response rate, an adequate program evaluation cannot be determined regarding the effectiveness of the Prevent T2 Program in diabetes prevention and knowledge acquisition. The hemoglobin A1cs and feedback indicate diabetes self-management
education and peer support may influence participants to produce positive outcomes. In my opinion, the Prevent T2 Program is important and promising in its potential to promote disease management and self-care in pre-diabetic and diabetic individuals. Although further development and testing is warranted, it is recommended that the program incorporate the survey in their workflow during the initial enrollment and throughout the program to monitor the progress of participants and assess the program’s outcomes.

*Keywords: type 2 diabetes, diabetics, self-management, diabetes education, hemoglobin A1c, diabetes support, peer support*
Introduction

Diabetes mellitus (DM) is known as one of the most common chronic diseases in the United States (U.S.). According to the American Diabetes Association (ADA), diabetes remains the 7th leading cause of death in the U.S. in 2015, with one and a half million new diagnoses every year (ADA, 2018). The prevalence of diagnosed diabetes is projected to increase from 22.3 million (9.1% of the total population) in 2014 to 39.7 million (13%) in 2030 (Powers et al., 2020). Numbers will continue to rise to 60.6 million (17%) by 2060. There are an estimated 23.1 million individuals currently diagnosed with the disease who spend 2.3 times more in medical expenditures than individuals without diabetes. In 2017, the United States spent a total of $327 billion on diabetes care and management. Problems generated by this chronic illness expand beyond financial burdens, impacting the physical and mental well-being of a diagnosed individual. Type 2 diabetes can be controlled through appropriate diet, physical exercise, and medication adherence. Proper diabetes management is necessary for facilitating glycemic control and improving clinical outcomes. The Centers for Disease Control and Prevention (2020) suggests individuals with diabetes can cut their risk up to 58% under the age of 60 and 71% for people over 60 years old when individuals adhere to a lifestyle change program. High-quality diabetes self-management education and support (DSMES) have improved patient self-management, satisfaction, and glycemic control (ADA, 2020). Research has shown an integrated approach that includes clinical content and skills, behavioral strategies, and engagement with psychosocial concerns will enhance the patient’s disease management (Aronson et al, 2018).

Problem Description

After reviewing statistical data from the Charles County Health Department (CCHD) site, results indicate diabetes mellitus (DM) is a major local health problem that needs to be addressed.
The health department highlighted increased rates of diagnosed individuals, deaths, and emergency department visits related to this disease. The county's diabetes mellitus (DM) death rate is 24.5 per 100,000 populations, which is higher than the states’ rate of 19.2 per 100,000. The 2014 Charles County Diabetes Emergency Department (ED) Visit Rate was 244.2 per 100,000, which was higher than the Maryland state average rate of 204 per 100,000 (UMCRMC, 2018). According to U.S. News (2021), the diabetes prevalence in Charles County is 11.6% compared to the 10.5% national median. The CCHD recognized a need for lifestyle change for individuals suffering from diabetes in the community and joined the Centers for Disease Prevention and Control (CDC) National Diabetes Prevention Program efforts. They implemented the “Prevent T2 Program” in 2016 to reduce the rate and complications associated with DM. The Prevent T2 Program utilizes diabetes self-management education (DSME) and peer support simultaneously to improve patient outcomes and eliminate complications associated with DM. Participants work with a lifestyle coach that is trained by the CDC. The lifestyle coach assists each cohort with making manageable modifications that fit into their schedule and life. Activities include stress management, discovering how to eat healthy, incorporating exercise, and problem solving (CDC, 2020). Participants attend the Prevent T2 Program for a year. Classes are held weekly for 14 weeks, then transition to every other week until the sixth month. The last six months are monthly check-ins until graduation, which is year after the participant’s start date.

Despite the implementation of this program, the facility cannot validate the program’s success since the facilitator does not have a protocol that requires a follow up with participants at the end of the program. The facility currently accepts patients without screening and monitoring hemoglobin A1C values before and after participating in the Prevent T2 Program. Properly tracking participants becomes problematic for practice when there is no evidence of the
productivity or outcomes to prove the program is effective. To accomplish goals with the program, participants, and county’s population, the CCHD would benefit from an established protocol that includes initial A1c screenings of participants prior to attending the program and monitoring outcomes after program completion.

The purpose of this project was to evaluate the effectiveness of the Prevent T2 Program on the reduction of A1C levels and knowledge acquisition about type 2 diabetes. The first objective of this project was to examine pre- and post-program hemoglobin A1c levels among the participants in the Prevent T2 Program. The second objective was to assess the participants’ level of knowledge for disease management of type 2 diabetes after receiving diabetes education and peer support.

Available Knowledge

Overview of Search

This program evaluation project will examine whether pre-diabetic and diabetic patients receiving diabetes self-management education and peer support will decrease hemoglobin A1c values. Databases utilized in the search were CINAHL Complete (EBSCO), ProQuest Nursing, OVID Full-Text Nursing, CDC Wonder, and Clinical Practice Guidelines. Over 5,215 articles were generated during the search, and a total of 18 sources were selected. Sources chosen for this project were research studies and peer-reviewed articles published between January 2015 and June 2021. The articles contained all keywords used in the search: type 2 diabetes, diabetics, self-management, diabetes education, hemoglobin A1c, diabetes support, and peer support. The delimiters were DSME, support, and treatment.

Three themes were identified after reviewing multiple articles related to diabetes self-management education and peer support. The first theme defines diabetes self-management
education and peer support as a treatment regimen in managing a healthy diabetic lifestyle and maintaining glycemic control. Together they allow shared decision-making, facilitate open communication, and offer complementary health approaches. The next theme recognizes the benefit of providing support groups in the diabetic community. Support groups contribute to the effectiveness of improving health status and quality of life. The last theme conveys the influence of DSME and peer support on the physical, mental, and emotional state of diabetics.

**DSME and Peer Support as Treatment**

Diabetes self-management education (DSME) is a collaborative process in which the patient and care team work together to successfully manage diabetes through knowledge, skills, and behavior change. Peer support is defined as a group of people with common characteristics who can share knowledge and experience to manage day-to-day challenges (Yin et al., 2015). Research has shown there is a positive correlation between DSME and peer support to improve the patient’s efficacy, knowledge, and clinical outcomes. It is believed that the more control a patient takes with diabetes management, the better their outcome will be. An Australian study focused on several components of peer support to manage diabetes: assistance in daily health management, social and emotional support, linkage to clinical care and community resources, and provision of ongoing support to assist with DSM. Interventions included monthly group meetings with a trained leader, educational resources, outside experiences. Findings indicate peer support should be accepted as a supplement treatment for patients motivated to improve diabetes behaviors due to the program’s effectiveness and feasibility (Aziz et al., 2018). These patients were also able to provide ongoing peer support maintaining glycemic control over four years. The effects of peer support on acute care (AC) and hospital utilization in individuals with diabetes that did or did not experience depressive symptoms concluded peer support only lowered AC visits and
hospitalizations for individuals with depressive symptoms (Cherrington et al., 2018). When a diabetes self-management education (DSME) intervention was prepared to assess how it affected patients’ self-reported levels of diabetes knowledge, self-care behaviors, and self-efficacy it displayed short-term improvements in relevant DSME parameters such as diabetes knowledge and self-care behaviors (Hailu et al., 2019). This DSME program processes focused on illustrative pictures, discussions, experience-sharing, take-home activities, and a clarification of previous sessions before moving onto the teaching session of each day.

**Benefit of Providing Support Groups in Diabetic Community**

A project that targeted individuals older than 65 years old, demonstrated successful translation of DSME and support into practice through improving diabetes care and promoting continuing education. Glycemic control and quality of life increased by sharing information between patients and providers, implementing psychosocial support, behavioral support with lifestyle modification, multidisciplinary integration, and care coordination (Andrich & Foronda, 2020). A dramatic decrease in HbA1c values less than 7% was noticed in the DSME group after three and six months. Implementation of a diabetes self-management support program in western Kenya focused on sustaining psychosocial support and education by incorporating diabetic peer support leaders at the community level. This program did not grant success in changing diabetes knowledge. Nonetheless, the program significantly improved participants’ HbA1c and systolic blood pressure after 6 months without the influence of variables, such as sex, education, peer group, tribe, glucometer use, insulin use, and BMI (Park et al., 2015).

It is expected that patients assume an active role in diabetes management; however, some individuals encounter barriers that may impact their likelihood of success. Individuals in low socioeconomic groups tend to deal with issues related to literacy and accessibility, which can lead
to shame and lack of interest in diabetes self-management education (Testerman & Chase, 2018). A shortage of resources can also contribute to the mismanagement of diabetes. An intervention group receiving peer-led support sessions in a low-income country showed improvement in patient’s knowledge by displaying an increase of understanding in symptoms, treatment, and hypoglycemic management (Debussche et al., 2018). Additional community resources, providing complementary health approaches, and creating an open dialogue between patients and clinicians could strengthen patient outcomes. A study that assessed a community’s peer-led support group’s health literacy, motivation, diet, and physical activity determined functional health literacy, and autonomous motivation may be important drivers for following diet recommendations (Juul, Rowlands, & Maindal, 2018).

Influence of DSME and Peer Support on Diabetics Physical, Mental, and Emotional State

According to Doull et al. (2017), peer support is a strategy used to improve physical, emotional, and psychological health. It also promotes behavior change and self-care across diverse conditions and population groups. These support groups are not hierarchical but reciprocal, allowing a relationship of empathy. Distress and engagement are barriers that may impact patient outcomes in a DSME program with peer support. Piatt et al. (2018) evaluated the effectiveness of a peer leader-led (PL) diabetes self-management support (DSMS) group in achieving and maintaining improvements in hemoglobin A1C values, self-monitoring of blood glucose (SMBG), and diabetes distress. Results revealed that peer-led diabetes self-management support (DSMS) is as effective as traditional DSMS in helping participants maintain glycemic control and self-monitoring of blood glucose (SMBG). Peer leader DSMS was found to be more effective at improving distress because the participants gained insight and direction from a peer leader that could relate to their challenges. The evidence related to DSME and peer support are consistent
and is indicative as being feasible in improving health outcomes in diabetics. These interventions can translate into practice to benefit patients' welfare and decrease the financial burdens encountered in healthcare. In Testerman and Chase’s (2018) study, participants reminisced about knowing someone who did not take care of themselves, who eventually died, or experienced complications related to diabetes. These observations on the effects of diabetes have influenced diabetics to attend diabetes self-management classes because they did not want to experience trauma due to disease mismanagement. These diabetics desired to perform self-care in hopes of living healthier and longer. In a randomized clinical trial, peer support groups were labeled therapeutic to reduce mental symptoms and level of depression (Rahimi, Kooshan, Akrami, & Rad, 2019). Hernandez et al. (2014) recommends that patients’ have routine assessments of well-being and support while receiving diabetic care. During assessments there should diabetes self-care support and purposeful screening for psychological illnesses for those who have issues with disease management. An exploratory study assessed the efficacy of the “Wisdom, Power, Control” diabetes self-management education (DSME) program concerning diabetes knowledge, self-efficacy, self-care, distress level, and A1C in an African American’s. Post-intervention surveys reported a significantly higher level of self-efficacy and diabetes knowledge regarding a normal HbA1c and frequency of foot checks. Congruent with previous studies, researchers observed diabetes knowledge gains among participants completing the intervention, along with significant improvement post-intervention distress levels (Pena-Purcell, Jiang, Ory, & Hollingsworth, 2015).

Synthesis of Current Evidence

After the review of current literature, findings are consistent with diabetes self-management education (DSME) and peer support being appropriate forms of treatment for diabetics. In the literature review, there were many randomized controlled trials that strengthened
the level of evidence provided in the search. Other evidence that supported DSME and peer support as reliable forms of diabetic treatment were quasi-experimental studies. Multiple studies had a positive impact on the individual and the community when both are implemented simultaneously. Findings indicate peer support should be accepted as a supplement treatment for patients motivated to improve diabetes behaviors due to a program’s effectiveness and feasibility (Aziz et al., 2018). Additional research is needed to examine the impact of problematic social support on psychological outcomes and diabetes self-care behaviors since some individuals encounter various barriers that hinder their progress in treatment (Chlebowy, 2021). Although peer support and DSME have proven to be effective, other factors contribute to a program’s effectiveness. To reduce hardships related to disease management and navigating health care, patients in studies emphasized the importance of learning how to self-advocate, acquire necessary skills, and gain the confidence to ask questions of the health care team (Kwan et al., 2017). The research also suggests DSME and peer support is linked to knowledge acquisition but does not necessarily lead to behavior change or better-controlled diabetes. However, it does facilitate decision-making and informed choices about health. There is minimal information about the sustainability in these types of programs. More insight and data on sustainability would be beneficial in maintaining the Prevent T2 Program at the Charles County Health Department following the program evaluation.

Since the CCHD provides DSME and peer support to residents in the community, the findings from the literature review are applicable to this healthcare setting. Participants can learn to manage their disease, psyche, and find comfort in support from the diabetic community with the Prevent T2 Program. Recommendations from the literature review are consistent with providing diabetic individuals with feedback in relation to their glycemic control by monitoring their HbA1c
every three months. These changes can be implemented with the current infrastructure at the Charles County Health Department (CCHD) by putting new procedures in place for the recruitment, selection, and training of future Prevent T2 participants. Enrolling participants that meet a HbA1c criteria will be a vital step in measuring the progress of the participants and program effectiveness. Retrieval of baseline HbA1c results and continued monitoring are necessary when evaluating whether individuals are successful with preventing type 2 diabetes. Diabetes educators can explore whether their approach and methods are effective as they track the participants’ progress. Even though the Prevent T2 Program offers an abundance of resources from the CDC, it would be beneficial to incorporate more information regarding the HbA1c since it’s the main indicator for type 2 diabetes diagnosis. Participants need to understand what the HbA1c is, how to monitor it, and know how often it needs to be checked. The diabetes educators should provide frequent education and reminders about the importance of checking lab results. The CCHD and program facilitators will need to create new workflows to achieve these changes. Induction surveys would need to be sent to the program’s participants at enrollment and then every three months for routine monitoring. These actions motivate participants to track their progress after exiting the Prevent T2 Program and prompt educators to make modifications to improve the program.

**Conceptual Framework and Model**

This program evaluation followed the impact evaluation design to determine whether the program resulted in the desired impact of having participants maintain hemoglobin A1c levels below 7% and acquire a high knowledge acquisition. The PRECEDE/PROCEED model was applied to this program evaluation since it resonated with public health and can be transferred into community issues (see Appendix B). It supports health promotion, disease prevention programs,
and invites participation from the community, which coincides with this research (Rural Health Information Hub, 2018). The model is a participatory process that involves all stakeholders. PRECEDE is used to diagnosis the issue and the concept of change to produce a desired outcome. Since diabetes is a local and national problem, the Prevent T2 Program influences change amongst the community. The Prevent T2 Program focuses on active health promotion through education and behavior. Participants learn how about the diabetic diet, exercising, and disease maintenance to improve their diabetes status and overall health. The PROCEED portion concentrates on implementation and evaluation. Although the intervention of diabetes education and peer support have been implemented to address diabetes, there are no consistent results with patient outcomes. Enacting the PROCEED model will assist with determining whether the intervention has the intended effects.

The Plan-Do-Study-Act (PDSA) model guided the processes of this project (see Appendix B) (Children’s Hospital of Philadelphia Research Institute, 2020). The PDSA model was chosen for this program evaluation because it focused on improving a process or carrying out change. The model has a systematic cycle that can provide feedback on what does and does not work for the Prevent T2 Program to determine what changes can be made to improve the participant’s health outcomes, program workflow, and recruitment process. During the planning process, the current Prevent T2 Program processes were examined with the facilitator. Requirements for attending the program were evaluated to ensure the program has specific criteria the participants can adhere to. The program’s weekly schedule, handouts, and reading materials were reviewed to better understand the content and goals of the program. Identifying useful tools for measurement was key in evaluating participants’ knowledge acquisition. In the “do” phase the plan was implemented and the participants were surveyed. Participants enroll in the Prevent T2 program through the
facilitator using a referral process or inquiry with evidence being high risk for being a diabetic or have an abnormal hemoglobin A1C value that indicates the individual is a diabetic. Next, the individual attends weekly diabetes self-management education sessions with peer support to complete the intervention. Peer feedback, shared experiences, and social support is expected when participating in the Prevent T2 Program. Three months to six months after the intervention, the participants are to complete a survey that assesses the participants HbA1c values and knowledge level. In the study phase, the results were analyzed, and data was processed to form conclusions from the study. A review of questions in Qualtrics and excel spreadsheets were essential in gathering data. In the act phase, recommendations and modifications for the program were made based on the study’s results. Workflows, program processes, and dissemination of program information should be reconsidered and examined while taking action to maintain sustainability.

The conceptual framework applied to this project is the goal attainment theory by Imogene King (see Appendix C). Three interacting systems are incorporated in formulating King’s goal attainment theory to achieve health: personal, interpersonal, and social systems (Caceres, 2015). The personal system represents an individual’s awareness of body image, space, time, perception, self, growth, and development. In this project, the personal system focuses on each individual participants’ needs. The participant will assess their purpose for being in the program and acknowledge their goals for being to achieve success. The interpersonal component refers to interactions, communication, and stress of a situation. After understanding individual roles and goals, the participant will interact and communicate with their peers to complete goals within group setting. The final system involves decision making, organization, and power in the social phase. Each participant can reach their optimum health in this phase and find comfort in organization, decision-making, and overall become empowered in their community. These
systems need to be implemented as a whole for an individual (personal) to interact (interpersonal) with groups of people in their community (social). It can be assumed that an individual is capable of reaching their optimum potential when all systems are utilized to achieve the desired goal. This theoretical framework has been considered broad with limited application in nursing areas that have issues with patient competence and compliance (Wayne, 2014).

**Specific Aims**

The first objective was to examine pre- and post-program hemoglobin A1c levels among patients who participate in the “Prevent T2 Program” from the January and June 2021 cohorts. The second objective was to evaluate the participants level of knowledge after receiving peer support and education on diabetes management. The project goals were:

1. To examine whether participants achieve HbA1c levels below 7% at least 3 months after the start of intervention.
2. To examine whether participants achieved at least a 5 out of 7 points in each individual subscale on the Skills, Confidence, Preparedness Index knowledge survey at the end of the intervention.

**Context**

The Prevent T2 Program is a part of the National Diabetes Prevention Program sponsored by the Centers for Disease Control and Prevention (CDC). This program is conducted at the Charles County Health Department (CCHD) in Southern Maryland, a suburban area of the Greater Washington DC Metropolitan region. The county’s health department is affiliated with and reports to the state of Maryland Department of Health. The mission and vision of the CCHD are to have a healthier Charles County by promoting, protecting, and improving the health of the community (Charles County Department of Health, 2020). CCHD aims to provide health prevention services,
community health assistance, and disease management for all age groups from multicultural backgrounds. The facility’s staff includes providers, nurse practitioners, receptionists, project managers, medical assistants, and patient support representatives. To support the Prevent T2 Program the CCHD promotes a toolkit developed by the CDC and American Medical Association to guide health care teams through the process of referring patients to in-person and online diabetes prevention programs (Charles County Department of Health, 2020). The tool kit is an outline for screening, testing, and action plan to achieve better health outcomes. There are tools and resources in the toolkit to help program facilitators and providers manage prediabetics. Important factors in the toolkit include educating the patient on the diagnosis after screening is performed through lab results. Next, a treatment plan needs to be formalized with shared decision making on lifestyle changes, medical nutrition therapy, and medication. Finally, reassessment throughout the treatment plan with a lab work follow up at least annually (American Medical Association, 2019).

The CCHD offers the Prevent T2 Program free of charge to the residents of Charles County. The facilitator is a full-time employee who received education and training to facilitate diabetes self-management education in a peer support setting. Participants are enrolled in the program by calling into the health departments hotline Monday – Friday to request a slot prior to the start of a new cohort session. Informational materials for the participants are provided in the form of handouts during each session and can be easily accessed on the CDC website. The CCHD sponsors this initiative without utilizing electronic health records to monitor the progress and outcomes of each participant. All funding for this program is incorporated in the Charles County Health Department’s fiscal year budget.

Due to the COVID-19 pandemic, there have been modifications with the Prevent T2 Program. Normally classes are held in-person, but due to state restrictions the program’s format
has changed to in-person, asynchronous, and synchronous. In the January 2021 cohort, there are 33 participants in the online platform due to COVID-19. The facilitator has divided each group within the January cohort: 17 in-person and 14 zoom participants. Groups meet on Tuesday evenings: 4:00pm and 5:30pm (see Appendix E). The remaining two participants are attending in an asynchronous online environment with self-guided education at their leisure. The graduation date for the January cohort will be January 2022. The June 2021 group has 15 participants that have the option to attend in-person or online. They will graduate from the program in June 2022.

It is crucial that all participating parties form collaborative and cohesive work relationships throughout the process of this program evaluation project (see Appendix D). Open and consistent communication by phone or email is vital. Active involvement from the program facilitators is very beneficial because they bridge the gap between the participants and the doctoral student to produce project data. Other strengths that may influence the success of this program evaluation project are support from leadership and administration at the CCHD. Although there is no funding needed from the doctoral student, the CCHD is responsible for the financial assistance of the program since they receive funding from the government. Informational materials will provide additional resources for the participants to be successful in achieving objectives and goals. The doctoral student can also benefit from informational materials when following the workflow of the Prevent T2 Program. Policies and procedures outlined by the CDC navigate the workflow of the program and guides the facilitator in their diabetes education. Opportunities that may flourish from this program evaluation project are participants improving their quality of health, empowerment towards self-management, and creating a new workflow for the program. Challenges that exist within the program are participant engagement and compliance. The program facilitator reports some participants tend to disengage or become noncompliant when the
frequency of meetings is reduced to once a month. This interferes with the success of the program and participants achieving their personal goals.

**Intervention Description**

The setting of this project was Charles County Health Department (CCHD) in Southern Maryland. CCHD implemented the Prevent T2 Program to prevent and lessen the complications of diabetes mellitus in high-risk individuals. Participant involvement is completely voluntary and comes from marketing held by the health department and referrals from local providers. The program has a primary facilitator, who is trained and certified by the Centers for Disease Control and Prevention (CDC) to conduct the education sessions. Education sessions (see Appendix E) are provided in a peer support setting to allow individuals that share the same risk diagnosis to fellowship. The participants have a strict regimen outlined by the CDC related to the importance of physical activity, diet, medication management, compliance, etc. The education regimen teaches the participants to eat healthy without giving up all the foods they love, how to manage stress, cope with challenges that can distract them from progressing, and learn how to get back on track if the participant goes astray. Activities during the sessions include creating a food log, tracking physical activity, setting goals, discussing how to stay motivated and overcome barriers (American Medical Association, 2020). For the first six months of the program the participants meet weekly. The remaining six months are spent meeting once or twice a month enhancing skills and reinforcing lifestyle changes that have been made. Participants receive face-to-face and virtual support from peers while the facilitator leads the group on assigned topics. The CDC provides educational materials and handouts.

Each individual and group of peers will sign a voluntary informed consent, explaining the program, project, and objectives (see Appendix H). Eligible participants are required to be older
than 18 years old with either (1) an existing diagnosis of diabetes mellitus or (2) a diagnosis of pre-diabetes with a HbA1c level less than 6.5%. Study participants will complete a post intervention survey that will assess HbA1c values at baseline (before the program) and from three to six-months after attending DSME and peer support. Participants must be willing to offer social support and supportive counseling, while the facilitator assumes the advisory role. The focus of the intervention is to provide peer to peer interaction.

This project has a retrospective and descriptive design to measure the outcomes. The intervention involves receiving HbA1c results during the program enrollment. The diabetes self-management education and peer support will begin after enrollment and continue for one year. The participants attend in-person or virtual class for 14 weeks and transition to meeting every other week. During the last six months, participants attend class once a month and independently self-manage their diabetes. Cohort 1 (January 2021 group) and Cohort 2 (June 2021) will receive a survey from the facilitator requesting they complete the skills, confidence, and preparedness survey for knowledge assessment and self-report of HbA1c levels utilizing their patient portal system or providers lab work (see Appendix G).

**Study of Intervention**

Multiple processes will be implemented in this project to assess the impact of diabetes self-management education and peer support. Upon receiving permission from Charles County Health Department and the facilitator to conduct the project, the DNP student attended the Prevent T2 Program sessions to learn about the content and discussions that occur during diabetes peer support and patient education classes. Studying these interventions firsthand will provide more insight on program needs and modifications to produce better patient and program outcomes. An evaluation
of hemoglobin A1c (HbA1c) values is a vital representation of patient progress from pre to post intervention.

Two cohorts were assessed in this program evaluation. The first cohort began diabetes peer support group and patient education in January 2021. In June 2021, the second cohort began the Prevent T2 Program. Both cohorts received a recruitment email explaining the project. If a member of the cohort consented to participate, a survey link opened with questionnaires to validate hemoglobin A1c levels and assess knowledge acquisition. The HbA1c values and patient’s knowledge addressed the specific aims of this program evaluation.

Measures

The intervention for this program evaluation project is peer support and diabetes education conducted in weekly sessions by the program facilitator (see Appendix E). The CDC (2018) defines diabetes education as strategies to promote self-monitoring of diet and physical activity. The intervention is mediated by peer support, which is identified as social support to assist with problem solving and modification of lifestyle changes (CDC, 2018). Together, the diabetes education and facilitated peer support create the Prevent T2 Program. Improving outcomes of care will depend on hemoglobin A1c (HbA1c) results and level of knowledge. The HbA1c is a crucial clinical indicator used to evaluate how well an individual is controls their diabetes and represents the blood value of estimated average glucose. A patient with prediabetes has HbA1c levels between 5.7-6.5% and diabetics values are greater than 6.5% (ADA, 2020). Every percentage point drop in the hemoglobin A1C blood results reduces the risk of microvascular complications by 40% (Burke et al., 2014). A diabetic with good glycemic control maintains hemoglobin A1C levels lower than 7% (ADA, 2020). In a post analysis survey, participants were asked to self-report their HbA1c lab results pre- and post-intervention to determine the effectiveness of the
Prevent T2 program. Prior to completing the survey, participants were asked to access their HbA1c results through their patient portal or physician’s database. The knowledge level was assessed at 3 and/or 6 months after beginning the Prevent T2 Program, depending on whether they began the program in January or June. The participants answered questions from the LMC Skills, Confidence, and Preparedness Index tool (SCPI). According to Aronson et al. (2019), the tool is based on the AADE7 Self-Care Behaviors, that meets the assessment standards of the International Society of Quality-of-Life Research (ISOQOL) for patient-reported outcomes. It is an easy-to-use 23-item questionnaire designed to assess three dimensions: knowledge (9 items), confidence (7 items), and preparedness (7 items) (see Appendix H). The SCPI scale utilizes a Likert Scale: strongly agree (7 points), agree (6 points), somewhat agree (5 points), neither agree or disagree (4 points), somewhat disagree (3 points), disagree (2 points), strongly disagree (1 point). The skills subscale is out of 7 if the scores for question 2 and question 4 are 0, and it will be divided by 7. If questions 2 and 4 are answered, they will be added and divided by 9. The confidence subscale is out of 7 and scores for each question will be added and divided by 7. The preparedness subscale has a response of “already doing”, which will be scored as 7. Each subscale total score is out of 7 and should be divide by 3 to receive the participant’s final score. According to National Institutes of Health (2019), a higher SCPI score indicates greater diabetes self-management. This tool has a high degree of validity, internal consistency, and test-retest reliability with no influence from age, sex, ethnicity, income, or level of education (Aronson et al., 2019). Surveys were disseminated by email through Qualtrics. To maintain anonymity, the program’s facilitator emailed surveys to the participants.
Analysis

The initial plan was to perform a t-test to determine whether peer support and diabetes self-management education impact hemoglobin A1c (HbA1c) levels and knowledge acquisition. This statistical analysis was going to measure the participant’s pre-and-post intervention HbA1c levels and knowledge level in a post survey to determine if there were any significant differences. ANOVA would be used to compare the two cohorts. Plans were altered since there was a 6.5% (3 participants) response rate and no one participated from the June cohort. The quantitative data for the project was the HbA1c results pre-and-post-intervention and the responses to the Skill, Confidence, and Preparedness Index (SCPI) Scale. Participants answered a survey that consisted of HbA1c results pre-and-post-intervention and the responses to the Skill, Confidence, and Preparedness Index (SCPI) Scale. Data was compiled on an Excel spreadsheet. The only missing values that were allowed in this program evaluation were demographic data such as age, gender, and ethnicity. All other values such as the HbA1c and SCPI responses were required. Participants were prohibited from completing the survey if they did not agree to the informed consent.

Ethical Considerations

Ethical considerations of this project included obtaining Institutional Review Board (IRB) approval from Jacksonville University. Permission was obtained from the Charles County Health Department (CCHD) and the program facilitator to conduct this program evaluation project. The CCHD did not require an IRB approval for this project. Qualtrics surveys were sent to each participants’ email by the program facilitator. If the participants chose to move forward and open the link, the informed consent populated prior to participation in the survey. In the informed consent participants were notified that the process will be anonymous and voluntary. The objectives and patient rights were also disclosed. Confidentiality, preservation of data, and
publication of results were also included in each informed consent. Participants were free to participate or opt out with no penalty.

No emails or names were attached to the sensitive data. Participants were de-identified in this project and represented as numbers to ensure anonymity. The individual’s responses coincided with the numbers of each participant: 1, 2, 3, etc... Sensitive data such as the HbA1c was secured, managed, and protected solely by the doctoral student in a password security cloud on Dropbox. To maintain anonymity, the program’s facilitator emailed participants with a link to the survey and consent. The survey was disseminated by email through Qualtrics. Qualtrics uses Transport Layer Security (TLS) encryption (also known as HTTPS) for all transmitted data. The risks associated with the study were minimal, but there is always a chance that a loss of confidentiality may occur. To mitigate this risk, the survey was configured so that participation was anonymous with no identifying information (e.g., email addresses, IP addresses, names, etc.) being collected by the survey website nor the doctoral student. As such, responses cannot be linked back to participants. The doctoral student and her mentor had access to de-identified data and the participant responses in Qualtrics. The doctoral student stored de-identified data and results in a password secure Dropbox to conceal all information, which only she has access to. Data will be destroyed after 5 years of storage.

Results

Due to a low rate of responses, a statistical analysis of each cohort could not be performed to determine whether peer support and diabetes self-management education impact hemoglobin A1c (HbA1c) levels and knowledge acquisition. This project examined HbA1c levels at least 3 months after the start of intervention. The aim was for participants to achieve HbA1c results below 7%. There were five participants that responded to the survey and one of them declined to
participate. Participant one was a white female between ages 55-64 in the January 2021 cohort. She had an initial HbA1c of 5.7% and it decreased to 5.5% three months after participating in the Prevent T2 Program (see Table 1). Using the SCPI tool, the participant scored 5 with skills, 5.28 for confidence, and 4.57 for preparedness. Participant two was a white male between ages 45-54 in the January 2021 cohort, who had a HbA1c of 7.9% at the start of the program and it decreased to 7.1% during the 6th month. The participant scored a maximum of 7 in all subscales and did not self-report a 3-month HbA1c result. The third participant also came from the January 2021 cohort. The white female age ranged from 45-54 reported an initial HbA1c of 6% and did not self-report a 3 or 6-month result. Using the SCPI tool, the participant scored 4.28 with skills, 4.57 for confidence, and 4 for preparedness (see Figure 1). Participant four agreed to participate but the survey was incomplete and left in progress, so there was no data to report due to missing values. This participant was a white female from the age of 45-54, who participated in the June 2021 cohort. Based on the results, two out of the three participants experienced a reduction in their HbA1c. Participant three did not meet the 5-point benchmark for the SCPI tool survey and did not have any follow up HbA1c results. COVID-19 has created problems with attendance for the Prevent T2 Program, which possibly inhibited the participant responses. Some participants are meeting in-person while others are on Zoom, which can create a disconnect. The doctoral student assumed the participants would be willing to complete the survey since she occasionally attended and observed sessions.

Table 1

<table>
<thead>
<tr>
<th>Hemoglobin A1c (HbA1c %) and Demographic Data for Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant 1</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>White Female, 55-64 years</td>
</tr>
</tbody>
</table>
Participant 2 7.9% None 7.1% White Male, 45-54 years
Participant 3 6% None None White Female, 45-54 years

*Note.* HbA1c (%) results for each participant at the start of the Prevent T2 Program, 3 and 6-months after participating in the program. Target HbA1c is less than 7%. None means no results were reported.

Figure 1 - Represents scores of each participant in the three categories/subscales: skills, confidence, and preparedness. The target goal was 5 out of 7 for all subscales.

**Summary**

The purpose of this program evaluation was to evaluate the effectiveness of the Prevent T2 Program on the reduction of A1C levels and knowledge acquisition about type 2 diabetes. The project aimed to examine whether participants achieve HbA1c levels below 7% at least 3 months after the start of intervention. Two participants initial HbA1c levels were below 7%. The participant that had an initial level of 7.9% dropped to 7.1% in 6-months, which indicated peer
support and diabetes self-management education (DSME) was effective. Another participant dropped 0.2% in their HbA1c level from 5.7% to 5.5% in 3 months. Other key findings in the project were the SCPI tool assessment. The knowledge level of the participants averaged between 4 and 5 points. One participant scored the highest possible points in the skills, confidence, and preparedness subscales. The participant that did not self-report a follow up HbA1c scored the lowest in all categories on the SCPI tool with a maximum of 4.57 out of 7. (indicate the average here out of 7). Strengths of this project included support from the program facilitator to conduct the program evaluation, the time frame participants were able to complete the survey, and use of an easy-to-use survey. Participants were given two weeks to complete the survey and the survey accommodated all individuals with basic health literacy.

**Interpretation**

In this project, there was a low response rate (6.5%) of program participants that completed the survey. It was hard to highlight the impact of the program when results were diminished due to the low participation rate. The doctoral student was able to attend some of the education and peer support sessions via Zoom to gain firsthand experience with the intervention and assess program effectiveness. The program facilitator invited guest speakers and chefs to add value to their experience with the program. The participants fellowshipped and shared personal stories about what they found helpful with managing their disease. During a session, one participant reported they were able to lose 5 pounds by modifying their diet and taking brisk 30-minute walks each day. Another participant expressed they were confident in meal choices and able to discern what is healthy versus unhealthy when grocery shopping. The program has a positive impact on the participants, which is evident in their gratitude and expressions during the sessions. Although the system and program are highly functional, the program would benefit from inviting participants
to complete the survey during enrollment to establish a baseline from which to track their progress with future surveys.

Current evidence highlights peer support and diabetes self-management education (DSME) as simultaneous forms of treatment when caring for diabetics. A systematic review found robust data validating that engagement in DSME results in a statistically significant decrease in hemoglobin A1c levels (Chrvala et al., 2016). There was an overall mean reduction of 0.74 and 0.17 for intervention and control groups, in addition to an 0.57 average absolute reduction in HbA1c. Hailu et al. (2019) study closely mirrors this project and found significant improvements in diabetes knowledge scores, adherence to dietary, and footcare recommendations. A significant increase in the mean diabetes knowledge score was apparent in the intervention group compared to the slight decrease in the comparison group. The study intervention consisted of a patient-friendly and culturally sensitive information booklet, didactic teaching by clinic-based nurses, and interactive individual and group activities (Hailu et al., 2019). Powers (2016) reports DSME and peer support is cost effective by reducing hospital admissions and readmissions. DSME and peer support programs are still growing and small despite reports of positive clinical outcomes. Nurses and health care teams should integrate these features in patient care and develop respective community resources to support these services (Powers et al., 2016). Further research needs to be conducted to determine how diabetics can benefit from DSME and peer support programs guided by nurses.

**Limitations**

This project had multiple factors that limited the internal validity of this study. The intervention and implementation were modified from its traditional format due to COVID-19. COVID-19 is an uncontrolled event that caused a worldwide pandemic, which continues to impact
our social interactions and daily living. The diabetes self-management and peer support program normally met face-to-face prior to COVID-19 but had to transition having class online. The lack of responsiveness has made it difficult to draw conclusions in this program evaluation. Many participants may have become disengaged, distracted, or discouraged due to the new requirement of using online technology and having the expectation of participating in distance learning. Also, participants were not required to provide HbA1c results in the program, which interfered with gaining substantial data from the survey. To minimize these limitations, the program facilitator sent many email reminders about program meetings and project survey. Recently, COVID-19 restrictions were partially lifted and allowed more in-person participants.

Conclusions

The significance of this program evaluation was to determine the effectiveness of the Prevent T2 Program in preventing Type 2 Diabetes or improving the condition current diabetics by assessing the participants’ hemoglobin A1c levels and knowledge acquisition. Since the program does not measure these outcomes, this project will help bridge the gap between knowledge and practice. The facilitators will gain better insight on how to improve the program and make modifications based on the outcomes of the participants. The participants will be able to reflect on their personal goals and determine whether they are making progress in the program. Overall, sustainability is the key to help the program and its participants thrive after this project. The program's facilitator will be responsible for maintaining the new initiatives implemented during the process of the study. Leaders at the CCHD must continue to motivate all stakeholders to stay aligned with the purpose and goals of the facility and program. The facilitators and managers need to be involved in shaping the program, facilitate regular patient monitoring, and conduct meetings to track the program’s progress. After the doctoral student discussed the project
findings and interpretation with the program facilitator, she proposed continuing the survey by incorporating it as a program requirement. It is recommended that participants complete the survey during enrollment, every three months, and at the completion of the program. It will also be beneficial to celebrate successes of the Prevent T2 Program to encourage all stakeholders to maintain post-intervention modifications and program improvements. To recruit additional participants in the Prevent T2 Program, the health department can share their accomplishments with local providers and encourage the participants to share their experiences with family and friends.

Results will be disseminated in a discussion with the program’s facilitator and through publication in the Diabetes Care Journal. The survey and process of this DNP project can be used in other diabetes prevention, self-management education, and peer support programs. It can improve the workflow and oversee how outcomes are monitored. This project emphasized how important it is to measure participant and outcomes. There is no true indication of success if there is no assessment of outcomes and goals. The implications for practice are to optimize patient teaching and outcomes in individuals that are pre-diabetics and diabetics. Education and peer support can improve the disease management of diabetics with monitoring and guidance under an expert. Consistent proof in past research has shown there is effectiveness in improving patient satisfaction, confidence, and glycemic control with diabetes education programs (Aronson et al., 2018).
References


American Diabetes Association. (2020). Improving care and promoting health in populations: *Standards of Medical Care in Diabetes*. *Diabetes Care, 43*(1), S7-S13. DOI: 10.2337/dc20-S001


Appendix A: Program Evaluation Design

<table>
<thead>
<tr>
<th>Intervention Group</th>
<th>Week 0</th>
<th>Week 1</th>
<th>After Week 12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-test HbA1c</td>
<td>Begin Intervention</td>
<td>Post-test 3-month/6-month HbA1c &amp; SCPI survey</td>
</tr>
</tbody>
</table>
Appendix B: Program Evaluation Model: “Plan-Do-Study-Act”

(Children’s Hospital of Philadelphia Research Institute, 2020)
DSME AND PEER SUPPORT PROGRAM

PRECEDE/PROCEED Model:

(Crosby & Noar, 2011)

Phase 1-6: Identify diabetes as the problem and implement the Prevent T2 Program to address the issue. Promoting diabetic diet, exercising, and education to sustain good health.

Phase 7-9: Determine if the program is effective and goals are met.
Appendix C: Conceptual Framework by Imogene King - “Goal Attainment”

Interpersonal System: After understanding individual roles and goals, the participant will interact and communicate with their peers to complete goals within group setting.

Personal System: Each participant needs to assess their purpose for being in the group and acknowledge their goals for being in the program to achieve success.

Social System: Each participant can reach their optimum health in this phase and find comfort in organization, decision-making, and overall become empowered in their community.
Appendix D: Online Prevent T2 Program Expectations

What you can expect from us:
1. Go over your food and activity every week.
2. Give you feedback on your success and suggestions to achieve a healthy lifestyle.
3. Provide information that is useful to you in meeting lifestyle goals.
4. Answer (or find the answer to) all of your questions.
5. Honesty and accountability.
6. Support and encourage you in challenging times.
7. Absolute belief that each participant can achieve their goals for a healthier lifestyle.
8. Maintain confidentiality regarding your personal information.

What we expect from you:
1. Engage Every Week.
2. Watch all lessons throughout the year during the week they become available.
3. Commit each week to reach your eating and activity goals. This includes doing home activities to practice what you learn in the weekly sessions.
4. Upload a weekly weight. This allows you and your coach to track your progress; tracking is a powerful tool for changing and reinforcing behaviors!
5. Let your lifestyle coach know if you have any problems or barriers so we can be of assistance.
6. Do your best to keep an open mind and give new strategies a try. Persistence and consistency are the keys to success!
## Appendix E: Prevent T2 Program Schedule

### Cohort 1

<table>
<thead>
<tr>
<th>Date</th>
<th>Session name</th>
<th>Date</th>
<th>Session name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/12/21</td>
<td>1-Program Overview Introduction to the Program</td>
<td>4/13/21</td>
<td>14-Get Support</td>
</tr>
<tr>
<td>1/19/21</td>
<td>2-Eat Well to Prevent T2</td>
<td>4/20/21</td>
<td>15-Eat Well Away from Home</td>
</tr>
<tr>
<td>1/26/21</td>
<td>3-Get Active to Prevent T2</td>
<td>4/27/21</td>
<td>16-Stay Motivated to Prevent T2</td>
</tr>
<tr>
<td>2/2/21</td>
<td>5-Track Your Food</td>
<td>5/11/21</td>
<td>17-When Weight Loss Stalls</td>
</tr>
<tr>
<td>2/9/21</td>
<td>4-Track Your Activity</td>
<td>5/25/21</td>
<td>18-Take a Fitness Break</td>
</tr>
<tr>
<td>2/16/21</td>
<td>6-Get More Active</td>
<td>6/8/21</td>
<td>19-Stay Active to Prevent T2</td>
</tr>
<tr>
<td>2/23/21</td>
<td>7-Burn More Calories Than You Take In</td>
<td>6/22/21</td>
<td>20-Stay Active Away from Home</td>
</tr>
<tr>
<td>3/2/21</td>
<td>8-Shop and Cook to Prevent T2</td>
<td>7/20/21</td>
<td>21-More About T2</td>
</tr>
<tr>
<td>3/16/21</td>
<td>10-Find Time for Fitness</td>
<td>9/21/21</td>
<td>Second 6 months starts 23-Have Healthy Food You Enjoy</td>
</tr>
<tr>
<td>3/23/21</td>
<td>11-Cope with Triggers</td>
<td>10/19/21</td>
<td>24-Get Enough Sleep</td>
</tr>
<tr>
<td>3/30/21</td>
<td>12-Keep Your Heart Healthy</td>
<td>11/16/21</td>
<td>25-Get Back on Track</td>
</tr>
<tr>
<td>4/6/21</td>
<td>13-Take Charge of Your Thoughts</td>
<td>12/14/21</td>
<td>26-Prevent T2—for Life!</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/18/22</td>
<td>Let’s Chat Gradient</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Let’s Chat Gradient</td>
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</table>
## Cohort 2

<table>
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<th>Date</th>
<th>Session name</th>
<th>Date</th>
<th>Session name</th>
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<tbody>
<tr>
<td>6/11/21</td>
<td>1-Program Overview Introduction to the Program</td>
<td>9/10/21</td>
<td>14-Get Support</td>
</tr>
<tr>
<td>6/18/21</td>
<td>2-Eat Well to Prevent T2</td>
<td>9/17/21</td>
<td>15-Eat Well Away from Home</td>
</tr>
<tr>
<td>6/25/21</td>
<td>3-Get Active to Prevent T2</td>
<td>9/24/21</td>
<td>16-Stay Motivated to Prevent T2</td>
</tr>
<tr>
<td>7/2/21</td>
<td>4-Track Your Activity</td>
<td>10/8/21</td>
<td>17-When Weight Loss Stalls</td>
</tr>
<tr>
<td>7/9/21</td>
<td>5-Track Your Food</td>
<td>10/22/21</td>
<td>18-Take a Fitness Break</td>
</tr>
<tr>
<td>7/16/21</td>
<td>6-Get More Active</td>
<td>11/5/21</td>
<td>19-Stay Active to Prevent T2</td>
</tr>
<tr>
<td>7/23/21</td>
<td>7-Burn More Calories Than You Take In</td>
<td>11/19/21</td>
<td>20-Stay Active Away from Home</td>
</tr>
<tr>
<td>7/30/21</td>
<td>8-Shop and Cook to Prevent T2</td>
<td>12/10/21</td>
<td>21-More About T2</td>
</tr>
<tr>
<td>8/6/21</td>
<td>9-Manage Stress</td>
<td>1/14/22</td>
<td>22-More About Carbs</td>
</tr>
<tr>
<td>8/13/21</td>
<td>10-Find Time for Fitness</td>
<td>2/11/22</td>
<td>23-Have Healthy Food You Enjoy</td>
</tr>
<tr>
<td>8/20/21</td>
<td>11-Cope with Triggers</td>
<td>3/11/22</td>
<td>24-Get Enough Sleep</td>
</tr>
<tr>
<td>8/27/21</td>
<td>12-Keep Your Heart Healthy</td>
<td>4/15/22</td>
<td>25-Get Back on Track</td>
</tr>
<tr>
<td>9/3/21</td>
<td>13-Take Charge of Your Thoughts</td>
<td>5/13/22</td>
<td>26-Prevent T2—for Life!</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6/17/22</td>
<td>Let’s Chat Graduation</td>
</tr>
</tbody>
</table>

Second 6 months starts

23-Have Healthy Food You Enjoy
Appendix F: Participant Recruitment Flyer

YOU CAN MAKE A CHANGE FOR LIFE

This FREE program is for you if you:
• Are you an adult who is overweight
• Have pre-diabetes
• Have borderline diabetes
• Have a family history of diabetes, or
• Have had gestational diabetes

PREVENT T2
A PROVEN PROGRAM TO PREVENT OR DELAY TYPE 2 DIABETES

Charles County Department of Health
4545 Crain Highway | White Plains, MD 20695
301-609-6885 | charlescountyhealth.org

ONLINE SELF-GUIDED CLASS
Classes start Monday January 11th, 2021

IN-PERSON CLASS*
Classes start Tuesday, January 12th, 2021
*Subject to change pending state and county orders

Pre-Registration is required by Monday, January 4th, 2021. Call 301-609-6885 for more information and to register. Future classes are available. Contact us or go online for more details. https://charlescountyhealth.org/health-wellness/prediabetes/
Ms. Angela Deal,

I have obtained IRB approval at my institution for the Prevent T2 Program evaluation study. The survey will open on October 4, 2021. As previously discussed, would you please forward the email invitation to T2 Program participants who have enrolled in the program in January 2021 and June 2021? The participants will have 2-weeks to complete the survey, which will end October 20, 2021. Thank you for your assistance, and feel free to contact me if you have additional questions. The email script is attached. Thank you.

Sincerely,

Sharie Blythe.

Subject Line: Invitation to participate in research

You are invited to complete an online survey as part of a research project conducted by Sharie Blythe, DNP Student, and Dr. Michelle Edmonds, faculty mentor at Jacksonville University. The research project is called Evaluating the Effectiveness of a Patient-Centered Type 2 Diabetes Prevention Program. The purpose of the study is to see how well diabetes education and peer support prevents Type 2 Diabetes. We are recruiting Prevent T2 Program participants, who are 18 years old and over.

The study involves the completion of an online questionnaire. The questionnaire should take no longer than 10 minutes to complete. We will collect the following information from you: hemoglobin A1c levels before, three months, or six months after completion of the Prevent T2 program, and 23 questions about managing your diabetes. Demographic data that will be collected are your age, ethnicity, and gender. You will participate anonymously, and no personal identifying information will be collected. The survey can be completed anywhere you have access to the Internet.

If you meet the above criteria and would like to participate in this study, follow the link below to access the informed consent and the online questionnaire. You may also copy-paste the link into your web browser.

If you have any questions, please do not hesitate to contact Sharie Blythe at 202-568-5789, email: sblythe@jacksonville.edu.

CONSENT AND SURVEY LINK: https://jacksonvilleu.az1.qualtrics.com/jfe/form/SV_3L6UANXkgjeyGJo

I appreciate your consideration. Please feel free to contact me directly if you have any questions about this study.

Sincerely,
The Jacksonville University Institutional Review Board has approved the project (JU IRB # 2021-0xxxx).
Appendix H: Informed Consent

**TITLE OF THE RESEARCH STUDY:** Evaluating the Effectiveness of a Patient-Centered Type 2 Diabetes Prevention Program

**RESEARCH INVESTIGATORS:**

Sharie Blythe, MSN, DNP Student, sblythe@jacksonville.edu (202) 568-5789  
Michelle Edmonds, PhD, FNP-BC, CNE, Project Chair, medmond@ju.edu (904) 256-7288

1. **Procedures (What is expected from you step by step):**
   - To participate, you must be enrolled in the Prevent T2 Program through Charles County Health Department starting in either January 2021 or June 2021.
   - The purpose is to assess how well diabetes education and peer support prevents Type 2 Diabetes.
   - To participate you will be asked to:
     - Read the consent before you agree to do the Prevent T2 Program evaluation survey.
     - Retrieve lab results via your patient portal or call your doctor to get a blood sugar result called hemoglobin A1C (HbA1C %). You will need to ask your doctor or extract from the patient portal, your hemoglobin A1C labs from: at the start of the program, at 3 months or at 6 months after beginning program.
     - Survey should take no more than 10 minutes and it contains 31 number of questions.

2. **Your rights to participate, say no, or withdraw from the study or project:**
   - Participation in the research is completely voluntary.
   - You have the right to say no.
   - You may change your mind at any time and withdraw.
   - The questions are not sensitive in nature and you may choose not to answer specific questions or you may stop participating at any time.
   - Whether you choose to participate or not it will have no effect on the services you are entitled to receive as a program participant.

3. **Costs and compensation for your participation:**
   - There is no cost or compensation for this research.

4. **Benefits and Risks:**
   - You may not benefit directly from participating in this study. Participating will help strengthen the Prevent T2 Program and give knowledge on the effect of diabetes education and peer support.
• The risks associated with the study are minimal, but there is always a chance that a loss of confidentiality may occur. To mitigate this risk, we have configured the survey so that your participation is anonymous with no identifying information (e.g., email addresses, IP addresses, names, etc.) being collected by the survey website nor the researchers. As such, responses cannot be linked back to you.

• All information will be kept in a locked and secure area that is only accessible to the researcher, Sharie Blythe.

• Please know that the survey is anonymous. Therefore, if you decide to withdraw from the study, we may not be able to delete the data you have already provided, and we may use for our research.

5. **Contact Information for questions or concerns:**
   a. By completing and submitting the survey, you affirm that you are at least 18 years old and that you give your consent for Sharie Blythe to use your answers in her research. I understand that my consent does not take away any of my legal rights. I also understand that nothing in this consent form is intended to replace any applicable Federal, state, or local laws.

   b. If you have any questions about this research before or after you complete the survey, please contact Sharie Blythe, slythe@jacksonville.edu. If you have any concerns or questions about your rights as a participant in this research, please contact the Jacksonville University Institutional Review Board at (904) 256-7151 or juirb@ju.edu.

This research is being conducted under the direction of Michelle L. Edmonds, PhD, FNP-BC, CNE, Jacksonville University Faculty/Mentor, (904) 256-7288 or medmond@ju.edu and has been approved by the Jacksonville University Institutional Review Board (JU IRB #2020-089).

6. **Documentation of informed consent.**
   “You indicate your voluntary agreement to participate by clicking the agree button at the beginning of the survey.”

Please click link to enter the survey:
https://jacksonvilleu.az1.qualtrics.com/jfe/form/SV_3L6UANXkgjeyGJo
Appendix I: The LMC Skills, Confidence, Preparedness Index (SCPI) Scale

Please answer the following questions.

<table>
<thead>
<tr>
<th>Skills/Knowledge Questions</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Somewhat Agree</th>
<th>Neither Agree or Disagree</th>
<th>Somewhat Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>These questions explore your knowledge of diabetes management skills.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. I know how to plan meals that have the best balance between carbohydrates, proteins and vegetables.</td>
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<td>2. I know how my diabetes medications (pills, injectables and/or insulin) work in my body.</td>
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<tr>
<td>○ check here if you are not taking any diabetes medication</td>
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<tr>
<td>3. I know when to check my blood sugar if I want to see how my body responded to a meal.</td>
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<td>4. I know when to check my blood sugars to determine if my medication or insulin doses are correct.</td>
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<td>○ check here if you are not taking any diabetes medication</td>
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<td>5. I know what to do to prevent a low blood sugar when I exercise (either before, during, or after)</td>
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<td>6. When I am sick, I know what to do differently with my diabetes management</td>
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<td>7. I know how stress can affect my diabetes management.</td>
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</table>
8. When I look at my blood sugars over a given week, I can explain what my blood sugar pattern is.

9. I know what my **target** levels are for A1c, blood pressure and cholesterol.

<table>
<thead>
<tr>
<th>Confidence Questions</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Somewhat Agree</th>
<th>Neither Agree or Disagree</th>
<th>Somewhat Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>These questions explore your confidence level in the above diabetes management skills.</td>
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<tr>
<td>1. I am confident that I can plan balanced meals and snacks.</td>
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<td>2. I am confident that I can manage my stress.</td>
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<td>3. I am confident that I can prevent a low blood sugar during or after exercise.</td>
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<td>4. I am confident that the next time I eat out, I will be able to choose foods that best keep my blood sugars in target.</td>
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<td>5. I am confident I can include exercise into my schedule.</td>
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<tr>
<td>6. I am confident that I can use my daily blood sugars to adjust my diet, my activity, and/or my insulin.</td>
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<tr>
<td>7. When something out of my normal routine happens, I am confident that I can problem-solve and keep my diabetes on track.</td>
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</table>
### Preparedness Questions

These questions explore whether you are ready to make changes to your diabetes management in the next month. If you are already doing the activity, please check “Already doing”.

<table>
<thead>
<tr>
<th></th>
<th>Already doing</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Somewhat Agree</th>
<th>Neither Agree or Disagree</th>
<th>Somewhat Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Within the next month, I will begin to eat more balanced meals and snacks.</td>
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<tr>
<td>2. Within the next month, I will choose an exercise activity and I will start fitting it into my schedule.</td>
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<td>3. Within the next month, I will make a list of stress management options that work for me.</td>
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<tr>
<td>4. Within the next month, I will consistently plan ahead to prevent low blood sugars ○ <em>Check here if you are not taking any diabetes medication</em></td>
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<td>5. Within the next month, I will start adjusting my insulin doses on my own. ○ <em>Check here if you are not taking insulin</em></td>
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<tr>
<td>6. Within the next month, I will begin making changes to my diabetes management based on my daily blood sugars (eg - eating, activity and/or insulin).</td>
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</tbody>
</table>
7. **Within the next month,** I will begin making changes to my diabetes management to meet my overall goals (eg - eating, activity and/or insulin).

---

**Scoring Instructions**

For each question:
- Strongly agree = 7
- Agree = 6
- Somewhat agree = 5
- Neither agree or disagree = 4
- Somewhat disagree = 3
- Disagree = 2
- Strongly disagree = 1

**Skills Subscale**

Question 2: if answer is “not taking any diabetes medication” = 0. Question 4: if answer is “not taking any diabetes medication” = 0

The Skills subscale is out of 7. Add up the scores for each question and divide by 9. If the scores for question 2 and question 4 are 0, then add up the scores for each question and divide by 7.

**Confidence subscale**

The confidence subscale is out of 7. Add up the scores for each question and divide by 7.

**Preparedness subscale**
Already doing = 7 Question 4: if answer is “not taking any diabetes medication” = 0
Question 5: if answer is “not taking insulin” = 0
The Preparedness subscale is out of 7. Add up the scores for each question and divide by 7. If the score for question 4 is 0, then add up the scores for each question and divide by 6. If the score for question 5 is 0, then add up the scores for each question and divide by 6. If the scores for both question 4 and question 5 are 0, then add up the scores for each question and divide by 5.

**Total score**

The total score is out of 7. Add up the scores for each subscale and divide by 3. A higher score = greater diabetes self-management status.
<table>
<thead>
<tr>
<th>Article Identifying Information (APA reference)</th>
<th>Type of Study</th>
<th>Purpose of Study</th>
<th>Framework</th>
<th>Methods</th>
<th>Study Results</th>
<th>Practice Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Andrich D, &amp; Foronda C. (2020). Improving glycemic control and quality of life with diabetes self-management education: A pilot project. <em>Journal of Continuing Education in Nursing</em>, 51(3):119-123. DOI: 10.3928/00220124-20200216-06.</td>
<td>Quantitative</td>
<td>This study aimed to improve glycemic control and the quality of life in Medicare patients with type 2 diabetes through using diabetes self-management education/support (DSME/S).</td>
<td>None</td>
<td>Patient-specific data were collected from the DSME/S, which included exchange of information between patients and providers, multidisciplinary integration, and care coordination. Psychosocial and behavioral support with lifestyle modification was also monitored. Data was compared pre-and-post intervention (4 weeks after implementation).</td>
<td>There was a decrease in mean blood glucose levels decreased and quality of life significantly increased. A 15% increase occurred in utilization of DSME/S.</td>
<td>DSME/S were able to improve patient outcomes along with diabetes care.</td>
</tr>
<tr>
<td>2. Aziz, Z., Riddell, M.A., Absetz, P., Brand, M., &amp; Oldenburg, B. (2018). Peer support to improve diabetes care: An implementation evaluation of the Australasian peers for progress diabetes program. <em>BMC Public Health</em> 18, 262. <a href="https://doi.org/10.1186/s12889-018-5148-8-9412-8">https://doi.org/10.1186/s12889-018-5148-8-9412-8</a></td>
<td>Quantitative</td>
<td>The purpose of the study is to evaluate a peer support program to improve diabetes self-management for Type 2 Diabetics in Victoria, Australia.</td>
<td>RE-AIM and PIPE frameworks</td>
<td>This study was a cluster randomized controlled trial in which the participants attended monthly meetings for a year. Sessions were taught by a trained leader. Four key peer support functions i.e. 1) assistance in daily management, 2) connecting patients to resources and services, 3) providing emotional support, and 4) reducing barriers to care.</td>
<td>There were 273 (61.9%) eligible and willing participants out of 441 individuals. In 5 years, cardiovascular disease risk score was 65.1% (intervention) and 44.8% (control). in the intervention. Post intervention 94% participants stated the</td>
<td>Adopt these interventions into future practice. Also improve program feasibility and acceptability.</td>
</tr>
<tr>
<td>3.</td>
<td>Baumann, L.C., Frederick, N., Betty, N., Josephine, E., &amp; Agatha, N. (2015). A demonstration of peer support for Ugandan Adults with type 2 diabetes. <em>International Journal of Behavioral Medicine, 22</em>, 374–383. <a href="https://doi.org/10.1007/s12529-014">https://doi.org/10.1007/s12529-014</a></td>
<td>Quantitative</td>
<td>The purpose of this pre-post quasi-experimental study was to test the feasibility of a peer intervention to improve the following: (1) diabetes self-care behaviors, (2) glycemic control, (3) social support and emotional well-being, (4) linkages to health care providers, and (5) to assess the sustainability of the intervention 18 months later.</td>
<td>None</td>
<td>A quasi-experimental study conducted in rural Uganda with 46 participants that attended a 1-day diabetes education program. They were contacted by phone or in-person over the course of 4 months to receive assistance with daily management, social and emotional support, along with motivation to connect with appropriate health care providers.</td>
<td>Results indicated improvement in hemoglobin A1C values, diastolic blood pressure, and eating behaviors.</td>
</tr>
</tbody>
</table>

<p>| 4. | Burke, S., Sherr, D., &amp; Lipman, R. (2014, February). Partnering with diabetes educators to improve patient outcomes. | Qualitative | Partnering with diabetes educators to improve Seven self-care behaviors known as the AADE7 Self- | A six-step process that includes assessment, goal setting, planning, implementation, | Outcomes in diabetics improved. | There is an advantage to incorporating diabetes educators more into varied |</p>
<table>
<thead>
<tr>
<th>Study Description</th>
<th>Study Type</th>
<th>Study Objective</th>
<th>Design</th>
<th>Methodology</th>
<th>Intervention Details</th>
<th>Outcomes</th>
<th>Practice Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Cherrington, A., Khodneva, Y., Richman, J., Andreae, S., Gamboa, C., &amp; Safford, M. (2018). Impact of peer support on acute care visits and hospitalizations for individuals with diabetes and depressive symptoms: A cluster-randomized controlled trial. <em>Diabetes Care, 41</em>(12), 2463-2470. <a href="https://doi.org/10.2337/dc18-0550">https://doi.org/10.2337/dc18-0550</a></td>
<td>Qualitative</td>
<td>To examine the effects of peer support on acute care and hospital utilization in individuals with diabetes with or without depressive symptoms.</td>
<td>None</td>
<td>The study used quasi-poisson regression to examine differences in utilization per year attributable to the intervention for those with and without mild depressive symptoms.</td>
<td>Peer support lessened acute care visits and hospitalizations for diabetic individuals experiencing depressive symptoms. However, the results of those without depressive symptoms did not indicate a difference in utilization. A total of 168 intervention (six clusters) and 187 control (five clusters) participants had follow-up data.</td>
<td>These results can assist with allocation for population health management.</td>
<td></td>
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<tr>
<td>6. Debussche, X., Besançon, S., Balcou-Debussche, M., Ferdynus, C., Delisle, H., Huiart, L., &amp; Sidibe, A. T. (2018). Structured peer-led diabetes self-management and support in a low-income country: The ST2EP randomised controlled trial in Mali. <em>PLoS ONE, 13</em>(1): e0191262. <a href="https://doi.org/10.1371/journal.pone.0191262">https://doi.org/10.1371/journal.pone.0191262</a></td>
<td>Quantitative</td>
<td>To evaluate the effectiveness of peer-led diabetes self-management education by improving glycemic control in Type DM patients from a low-income country.</td>
<td>None</td>
<td>The intervention group received 1 year of culturally tailored structured patient education (3 courses of 4 sessions) delivered in the community by five trained peer educators. Both groups underwent conventional diabetes monitoring and follow-up.</td>
<td>In the study, the intervention group received 177 education sessions and patient attrition was 8%. During the 12 months, the decrease in HbA1c levels was 1.05%.</td>
<td>Patient education in the form of peer-led delivery displayed substantial improvements in glycemic control and anthropometric parameters over 12 months.</td>
<td></td>
</tr>
<tr>
<td>7. Doull, M., O’Connor, A. M., Welch, V., Tugwell, P., &amp; Wells, G. A. (2017). Peer</td>
<td>Qualitative</td>
<td>1. To determine effectiveness</td>
<td>None</td>
<td>Individuals above 18 years old in any setting were</td>
<td>N/A</td>
<td>These interventions can be applied to</td>
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<table>
<thead>
<tr>
<th>Study</th>
<th>Design</th>
<th>Objectives</th>
<th>Findings</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Hailu, F.B., Moen, A., &amp; Hjortdahl, P. (2019). Diabetes Self-Management Education (DSME) – Effect on knowledge, self-care behavior, and self-efficacy among type 2 diabetes patients in Ethiopia: A controlled clinical trial. <em>Diabetes Metabolic Syndrome and Obesity, 12</em>, 2489-2499. <a href="https://doi.org/10.2147/DMSO.S223123">https://doi.org/10.2147/DMSO.S223123</a></td>
<td>Quantitative</td>
<td>Explore how DSME program effects knowledge, self-care, and self-efficacy.</td>
<td>In Ethiopia, pre and post intervention groups for this study, which was conducted at Jimma University Medical Centre. 116 participants with T2DM were randomly assigned to the DSME intervention and 104 to a comparison group. Study conducted 6 interactive DSME sessions supported with informational supplies, experience-sharing, and take-home activities. There were no significant differences within or between the groups with self-care behavior or self-efficacy, but the intervention had increased differences with following dietary guidelines (p = 0.027) and footcare (p = 0.009) for a longer period of time. The results demonstrate that DSME intervention serves as clinical importance and disease management in developing countries such as Ethiopia.</td>
<td>None</td>
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<tr>
<td>9. Hernandez, R., et al. (2014). Correlates of self-care in low-income African American and Latino patients with diabetes. <em>Health Psychology, 33</em>(7), 597-607.</td>
<td>Qualitative</td>
<td>Examine type 2DM in low-income African American and Latino patients that</td>
<td>A cross-sectional analysis was conducted on 250 participants older than 18 years old, which attended a diabetes self-</td>
<td>Distress related to diabetes was the strongest correlate for DSC representing 14-33% of variance across ethnic subgroups. Lack of Patterns were detected between race minorities when addressing DSC. Significant correlates found may help with</td>
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*DSME AND PEER SUPPORT PROGRAM*

**Research Design:** Quantitative  
**Purpose:** This study explored effects social support groups (SSG) in diabetics following a 3-month intervention.  
**Intervention:** Intervention of SSG was delivered to 47 adult type 2 diabetes to assess HbA1c, BP, triglycerides, cholesterol, and diabetes self-management knowledge and behaviors at baseline, 3 months, and 6 months.  
**Results:** Results indicated significant improvements in HbA1c, diabetes-related self-management knowledge, and behaviors from baseline to 3-month assessment. There is no indication in differences between the SSG and control group from 3-month to 6-month, which couldn’t detect sustainability.  
**Conclusion:** Although SSG is effective, improvements need to be explored in practice to promote sustainability after three months post intervention.

### 11. **Juul, L., Rowlands, G., & Maindal, H. T.** (2018). Relationships between health literacy, motivation and diet and physical activity in people with type 2 diabetes participating in peer-led support groups. *Primary Qualitative*

**Research Design:** Qualitative  
**Purpose:** In Danish Type 2 diabetics, the researchers aimed to explore associations between self-determination theory.  
**Intervention:** 194 individuals participated in peer-led support groups from January–December 2015. The cross-sectional study design had a self-alignment.  
**Results:** The adjusted β (95% CI) showed that autonomous motivation and functional HL were associated with following  
**Conclusion:** Functional health literacy and autonomous motivation are influences for adherence with diet and physical activity.
<table>
<thead>
<tr>
<th>Source</th>
<th>Method</th>
<th>Description</th>
<th>Findings</th>
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<tbody>
<tr>
<td><a href="https://doi.org/10.1016/j.pcd.2018.02.005">Care Diabetes, 12(4), 331–337.</a></td>
<td>Qualitative</td>
<td>The purpose of this study was to use the Boot Camp Translation (BCT) to promote stakeholder/patient engagement, practice, and community resource through self-management support (SMS) of diabetics.</td>
<td>During the process meetings were held by stakeholders via phone and conference calls for 8 months. Experts provided education on the diabetes SMS, while facilitators encouraged group discussions on barriers to success with SMS. BCT participants identified lack of social support, personal resources, trust, knowledge and confidence as barriers to diabetes self-management. Intervention opportunities emphasized peer support, use of multidisciplinary care teams and centralized systems for sharing information about community and practice resources. SMS provided opportunity for self-management as patients and family were interactive with diabetes care, peer support, group visits, and multidisciplinary care teams. It was recommended that SMS be individualized with a consideration for health literacy to improve the delivery of SMS.</td>
</tr>
<tr>
<td>Park, P., Wambui, C. K., Atieno, S., Egger, J. R., Misoi, L., Nyabundi, J. S., Pastakia, S. D., Bloomfield, G., &amp; Kaman, J. (2015). Improving diabetes management and cardiovascular risk factors through peer-led self-management support groups in Western Kenya. <em>Diabetes Care, 38</em>(8), 110-111. <a href="https://doi.org/10.2337/dc15-0353">https://doi.org/10.2337/dc15-0353</a></td>
<td>Quantitative</td>
<td>To evaluate the impact of a diabetic self-management support intervention on diabetes and cardiovascular disease risk factors.</td>
<td>In west Kenya, each group consisting of a peer leader and peers, completed a 4-week training over 6 months guided by the International Diabetes Federation Peer Leader Manual. The bimonthly group meetings focused on self-empowerment, 6-month post HbA1c values improved with a decrease from 9.6% to 8.7%. Factors related to BMI, tribe, gender, education, peer group, glucometer use, insulin use, did not impact HbA1c levels. Systolic BP decreased from 132.4 mmHg to 127.5 mmHg. However, there were no significant improvements in A1c levels and BPs indicates peer led support would be beneficial in practice. Sustainability of the intervention is evident since 9 of the 12 groups chose to continue ongoing peer group meetings after the study concluded.</td>
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</table>
**Quantitative**

<table>
<thead>
<tr>
<th>Study</th>
<th>Description</th>
<th>Outcomes</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piatt, G. A., Rodgers, E. A., Xue, L., &amp; Zgibor, J. C. (2018). Integration and utilization of peer leaders for diabetes self-management support: Results from project SEED (Support, Education, and Evaluation in Diabetes). <em>The Diabetes Educator</em>, 44(4), 321. <a href="https://journals.sagepub.com/doi/10.1177/0145721718777855">https://journals.sagepub.com/doi/10.1177/0145721718777855</a></td>
<td>Evaluate the effectiveness of a peer leader-led diabetes self-management support (DSMS) group in Type 2DM patients. Aims include achieving and maintaining improvements in hemoglobin A1C, self-monitoring of blood glucose, and reducing distress.</td>
<td>Decreases in A1C occurred between baseline and post-DSME in both groups. Both groups sustained improvements during DSMS, but A1C levels increased during telephonic DSMS. Improvements in self-monitoring of blood glucose were observed in both groups following DSME and were sustained throughout.</td>
<td>Peer-led DSMS is equally effective as the traditional method in producing positive outcomes for glycemic control, self-monitoring, and alleviating diabetic distress. With increasing diabetes prevalence it is important to create additional resources and strategies to...</td>
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</tbody>
</table>
At study end, the intervention group was 4.3 times less likely to have diabetes regimen–related distress compared to EUC.

Peer support group could decrease the level of depression in diabetic patients therefore, it is recommended that peer education be considered as a part of patients’ therapeutic program with the aim of reducing mental symptoms.
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<tbody>
<tr>
<td><strong>Methodology</strong></td>
<td>Qualitative</td>
</tr>
<tr>
<td><strong>Design</strong></td>
<td>To investigate low-income, Spanish-speaking, Latino population motivation for participating in diabetes self-management education (DSME) classes.</td>
</tr>
<tr>
<td><strong>Influences</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>Barriers</strong></td>
<td>Design: Thematic analysis. 15 participants from an Oregon clinic attended semi-structured interviews to understand influences on being involved in DSME classes. Barriers to class attendance included lack of time, childcare, and transportation. Males experienced shame of illness and lack of interest in health, which made it difficult to contact participants by telephone. Participants that were motivated credited their family as a positive influence/support, eager to learn about the effects of diabetes, good experiences with peer support classes.</td>
</tr>
<tr>
<td><strong>Outcome</strong></td>
<td>Understanding influential factors of diabetes management is an important step of creating beneficial classes to create successful outcomes. Study recommends adopting a creative, targeted approach, with eliminating barriers when designing DSME classes.</td>
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<tbody>
<tr>
<td><strong>Methodology</strong></td>
<td>Quantitative</td>
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<tr>
<td><strong>Design</strong></td>
<td>To examine the effects of participating in a “train-the-trainer” program with Chinese type 2 diabetics being a peer supporters.</td>
</tr>
<tr>
<td><strong>Participants</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>Comparison</strong></td>
<td>The “train-the-trainer” program had 79 participants with Hb A1c levels lower than 8% to become peer supporters. 59 completed the program successfully, while 33 agreed to be peer supporters (trainees) for 1 year. 26 trainees declined to be supporters (“refused trainees”). Comparison group of 60 patients had fair glycemic control, so didn’t</td>
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<tr>
<td><strong>Outcome</strong></td>
<td>The HbA1c did not change in the trainees at 6 months but increased in the comparison group. Self-reported self-care activities such as foot care and compliance with diet improved in trainees rather than the comparison group. After further monitoring at 4 years the trainees remained stable. Sustainability is evident when diabetic patients engage in ongoing peer support to other patients with diabetes.</td>
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