A Case Study: Diabetes Interventions and Self-Care Opportunities (DISCO) Program for Predominantly Black Communities

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A Case Study: Diabetes Interventions and Self-Care Opportunities (DISCO) Program for Supporting Diabetes Management Needs in a Predominantly Black Community

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University of Pittsburgh, 2022

Abstract

Diabetes is a chronic health condition with increasing prevalence rates leading to high mortality and morbidity in the United States. Type 2 diabetes is the most diagnosed form of this condition and is a result of lifestyle behaviors, environment, and preventative care measures. Due to the racial and systemic disparities existing in resource allocation and access to care, underserved Black populations are at an increased risk of developing and worsening of a Type 2 diabetes diagnosis. To help combat this issue and remove any potential barriers, the University of Pittsburgh School of Health and Rehabilitation Sciences Wellness Pavilion created an interprofessional and community-based health education program called DISCO, Diabetes Interventions and Self-Care Opportunities, comprised of educational hands-on sessions in nutrition, mental health counseling support, physical exercise, and medication management. This approach focuses on targeting public health-related challenges in underserved populations by drawing upon the social-ecological framework to understand the various factors affecting diabetes care management. This essay will describe a pilot offering of the DISCO program where the author will discuss the program's design, implementation, and effectiveness on educating and empowering individuals with pre-diabetes, diabetes, or a caregiver of someone with diabetes. The program's long-term goals are to build support systems, trust in a community, and increased health literacy.

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"Health care is vital to all of us some of the time, but public health is

vital to all of us all the time."

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1.0 Introduction

Diabetes mellitus (diabetes) is widely accepted as a major health problem with increasing prevalence rates leading to high mortality and morbidity worldwide, with 34 million (1 in 10) individuals having diabetes (Centers for Disease Control and Prevention [CDC], 2022). Diabetes is a chronic health disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. In the United States (U.S.), diabetes is the 7th leading cause of death with Type 2 diabetes (T2D), accounting for approximately 90-95% of all diagnosed cases (CDC, 2021). This type of diabetes develops over time through lifestyle behaviors and is usually diagnosed in adults but with the increase in childhood obesity in the U.S., it is now being diagnosed in children. If left untreated, individuals diagnosed with diabetes are at a higher risk of developing various health complications, including an early death.

In recent years, there has been great concern over the frequency of health complications from diabetes in minority population groups in the U.S. Black adults are twice as likely as their White counterparts to develop T2D, with 60% of Black adults having high blood pressure as a comorbidity to diabetes compared to 30% of White adults (*Factors contributing to higher incidence of diabetes for black Americans*, 2018). Genetic traits, the prevalence of obesity, and insulin resistance in the Black community contribute to higher rates of diabetic complications due to systemic barriers in accessing health care and healthy food options, along with racial and socioeconomic disparities that exist in those communities (Peek et al., n.d.). This is especially the case in Pittsburgh, Pennsylvania, where over time, shifts have led to wealthier residents relocating to healthier environments with fewer crowds and less air pollution, which has limited the choice for less wealthy residents in deciding where to live. This shift has occurred in Homewood, a

Pittsburgh neighborhood that was once thriving with businesses but has faced an influx of displaced low-income Black Americans from the Hill District when the Civic Arena (later known as Mellon Arena) was built in the early 1950s. This influx resulted in an increase from 22% to 66% of Black individuals in Homewood within a decade, changing the home ownership and racial demographics in the community (*Homewood's History – Homewood Community Development Collaborative*, 2022). Today, this area is facing a decline of residents, as seen in Table 1; around 6,500 individuals live there today due to various factors of disinvestment in the community and the Fair Housing Act of 1968, giving more affluent Black Americans the opportunity to move to other communities (*Community Plan – Homewood Community Development Collaborative*, 2022). A map of the Homewood region can be seen in Figure 1.

Total Population per	Sum of Estimate;
Area	Total
Homewood North	3,371
Homewood South	2,276
Homewood West	850
Grand Total	6,497

Table 1. Total Estimated Population in Homewood Neighborhood, 2022



Figure 1. Map of Homewood, Pittsburgh, Pennsylvania Image used with permission from University of Pittsburgh Center for Social & Urban Research

Population loss in Homewood has led to a significant decrease in wealth and resources available as residents with higher incomes leaving the community. About 92.8% of Homewood residents are Black, compared to 24.7% in the City of Pittsburgh, and the median household income in the area is \$19,642, compared to \$40,715 in the City of Pittsburgh (*Community Plan – Homewood Community Development Collaborative*, 2022). Homewood suffers from racial and socioeconomic health disparities due to a lack of investment in the community. Homewood has no full-service grocery stores (see Figure 2), which negatively impacts the availability of fresh produce and healthy food options (*Community Plan – Homewood Community Development Collaborative*, 2022). The corner markets available in Homewood are limited in capacity and have a higher concentration of ultra-processed and energy-dense food products. Additionally, the COVID-19 pandemic forced many small businesses to shut down due to a shortage of labor and consumers. Local non-profit organizations have made farming efforts; however, the consistency of supply is dependent on soil conditions, unpredictable weather patterns, and labor.



Figure 2. Pittsburgh Area Food Access Map with an Outline of Homewood

Additionally, there is a lack of health care services or education related to improving and maintaining one's health. A listening session to better understand the health care needs of Homewood residents revealed that many individuals had apprehensions regarding the lack of insurance and accessibility of health care services in Homewood, with the cost of medical care being a critical concern in the community (*Partners for a Healthy Community*, 2019). Residents are forced to seek care outside of their community while relying on public transportation, which has been risky due to the high transmissibility of COVID-19 and unreliable. In addition, some residents have reported having negative experiences with health care providers who lacked personalized care and respect for their patients (*Partners for a Healthy Community*, 2019).

Image used with permission from the Department of City Planning, City of Pittsburgh

Homewood residents are at an increased risk for diabetes compared to those in surrounding communities. When separated by sex, diabetes is the 3rd highest health condition in Homewood, which is supported by a higher percentage of obese women (*Partners for a Healthy Community*, 2019). The adverse health effects of diabetes are modifiable through blood glucose control, and treatment of risk factors such as hypertension, and physical activity. Therefore, effective management and self-care strategies are vital. To encourage the modification of health effects, patient education is imperative; having the patient being an active part of their health improvement process leads to empowerment and self-control, rather than dependence.

The University of Pittsburgh (Pitt) Community Engagement Center, Homewood (CEC-Homewood) is a community space that listens to and acts on the needs of the community. Within the CEC-Homewood sits the Pitt School of Health and Rehabilitation Sciences (SHRS) Wellness Pavilion (WP), which aims to reduce barriers to health care access by offering free programs that support the education and empowerment of residents to improve, maintain, and promote residents' health and wellness, across a lifespan (*About*, 2020). By listening to the needs of the community from various assessments indicating increased diabetes rates and the community's concerns with the lack of affordable health care options, SHRS units and Pitt School of Pharmacy (Pharmacy) developed an interprofessional diabetes management program, DISCO (Diabetes Interventions and Self-Care Opportunities). Through a six-week program, DISCO aims to improve, educate, and empower pre-diabetic and diabetic residents by focusing on mental health, nutrition, physical exercise, health screenings, and medication management (*Interprofessional diabetes education at the Homewood CEC*, 2015).

The purpose of this paper is to describe the DISCO program's successes and limitations in educating and empowering community members to manage their diabetes.

2.0 Context and Background

The following sections provide context and background information supporting the prevalence of diabetes in Homewood and Pitt's commitments to alleviate the barriers faced by the community. Additionally, this section highlights on the importance of interprofessional programming and team-based approaches to delivering care.

2.1 Social-Ecological Framework of Health: T2D in Homewood

T2D results from a combination of environmental, behavioral, and genetic factors (Florez et al., 2018). This condition results from cells in one's body being resistant to insulin and as a result, the pancreas makes more insulin; when the cells do not respond as they are supposed to, blood sugar rises, damaging the body and causing other serious health problems (CDC, 2021). T2D is managed by the individual, with support from health care professionals, family, and friends. To understand the multiple levels of influence of T2D in the Homewood community for non-Hispanic Black adults, the author will utilize the social-ecological framework, as seen in Figure 3. This framework showcases an understanding of the various personal and environmental factors that impact residents of Homewood that have been diagnosed with T2D. These multiple levels of influence that can impact the prognosis and diagnosis of diabetes include: Individual, Interpersonal, Organizational, Community, and Policy. At the individual level, residents' lifestyle behaviors, biological influences, and household income levels can contribute to the prognosis and diagnosis of diabetes. From interpersonal relationships with friends or family members, an

individual's thoughts and perceptions around preventative behaviors can contribute to or worsen the condition. For example, if an individual is mocked by their peers or family members for counting sugar intake or there are no healthy food options at a social setting, they will be less likely to adhere to their care plan. At the community level, Homewood residents are distrusting of large organizations coming into the community and residents do not want to feel as if they are being observed so, there might be resistance to participating in diabetes support groups. Additionally, the lack of grocery stores, limited green spaces, and poor air quality in Homewood contribute to individuals not being able to access and participate in healthier lifestyle behaviors. Institutionally, the costs associated with disease management are high and with limited resources available to pay, an individual might decide not to use their money on health care but rather, on current needs. High crime and incarceration rates in the neighborhood can contribute to stress, leading to hypertension and other health conditions, which can make diabetes worse. Also, access to care is limited due to transit issues and a lack of knowing what is available locally. Finally, under the policy level, a lack of regulations on the price of medications in the U.S. is causing the price of necessary treatment options, such as the price of insulin, to rise. Also, Medicaid and Medicare coverage for disease management and medication can be unreliable based on policy changes, which can deter someone from seeking care or knowing what is covered on an annual basis. These, among other influences for each factor within the social-economic framework, are further discussed in Table 2.



Figure 3. Factors of the Social-Ecological Framework

Factor	Influence of T2D in Homewood
Individual	 Dietary habits Exercise habits Genetic influence Awareness and education around T2D condition
Interpersonal Relationships	 Peer perception of diabetes management Peer perception of dietary choices Availability of healthy options in a group setting
Community	 Perception of diabetes support group Perceptions of T2D condition Lack of fully functional grocery store Limited green spaces Poor air quality
Institutional	 Cost coverage for diabetes management treatment and education programs Crime/incarceration Employment Access to specialists for diabetes management
Policy	 Governmental regulations on the price of insulin Governmental programs to make healthier food options accessible and affordable Medicaid/Medicare coverage for diabetes management treatment and education

Table 2. Social-Ecological Framework Factors Related to T2D in Homewood

2.2 About the SHRS Wellness Pavilion

SHRS is a school within Pitt that supports the educational training of future health and rehabilitation professionals, including audiologists, speech language pathologists, registered dietitians, physical therapists, occupational therapists, physician assistants, mental health counselors, athletic trainers, emergency medical technicians/paramedics, and health information specialists, to name a few. Overall, SHRS strives to be a "leader in rehabilitation and disabilities education, research and community service, improving the lives and independence of all people with a focus on people at risk for or having chronic conditions or disabilities and those who have traditionally been underserved and underrepresented" (*About /University of Pittsburgh School of Health and Rehabilitation Sciences*, 2019). The WP was established as a result of SHRS' commitment to its vision to be a catalyst for a world free of barriers and disparities.

The WP exists inside the W.E.L.L. (Wellness, Education, Living & Learning) at the CEC-Homewood and is equipped with a fully functioning commercial-grade kitchen, a multipurpose space, several meeting/consultation rooms, a two-way mirrored counseling space, and audio/visual capabilities with a projector screen (Our Space, 2020). In addition to providing free health and wellness-focused programs for the lifespan, it is committed to fostering healthy relationships between SHRS and the community and its local organizations. Through interprofessional collaborations, trainings, and person-centered approaches to care, the WP aims to support health equity and remove barriers for access to high-quality care in Homewood. Since its implementation in March 2020, the WP has engaged many community members through the use of synchronous, in-person, asynchronous, and virtual programming, as well as the engagement of SHRS students and faculty. Current programs to support the community are evidence-based and organized around the dimensions of wellness. Examples of programming include mindfulness sessions, support groups, physical exercise through dance workshops (Dance and Be Fit), cooking demonstrations (Cooking with Kids), certifications and trainings (Babysitting Certification, Mental Health First Aid), educational panels on Black maternal health and health disparities, blood pressure education, youth empowerment classes (PittEnrich, Beyond the Bell), and handwriting workshops (Hope for Handwriting). This space features a fully-equipped commercial-grade kitchen, a multipurpose space for group activities, consultation rooms with exam tables and sinks, and a shared mental health counseling suite.

2.3 Community-based Interprofessional Model

The WP encourages interprofessional programming and opportunities to deliver information to Homewood and surrounding communities. This interprofessional approach offers a collaborative partnership between various health and rehabilitation students and disciplines to work together and make recommendations using their diverse backgrounds. The WP encourages students and faculty at SHRS to think beyond their academic area when developing programs to determine collaboration opportunities for other SHRS and Pitt units. The DISCO program takes place at the WP (multipurpose room and commercial grade kitchen) and is comprised of four programs: Physical Therapy (PT), Nutrition and Dietetics (NUTR), Counseling¹ (COUN), all SHRS, and one non-SHRS Pitt unit, School of Pharmacy (PHARM). Interprofessional collaboration with the above programs was determined for the DISCO program because of the alignment of each discipline's educational curriculum in relation to what is typically necessary to provide effective diabetes management and care. The Mayo Clinic identifies healthy eating, physical exercise, medication management, and stress/illness management as strategies for controlling blood sugar (Diabetes management: How lifestyle, daily routine affect blood sugar, 2020). The American Diabetes Association has self-management programs and resources around nutrition and recipes, weight loss, fitness and physical activity, mental health, and resources for loved ones and caregivers (*Healthy Living / ADA*, 2022). Additionally, when considering the psychological impact of a diabetes diagnosis, it is seen as a life altering event that requires a new

¹ Due to the timing of the sessions, Counseling was not a part of the DISCO program in Fall 2021.

routine; if left untreated, individuals are at an increased risk for developing depression, anxiety, and eating disorders (*Diabetes and Mental Health*, 2014).

Before participating in any programs at the WP, students and faculty must take a Homewood training and orientation with an emphasis on cultural humility. Additionally, future rehabilitation and health professionals and their trainers are encouraged to read reports on the community's strengths and needs. The curriculum for the DISCO program was based on best diabetes management practices as well as community interests and resources in mind. Each of the sessions began with a registration process where participants were asked to sign the WP liability waiver form, have their vitals checked by a PT student, and a dance warm-up. All sessions ended with a cooking demonstration with NUTR students. PHARM was present at all sessions and answered questions about medication interactions. Table 3 describes the community-based, interprofessional approach to the DISCO program curriculum in Fall 2021 in more detail.

¹ Due to the timing of the sessions, Counseling was not a part of the DISCO program in Fall 2021.

Session Number	Topics
1 (Welcome)	 Vitals check (PT) Physical activity readiness assessment (PT) Overview of DISCO program and introductions (All) Diabetes overview (PHARM) Dance Warm-up (PT) Cooking demonstration (NUTR) Myth or Fact activity (NUTR)
2 (Introduction to Nutrition)	 Vitals check (PT) Dance Warm-up (PT) Plate method activity (NUTR) Cooking demonstration (NUTR) Medication review (PHARM) Hypoglycemia management (PHARM)
3 (Nutrition Continued)	 Vitals check (PT) Dance Warm-up (PT) Benefits of exercise (PT) Cooking demonstration (NUTR)
4 (Medications and Adherence)	 Vitals check (PT) Dance Warm-up (PT) Medication lesson, targeted on adherence, OTCs, hypoglycemia action plan (PHARM) Cooking demonstration (NUTR)
5 (Health Maintenance)	 Vitals check (PT) Dance Warm-up (PT) Foot screenings (PT) Discussion on complications with diabetes (PHARM) Cooking demonstration (NUTR)
6 (Summary)	 Vitals check (PT) Dance Warm-up (PT) One-on-one physical activity planning (PT) One-on-one meal planning (NUTR) Medication management referrals (PHARM) Cooking demonstration (NUTR)

Table 3. DISCO Program Curriculum (Fall 2021)

3.0 Literature Review

3.1 Burden of Diabetes in U.S.

Diabetes, especially T2D, has a substantial social and economic burden in the U.S. With one in three individuals projected to develop T2D by 2050, the annual cost of diagnosed diabetes is estimated to be approximately \$327 billion annually (*The Cost of Diabetes / ADA*, 2018). Medical costs for individuals with diabetes are about 2.3 times higher than medical costs for those without diabetes and on average, a person with diabetes incurs \$16,750 in medical expenditures each year; 5% of this amount is directly related to diabetes (*The Cost of Diabetes / ADA*, 2018). The costs of prevention, treatment, and management options for a diabetic individual are high and are more costly for residents in underserved communities where resources to promote a healthy lifestyle are not readily available.

A study conducted at the Department of International Health, Johns Hopkins School of Public Health (Park et al., 2020) analyzed neighborhood influences on physical activity in a lowincome community in Baltimore with population and geography similar to Homewood; it found that individual barriers to physical activity were amplified by neighborhood-level factors such as crime, especially among those with T2D and disabilities. The research further suggests that residents of resource-deprived neighborhoods tend to have poorer access to health-promoting neighborhood features (e.g., exercise facility or healthy food) and have easier access to healthdamaging features (e.g., fast food outlets or crime) (Park et al., 2020).

3.2 Benefits of Interprofessional Approaches to Care

Despite significant advances in the U.S. health care delivery system, low-income older adults with health conditions remain among those with the highest disease burden, highest health care utilization, and poorest health outcomes. There is a need to introduce new approaches to address the intersectionality of the role of social determinants of health and the impacts on health care utilization and outcomes to enhance value-based care. To support this initiative, an interprofessional health professional team of faculty from Virginia Commonwealth University created the Richmond Health and Wellness Program (RHWP) to serves as an interprofessional education experience for students the academic health science center to leverage their resources and learning into the delivery of a wellness program. Measuring the program's effectiveness found that this model enhanced wellness and healthcare access and a reduction in health care utilization in emergency department visits and hospital admissions among medically complex, lower income, older adults (Parsons et al., 2021). Other studies suggest that interprofessional care teams can strategize, brainstorm, and reflect on how to better care for patients by being able to discuss connections between the physical and socio-emotional components of patients' lives. Through this approach, the team can use proactive and innovative strategies to improve patient health and unnecessary use of inappropriate health services (Brooks et al., 2020). Other collaborative programs focus on providing care to low-income populations with outcomes that enhance their health and wellness.

4.0 DISCO Program Design and Implementation

Before implementing any programs at the WP, the aim of these programs must be assessed to determine whether they would be beneficial to the community through a discussion involving the program leads. The logic model for the DISCO program (seen in Table 4) describes the chain of causes and effects that would lead from implementing the program. Through utilizing University and SHRS resources, evidence-based sessions and discussions will take place leading to the outcomes of empowering and educating individuals.

		Situation: Adults in Homewood are at an increased risk to develop diabetes due to personal and environmental factors.			
Inputs	Out				
What we invest	Activities	Participants	Short	Medium	Long
 Funding from Pitt Seed Grant and SHRS Education team made up of Pitt faculty and students Partnership with Pitt CECs Education materials Marketing and advertising on Facebook and newsletters 	 Interdisciplinary sessions Evidence-based sessions to educate and discuss risk factors and how to control diabetes Information to participants to learn more about medication management, healthy eating, local support Development of personal goals post- program 	 Homewood residents with prediabetes, diabetes, or caregiver of diabetic patient Might have trickling effect on families, peers, or members of surrounding communities 	 More adults fron Homewood will understand wha causes diabetes More adults fron Homewood will gain confidence managing condition More discussion and awareness about how to live with diabetes 	 More diabetic adults from Homewood will participate in program DISCO program expands partnerships and will add new educational materials More people are willing to share information from DISCO program 	Sustained community engagement effort by Pitt Increased support through Pitt students and faculty Decreased incidence of Type 2 Diabetes in Homewood Increased health literacy to diabetes information Increased access
	As 1. 2. 3.	sumptions: Program is well-reco Outreach efforts are Information will emp	eived by stakeholde e effective power and educate	individuals	to support services

Table 4. Logic Model for DISCO Program at CEC-Homewood

The DISCO program is designed to bring diabetes-specific expertise from Pitt into the Homewood community. The WP supports this program, which is based on evidence and innovative methods to implement. This program focuses on the important aspects of diabetes care management outlined below:

- Provide patients with diabetes with resources and educational content for them to utilize in the community and at home; and
- 2) Assist with managing T2D and its complications.

Through this approach, the program's goal is to educate individuals with T2D to take control of their own health, despite the institutional barriers in Homewood. The program aims to accomplish this goal by providing the necessary tools and resources specifically tailored to them and their condition. This program is free of cost to ensure there is no financial burden for individuals seeking to improve or maintain their condition. Currently, the program is grant funded and will remain so with financial support from SHRS when the funding no longer covers costs associated with the program. Funding needed to properly run this program covers groceries for food demonstrations, folders for each participant, giveaways related to diabetes care, and any equipment or supplies the facilitators need for their activities.

After continued discussion between the WP staff and faculty from PT, PHARM, and NUTR programs, it was agreed to introduce a pilot six-week program in November 2021. Program sessions took place on Mondays from 9:30-11 am in the WP commercial-grade kitchen and multipurpose space. Later, this program would be implemented in Spring 2022 (see Table 5) and offered as a two-part series of four-week sessions. Additionally, future sessions will continue to be offered at the Pitt Community Engagement Center, Hill District. This paper will focus on the implementation and effects of the November 2021 offering at the CEC-Homewood.

Program Type	Complete By	Task					
	Jul. 2020-Aug. 2021	Community needs gathered, recruitment and marketing materials developed.					
Pilot	Sep. 2021	Meet with participating students and faculty, outline of program set in place, gather community interest and preferences to program timing.					
(11/1/2021- 12/6/2021)	Oct. 2021	Recruit guests from Homewood and surrounding communities through social media engagement and CEC- Homewood outreach.					
	Nov. 1, 2021	GO LIVE					
	Jan. 2022	Pilot program assessment, future program outline set in place.					
DISCO 1 (2/15/2022- 2/8/2022)	Jan-Feb. 2022	Recruit guests from Hill District and surrounding communities through social media engagement and CEC- Hill District outreach.					
5/8/2022)	Feb. 2022	GO LIVE					
	Mar. 2022	DISCO 1 program assessment, DISCO 2 program outline set in place.					
DISCO 2 (TBD)	May 2022/June 2022?	Recruit guests from Homewood and surrounding communities through social media engagement and CEC- Homewood outreach.					

Table 5. DISCO Program Implementation Schedule

4.1 Pitt Student and Faculty Recruitment

SHRS and PHARM students and faculty volunteered their time and integrated evidencebased resources to develop interprofessional sessions. All students involved in the DISCO program were required to complete an orientation specific to the Homewood community to be trained on the importance of cultural humility. The faculty members involved had previously worked in collaboration with the WP and were involved in programming in the Homewood community. SHRS faculty members were designated with community engagement responsibilities and served on the SHRS WP Committee; PHARM faculty is the director of MedWell, a dedicated space for the School of Pharmacy within the CEC-Homewood. More information for the faculty involved in the DISCO program can be found in Table 6. Students were recruited from each discipline by the appropriate faculty member. PT students were involved as a part of a community engagement component of their curriculum, NUTR students fulfilled their practicum requirement at the WP for Fall 2021 with participation in DISCO being a responsibility, and PHARM students were completing a clinical rotation at a community-based site (WP).

Pitt Affiliation	Name & Credentials	Areas of Expertise	Topics Covered
School of Health and Rehabilitation Sciences	Caroline Passerrello, MS, RDN, LDN	Nutrition and Dietetics	 Food demonstrations Nutrition mini lessons Healthy Plate Method review Hypoglycemia review Eating on a budget discussion
School of Health and Rehabilitation Sciences	Bonnie Virag, PT, DPT, OCS, MA, ATC	Physical Therapy	 Vitals measurements Physical activity readiness assessment Dance warm-up Lecture on physical activity One-on-one physical activity plan development Foot screenings
School of Health and Rehabilitation Sciences	Victoria Hornyak, DPT, GCS	Physical Therapy & Interprofessional Education	 Vitals measurements Physical activity readiness assessment Dance warm-up Lecture on physical activity One-on-one physical activity plan development Foot screenings
School of Pharmacy	Catherine Rebitch, PharmD, BCACP	Pharmacy and Therapeutics	 Diabetes overview lecture Medication reviews Hypoglycemia management lecture Medication management mini lesson

 Table 6. Pitt Faculty Involvement in DISCO (Fall 2021)

4.2 Guest Recruitment

Participants ("guests") in the program were recruited using flyer distributions (see Figure 4), promotional video, social media engagement, word-of-mouth from community members, and physical presence of WP and PHARM at community farmers markets, health fairs, and dinners. Currently, the program is available to pre-diabetic and diabetic individuals, and caregivers for someone with diabetes. Community outreach efforts were made by informing community partners, such as Oasis Farm and Fishery and Bennett Place. Interested individuals were asked to complete an online survey to indicate their interest in participating in the pilot program; details of this survey can be found in Appendix B. Because of COVID-19, the program implementation date was delayed due to Pitt being in a high-risk³ operational posture until October 9, 2020, and student availability. Additionally, there was concern about the time of day the program should be offered, based on students' and community members' availability; guest responses indicated the best time was to have the program in the morning.

² Pitt is open but activities are heavily restricted (campus life activities not permitted, instruction is nearly all virtual, work from home is encouraged).



Figure 4. DISCO Program Fall 2021 Promotional Flyer

Initially, seven individuals diagnosed with T2D indicated their preference for meeting in person in Fall 2021 for a diabetes management program. Once the individual responded to the survey, the WP program coordinator called the individual to confirm their availability for the session start date and provide them with next steps. As a next step, a PHARM student called the individual to complete a pre-program questionnaire specific to health, living status and current medications. Details of this questionnaire can be found in Appendix C. To fully participate in the program, interested individuals are required to travel to the CEC-Homewood and be an active part of the program. Before the launch of the pilot program, there was general excitement and anticipation of the program's start date from the community and any promotion of it was all received. Four individuals out of the initial seven who completed the interest form successfully were confirmed and surveyed by PHARM prior to November 1, 2021.

4.3 Creating Guest Program Material

For the pilot program, the WP staff worked with SHRS students, faculty, and PHARM students and faculty to create and disseminate education materials and session supplemental documents. These materials included handouts of the presentation slides for each session, vitals report from each session, and useful infographic handouts. After the program, guests who completed the program received blank charts and tables to use post-program, personalized physical activity plan, exercise bands to use when exercising, a hypoglycemia first aid kit, and a diabetes Healthy Plate (Figure 5). These materials promoted diabetes care management awareness among guests, which allows them to take control of their illness and retain the information taught during the program.



Figure 5. Diabetes Healthy Plate Given to DISCO Participants

The materials were curated by topic and session theme by the faculty and students involved in creating and facilitating the sessions. Once developed, the educational resource and/or supplemental documents were shared with the WP program coordinator, who printed out the materials. Each guest received a folder on their first session date; all program materials fit into this folder that the guests brought to each session. At the end of the pilot program, there was an overall satisfaction and appreciation relayed verbally by the participants and students on how DISCO went. Upcoming WP programming was shared with participants to encourage the continuation of best practices in managing their diabetes and implementing healthy behavior into their daily lives.

4.4 Cohort Characteristics

On November 1, 2021, two guests (Participant X and Participant Y^4) arrived and completed the first session of the program. Participant X completed five sessions while Participant Y completed three, as seen in Table 7; Participant X and Participant Y were not able to attend all sessions due to forgetting appointment dates and having medical appointments and emergencies during the program dates. A third guest attended one session only – the author has chosen not to include this guest's information in the data from the pilot program due to it being incomplete. All guests provided the author verbal consent for being included in this paper.

³ Guest names have been disguised to protect their identities.

Guest	1	2	3	4	5	6	Total
Participant X	1	1	1	0	1	1	5
Participant Y	1	0	1	1	0	0	3

 Table 7. Session Attendance Per Guest DISCO Fall 2021

All of the guests were from Allegheny County, with one living in Homewood and the other living closer to the Hill District. Both were non-Hispanic Black females, 65+ years of age, retired, and with diagnosed T2D. Table 10 describes each guest's personal health information prior to their starting the pilot program. This information was collected using a printed questionnaire that guests took home to complete after the first session; details for this questionnaire can be found in Appendix D. Results of this questionnaire were used to tailor each session's curriculum appropriately and allow the program facilitators to learn more about each participant's health history.

Name	Participant	Participant
	X	Y
Is there one particular doctor that you think of as your regular personal	Yes	Yes
doctor?		
Are you currently receiving regular medical care for your diabetes?	Yes	Yes
Have you had a Hemoglobin A1c test in the past 6 months?	Yes	No
Are you currently a smoker?	No	No
Has a doctor ever told you that you have high cholesterol?	No	Yes
Has a doctor ever told you that you have high blood pressure?	No	Yes
In the last year, have you had a foot exam?	Yes	No
In the last year, have you had an eye exam?	Yes	No
In the last year, have you had a flu shot?	Yes	No
In the last year, have you had a dental exam?	Yes	Yes
In the last year, have you had a urine test for protein?	Yes	Yes

Table 8. Guest Self-Reported Health Information Pre-Program Implementation

5.0 Impact of DISCO Program

The DISCO program's goal is to empower individuals to manage their T2D diagnosis through providing them with the tools and resources needed to succeed. To measure the program's goals, the guests were surveyed on their diabetes knowledge understanding and confidence in managing the condition on session 1 and session 6 (the first and last session of the six-week program). The survey asks the participants to indicate on a scale of 1-5, to indicate their attitudes on what they know about diabetes from 12 statements, and on a scale of 1-10, to indicate their attitude on confidence levels of eight statements. Details of the pre- and post-program survey statements can be found in Appendix E and F, respectfully. The survey questions were asked, and responses were recorded by PT students after they checked the guests' vitals. As seen by Table 9, only Participant X attended the last program. Thus, we only have this participant's information on post-program understanding and confidence of diabetes knowledge. Images from the pilot offering can be seen in Appendix A.

5.1 Impact on Diabetes Knowledge

Figure 6 illustrates the results of the participant's understanding of diabetes knowledge on Session 1; From these data, it can be determined that there was not a high understanding of diabetes knowledge and in two of the 12 statements, the understanding was poor. Neither guest was educated on their diagnosis and joined this program because they were interested in learning more on their condition.



Figure 6. Participant Responses on Diabetes Knowledge Understanding Pre-Program

As mentioned earlier, Participant X was the only participant who completed both the preand post-test. There were some visible impacts made on Participant X's understanding of their condition, as can be seen in Figure 7. It is important to note that in two of the areas, diabetes knowledge decreased, meaning that after the program, there was a decrease in understanding of the condition. These areas were in understanding the role of exercise in diabetes care, which PT would have addressed, and coping with stress, which we did not include in the pilot offering.



Figure 7. Diabetes Knowledge Understanding Pre and Post Program

5.2 Impact on Confidence in Management

Figure 8 illustrates the self-reported results of the participant's confidence level in managing their diabetes condition on Session 1. These data show that one participant had more confidence in their management and control of diabetes than the other before the program. For three of the statements both participants have average or below average confidence; these statements are related to choosing appropriate foods to eat, exercising regularly, and knowing what to do when blood sugar level is not in control.



Figure 8. Participant Responses on Confidence in Diabetes Management Pre-Program

Figure 9 addresses the impact of the program on building confidence in managing the condition. It can be seen that confidence levels in five statements decreased, meaning that after completing this program, Participant X felt less confident in the following areas: controlling their diabetes, choosing appropriate foods to eat, following a meal plan when preparing or sharing food with non-diabetics, managing their stress and worry, and managing their condition on a regular basis. This could be because this individual expected to learn more about these topics and they were not as covered as much as the individual would have liked, which is why they gave these statements the low rankings. Or, perhaps participants in health education programs feel that they did not know as much as they thought they did and with learning new information, they rank their confidence level lower because they realized they have a lot more to learn. However, there was also an increase in three areas that Participant X had reported, with the biggest increase in having the confidence needed to exercise regularly. It can be determined that PT explained how to exercise and built confidence around regularly doing it however, they did not communicate clearly the reasoning for why it is important to exercise for the management of diabetes.



Figure 9. Diabetes Management Confidence Level Pre and Post Program

6.0 Conclusion

Diabetes, specifically T2D, continues to be a challenging health issue in public health from a socio-economic lens with multiple internal and external factors affecting the prevention and care of the diagnosis. The disparities existing in the U.S. greatly impact the diagnosis and care management for the condition. Specifically, this disease proves to be a major challenge for underserved populations that have minimal resources and lack of care access. Unlike other diseases, effective care management for T2D must focus on multiple lifestyle changes including physical exercise, nutrition, and medication management. Researchers, public health institutions, and non-profit organizations have all helped to further the conversation around the impact of racial disparities on diabetes diagnosis and care management, which are significant and affect developing research and evidence-based approaches. Because of all these factors, greater importance is being placed on a community-based, interprofessional program aimed at empowering and educating individuals impacted by T2D in Homewood, Pittsburgh.

Based on the background and assessment of the pilot offering of the DISCO Program discussed in this paper, it can be determined that the impact resulted in an increase in understanding and confidence of managing diabetes in many areas. However, there is still more work to be done around diabetes education and management in the Homewood and surrounding communities. By addressing the pilot offering's challenges and addressing the author's recommendations to improve the program, the DISCO program will be able to meet its goals of building support systems, increasing health literacy, and building community trust over time.

6.1 Challenges and Limitations

Several challenges were faced during the implementation and delivery of the DISCO program. The DISCO program's implementation at the CEC-Homewood was slow to begin due the COVID-19 pandemic, specifically in determining whether to offer the program in person or virtually. Additionally, it was difficult to recruit individuals to participate and some interested individuals were hesitant to meet in person. Due to this limitation, only two participants attended the sessions of the pilot program.

Student volunteers were enthusiastic to participate and were excited to begin leading activities in the DISCO program. However, more students than participants were recruited. This led to participants verbally reporting feelings of being uncomfortable because they felt they were being observed. This prevented them from being able to participate fully and discuss their condition. The DISCO program team recognized this challenge early on and adjusted the number of participants per session, which helped with participants feeling more comfortable.

The pilot program ran for six weeks on Mondays from 9:30-11 am. At most of the sessions, participants arrived late, and so the sessions would begin late and end after 11 am. Because of this, some of the student facilitators would rush through their materials or not cover everything they had planned for the session's activities. Because of the issue with timing, there was not enough time to accurately gather participant feedback for the material offered at the sessions and the facilitators did not have enough time to debrief after the session. The debrief time is critical to reflect on how the participants reacted to the activities, the questions that were asked, and to plan for the next session using the feedback received on the activities of that session. This greatly limited the facilitators' understanding of what needed to be changed for the next session and so, the program was not as individual-centric or dynamic as it could be.

6.2 Recommendations

For future program offerings, it is recommended for the program to be delivered in two parts, with four sessions each. The parts would be offered as follows: 1) general diabetes information and 2) specific information based on participants' questions and concerns. This twopart approach to delivering diabetes health education, will allow individuals who have been recently diagnosed or a caregiver who wants to learn general information from the first part. The second part will be better suited for individuals who have been living with diabetes and understands its complications; the second part's content can be more tailored to the individuals by addressing their specific concerns.

To recruit more participants and expand the program, relationships can be built with local organizations in the community. Through partnering with organizations that focus on addressing health and wellness, the DISCO program can grow and offer the best individual-centered experience while fostering relationships. Additionally, the partners are able to spread the word and recruit participants to join this program. Potential partners include but are not limited to the following:

- 1. Oasis Farm & Fishery
- 2. Black Urban Gardens
- 3. Sankofa Village Community Garden
- 4. Grow Pittsburgh
- 5. YMCA Homewood-Brushton
- 6. Pittsburgh Community Food Bank
- 7. Primary Care Health Services Inc. (Alma Illery Medical Center)

Additionally, to recruit for participants or to better spread the word about the program, more descriptive materials can be created. For instance, flyers can have images from the program's activities and a description of what participants can expect to learn during the sessions, as well as what they will receive from attending and testimonial quotes from previous participants, will lead to individuals being more likely to register. These materials can also be better distributed through placing copies of flyers in commonly visited areas or directly in mailboxes so there is more visibility. Participants of the program can also be asked how they heard about the program, which can serve as a guide for the DISCO team to use as targeted recruitment approaches.

Lastly, by regularly contacting the confirmed participants, the DISCO team is able to ensure the participants know the session dates. This will also open up the channels of communication and the participants know who to contact if they are unable to attend. It will also be important for all the disciplines involved to do follow-up checks or calls with the participants to sustain the relationship with the community and can help determine the long-term success of the program.

The impact measures seen in the pilot offering are rudimentary and cannot be used in a formal program analysis outside of benchmarking and trend spotting. With more participants in the program, additional data can be collected and sustainable improvements to the program can be established. The program continues to be offered with the same faculty facilitators being a part of the implementation of the program, with the most recent offering completed in March 2022.

Appendix A : Pilot Program Session Images



Nutrition student assisting participant in food label reading.

Physical Therapy student demonstrating how to use resistance bands to exercise.

Example of recipe from Nutrition food demonstration.

Nutrition students running a food demonstration while explaining how to use the Diabetes

Healthy Plate.

Physical Therapy student leading participants and Pitt students in warm-up activity.

Appendix B : DISCO Interest Form

DISCO Registration

Thank you for your interest in the DISCO (Diabetes Intervention and Self-Care Opportunities) Program at the Homewood CEC! This is a six-week program that is currently enrolling participants. Sessions will take place in the Wellness Pavilion at the Homewood CEC. This program is intended for participants who have been diagnosed with diabetes and are interested in learning more about managing their condition in a small group setting. We will contact you before the program starts to make sure we are able to meet your needs.

At this time, we hope to offer the program in-person following COVID-19 guidelines.

w umeganjoo@gmail.com (not shared) Switch account

* Required

What is your name? *

Your answer

What is your email address? *

Your answer

What is your phone number? *

Your answer

Tell us about your preferences. *

O | am only interested in the program if it is virtual.

O I am comfortable coming to an on-site program.

O Would be open to both virtual and in-person programming.

Please provide any additional comments, questions, or concerns.

Your answer

Submit

Clear form

3

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Appendix C : Pre-Program Questionnaire

Thank you for your interest in the Diabetes Self-Management Education at the Homewood CEC! This survey is designed to ask you a series of questions to help our team better understand your needs and tailor the program for your benefit.

The first set of questions will ask about your personal and household dietary habits, including where you get your food. This will help our team tailor information about nutrition to fit your needs.

- 1. Do you prepare the majority of the meals in your home? ____Yes ____No ____Others help, but contribution is equal
- 2. How often is food prepared in your apartment or home (as in, not at a restaurant or fast food)?
 - ____Never ____1-2 times per week _____ 3-4 times per week

____Most all days of the week _____Always

- 3. How many people have regular meals in your household? What are their ages?
- 4. How many times per week do you prepare breakfast at home? _____
- 5. How many times per week do you prepare lunch at home? ____
- 6. How many times per week do you prepare dinner at home? _____
- 7. What is your typical meal routine? Ex. how many meals/snacks eaten per day on average?
 - 8. Where do you get the foods you prepare at home? Select all that apply.
 - ____Convenience store/Dollar Store ____Farm Market ____Food Bank/Pantry
 - ___Grocery store (which stores? _____) ___Garden/Window box
 - 9. What food preparation equipment do you have available to you? (Check all)
 - ____Full size refrigerator/freezer ____Small refrigerator ____Separate freezer
 - _____2-4 burner stove _____Oven in stove ____Single burner _____Electric skillet
 - ____ Slow cooker/crock pot ____Microwave___Toaster oven _____Toaster
 - ____ Blender or food processor

10. Which meals are you most likely eat away from home?

- __Breakfast __Lunch (ex. senior/community center)
- ____Lunch (fast food/restaurant) ___Dinner/supper
- ___Snacks (on the way to/from somewhere)
- 11. What food allergies or intolerances do you have? Select all that apply.
 - __Eggs __Dairy __Wheat __Shellfish __Fish __Soy __Peanuts __Tree nuts __Gluten __Lactose __Other (specify ___) __None

12. What food and healthy eating topics are you interested in? (Check all that interest

you)

- ____Low-cost healthy foods ____Food storage/food safety ____Shopping
- ____Using kitchen tools
- ____ Eating for health (ex. diabetes, heart health, healthy weight, allergies)

____ Vegetarian or plant-based eating ___Learning how to read food labels

__Other (specify ___)

13. How often do you consume alcohol?

Participants are not required to disclose this information if they are not comfortable.

____ Never ____ Rarely (ex. on special occasions) ____ 1-3 times per week

____ More than 3 times per week ____ Daily ____ Prefer not to answer

14. When you consume alcohol, how much do you consume? Note: 1 serving = 4 oz. (1/2 cup) wine, 12 oz. (1.5 cup) regular or light beer, 1.5 oz. distilled liquor 80-100 proof (1 jigger)

Participants are not required to disclose this information if they are not comfortable.

____ None/I do not drink ____ 1-3 drinks ____ 4-6 drinks ____ 7 or more drinks

15. How often do you consume caffeine?

_____Never/rarely _____1-3 times per week _____More than 3 times per week _____Daily 16. When you consume caffeine, how many servings do you typically consume?

Note: 1 serving = 8 oz. (1 cup) of regular or diet soda, coffee, tea, or iced tea

____ None/I do not consume caffeine ____ 1-3 drinks ____4-6 drinks ____7 or more servings of caffeine

17. Average number of 8 oz glasses of water consumed per day: ____

18. What time do you usually eat your first meal or snack of the day? _____

This next set of questions asks about how secure your food supply is. Some of these questions are sensitive – do I have your permission to ask about this? If you're not sure or you prefer not to answer, that's okay. If we determine that you have food supply needs, we can work to find resources to help you.

19. Please select "often true", "sometimes true", "never true", "do not know", or "prefer not to answer" for the following statements.

		So	Ι	Pref	
	ften	metimes	ever	o not	er not to
	True	True	True	know	answer
The food that I/we bought just					
didn't last, and (I/we) didn't have money					
to get more.					
(I/we) could not afford to eat					
balanced meals.					

20. Please select "yes", "no", or "do not know" for the	following s	tatements.	
		No	Ι
	es		o not
			know
In the last 12 months, did you or other adults in your			
household ever cut the size of your meals/skip meals because			
there was not enough money for food?			
In the last 12 months, did you ever eat less than you felt			
you should because there was not enough money for food?			

In the last 12 months, were you ever hungry but did not eat because there was not enough money for food?

21. If you answered "yes" to any of the above statements, please describe how often this occurred. _____

This last set of questions asks about your personal diabetes history, including medications that you take. This will also help tailor the sessions to your needs. You will also have the opportunity to tell us anything you would like that we haven't already asked pertaining to your diabetes history and any specific questions or concerns you have.

22. How long have you had diabetes?

Less than one year 1-5 years 6-10 years Longer than 10 years Prefer not to answer

23. How do you check your blood sugar at home? If so, how often? What device do you use?

___Yes (____) ____No (____)

- 24. Have you ever participated in diabetes education?
 - ____ Yes, in a group environment ____ Yes, in one-on-one sessions ____No ____ I am not sure ____ Prefer not to answer
- **25.** What types of learning activities do you prefer? Please select all that apply. _____ Small group discussions/sharing information _____ Games
 - _____ Demonstrations (ex. recipes, testing blood sugar, using insulin)

 - Prefer not to answer
- 26. What medications do you take for your diabetes? Select all that apply.
 - ___Oral medications (ex. metiformin)
 - ____Non-insulin injectable medications (ex. Victoza, Ozempic, Trulicity)
 - ____Insulin (ex. Lantus, Basaglar, Novolog, Humalog)
 - ____I take medications, but am unsure what category they fit into
 - ____I do not take any medications for my diabetes ____Prefer not to answer
- 27. What questions or concerns do you have about the medications that you take?
- 28. What medications do you take for your diabetes? Select all that apply.

```
___Yes (____) ___Sometimes (____) ___No (____) ___Prefer not to answer (____)
```

29. What questions do you have about meal planning and nutrition in general?

- **30.** How often do you exercise?
 - ____5+ times per week ____3-4 times per week ____1-3 times per week
- ____I do not exercise regularly ____Prefer not to answer
- 31. Please describe what type of exercises you enjoy. _

32. Please use this section to tell the team anything else we should know about you and/or any questions that you may have. _____

DISCO: PERSONAL INFORMATION QUESTIONNAIRE Fall 2021

Name: _____

Age Range:

- 0 18-24 years old
- O 25-34 years old
- \circ 35-44 years old
- 0 45-54 years old
- 55-64 years old
- 65-74 years old
- 0 75 years or older

Address, City, State, Zip:

Phone Number:

Email Address: _____

Emergency Contact Person and Phone Number:

Insurance Plan: _____

Gender:

- 0 Male
- 0 Female
- Other _____
- Rather not identify

Which of the following best describes your race?

- White or Caucasian
- Black or African-American
- 0 Asian
- O Native Hawaiian or other Pacific Islander
- American Indian or Alaska Native
- Other (please describe)

What is the highest grade you completed in school? (Check one box)

1	2	2 3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17+
	Grade School					Н	igh S	Scho	ol		Col	lege		Post Grad			

Are you currently employed?

- 0 Yes
- O No
- 0 Retired

What type of Diabetes do you currently have?

- Type I
- Type II
- Gestational

When were you diagnosed with Diabetes? (What year?)

During the past year, have you participated in an educational program about Diabetes?

- 0 Yes
- O No

Who helps you the most in caring for your diabetes?

- Spouse
- Other family members
- Friends
- Paid helper
- O Doctor
- 0 Nurse
- Community health worker
- No one
- Other health care professional
- Case manager
- Other _____

How did you hear about the DISCO Program?

- Pitt CEC
- O SHRS Wellness Pavilion social media
- Family/friend
- Other _____

Health Status

Is there one particular doctor that you think of as your regular personal doctor?

- 0 Yes
- O No

If yes, how long has this person been your doctor?

- Less than 6 months
- O Between 6 months and 1 year
- \circ 1 to 2 years
- O 3 to 5 years
- More than 5 years

Are you currently receiving regular medical care for your diabetes?

- 0 Yes
- O No

Have you had a Hemoglobin A1c test in the past 6 months?

- 0 Yes
- O No

Are you currently a smoker?

- 0 Yes
- O No

Has a doctor ever told you that you have high cholesterol?

- O Yes
- O No

Has a doctor ever told you have high blood pressure?

- 0 Yes
- O No

In the last year, have you had:

A foot exam? ___Yes ___No An eye exam? ___Yes ___No A flu shot? ___Yes ___No A dental exam? ___Yes ___No A urine test for protein? ___Yes ___No

How would you rate your overall health?

- Excellent
- O Good
- 0 Fair
- O Poor

Health Behavior

How often have you been told to check your blood sugar?

How often did you follow that schedule for checking blood sugar during the past week?

- None of the time
- Some of the time
- A good bit of the time
- All of the time

What type of meal plan have you been told to follow to manage your diabetes?

- Small frequent meals
- Food Guide Pyramid
- Plate Method
- Counting Carbohydrates
- Five a day
- Other (please specify)

Thinking about your meal plan, how often did you follow this plan during the past week?

- None of the time
- Some of the time
- A good bit of time
- All of the time

During the past week, how often did you participate in regular exercise, and for how long did you exercise each time?

Number of times	
Length of time	
Type of exercise _	

What do you find to be the hardest part of living with diabetes?

DISCO: FIRST SESSION SURVEY Fall 2021

Name: ______

Circle one answer for each line:

Diabetes Knowledge

How do you rate your understanding of:	Poor		Good		Excellent
a) overall diabetes care	1	2	3	4	5
b) ways to cope with stress	1	2	3	4	5
c) meal plan for blood sugar control	1	2	3	4	5
d) the role of exercise in diabetes care	1	2	3	4	5
e) medications you are taking	1	2	3	4	5
 f) how to use the results of blood sugar monitoring 	1	2	3	4	5
 g) how diet, physical activity, and medicines affect blood sugar levels 	1	2	3	4	5
h) prevention and treatment of high blood sugar	1	2	3	4	5
i) prevention and treatment of low blood sugar	1	2	3	4	5
j) prevention of long-term complications of diabetes	1	2	3	4	5
k) taking care of your feet	1	2	3	4	5
l) benefits of improving blood sugar control	1	2	3	4	5

How confident are you that you can currently...?

1. Do all the things necessary to manage your condition on a regular basis?

Not at all	1	2	3	4	5	6	7	8	9	10	Completely
connucin											connuent

				-					8.1.				
		Not at all confident	1	2	3	4	5	6	7	8	9	10	Completely confident
3.	Follo have	ow your meal diabetes?	plan	when	you h	ave to	prepa	re or s	share f	'ood w	rith oth	ner peo	ple who do not
		Not at all confident	1	2	3	4	5	6	7	8	9	10	Completely confident
4.	Choo	ose the approp	priate	e food	s to ea	t when	ı you a	are hu	ngry (i	for ex	ample	, snack	s)?
		Not at all confident	1	2	3	4	5	6	7	8	9	10	Completely confident
5.	Exer	cise at least 1	5 to 3	80 min	nutes a	day, 4	1 to 5 (days o	f the w	eek?			
		Not at all confident	1	2	3	4	5	6	7	8	9	10	Completely confident
6.	Kno	w what to do	when	your	blood	sugar	level	goes h	igher (or low	er tha	n it sho	uld be?
		Not at all confident	1	2	3	4	5	6	7	8	9	10	Completely confident
7.	Judg	ge when the ch	nange	es in y	our he	alth m	nean y	ou sha	ould vis	sit the	docto	r?	
		Not at all confident	1	2	3	4	5	6	7	8	9	10	Completely confident
8.	Cont	trol your diab	etes s	so tha	t it doo	es not i	interf	ere wi	th the t	things	you w	ant to	do?
		Not at all confident	1	2	3	4	5	6	7	8	9	10	Completely confident

2. Keep stress and worry from interfering with the things you want to do?

Appendix F : Post-Program Session 6 Questionnaire

DISCO: LAST SESSION SURVEY Fall 2021

Name:												
Diabete	s Knowle	dge										
Circle one answer for each line:												
How do you rate your understanding of:	Poor		Good		Excellent							
a) overall diabetes care	1	2	3	4	5							
b) ways to cope with stress	1	2	3	4	5							
c) meal plan for blood sugar control	1	2	3	4	5							
d) the role of exercise in diabetes care	1	2	3	4	5							
e) medications you are taking	1	2	3	4	5							
 f) how to use the results of blood sugar monitoring 	1	2	3	4	5							
g) how diet, physical activity, and medicines affect blood sugar levels	1	2	3	4	5							
h) prevention and treatment of high blood sugar	1	2	3	4	5							
i) prevention and treatment of low blood sugar	1	2	3	4	5							
 j) prevention of long-term complications of diabetes 	1	2	3	4	5							
k) taking care of your feet	1	2	3	4	5							
l) benefits of improving blood sugar control	1	2	3	4	5							

How confident are you that you can currently...

1. Do all the things necessary to manage your condition on a regular basis?

Not at all confident	1	2	3	4	5	6	7	8	9	10	Completely confident
----------------------	---	---	---	---	---	---	---	---	---	----	----------------------

			- 5						8.1.				
		Not at all confident	1	2	3	4	5	6	7	8	9	10	Completely confident
3.	Follo have	ow your meal diabetes?	plan	when	you h	ave to	prepa	re or :	share f	'ood w	rith oth	ner peo	ple who do not
		Not at all confident	1	2	3	4	5	6	7	8	9	10	Completely confident
4.	Choo	ose the approp	priate	e food	s to ea	t whe	n you a	are hu	ngry (i	for ex	ample	, snack	s)?
		Not at all confident	1	2	3	4	5	6	7	8	9	10	Completely confident
5.	Exer	cise at least 1	5 to 3	30 mir	nutes a	day, 4	4 to 5 d	days o	f the w	eek?			
		Not at all confident	1	2	3	4	5	6	7	8	9	10	Completely confident
6.	Knov	w what to do	when	your	blood	sugar	level g	goes h	igher o	or low	er tha	n it sho	uld be?
		Not at all confident	1	2	3	4	5	6	7	8	9	10	Completely confident
7.	Judg	ge when the ch	nange	es in y	our he	alth n	nean y	ou sha	ould vis	sit the	docto	r?	
		Not at all confident	1	2	3	4	5	6	7	8	9	10	Completely confident
8.	Cont	trol your diab	etes s	so tha	t it doo	es not	interfe	ere wi	th the t	things	you w	ant to	do?
		Not at all confident	1	2	3	4	5	6	7	8	9	10	Completely confident

2. Keep stress and worry from interfering with the things you want to do?

Out of the six sessions, how many did you attend?

- o 1
- 0 1-2
- o 1-3
- 0 1-4
- 0 1-5
- \circ 1-6 (all of them!)

What was your favorite session? (can select more than one)

- Welcome! (Session 1)
- Introduction to Nutrition (Session 2)
- Nutrition Continued (Session 3)
- Medications and Adherence (Session 4)
- Health Maintenance (Session 5)
- Summary! (Session 6)

Did the DISCO Program motivate you to make changes in your eating habits, exercising, and/or taking medication?

- 0 Yes
- O No

With the sessions you've attended, do you have the skills necessary to manage your diabetes?

- 0 Yes
- O No

If no, which skills do you feel you are lacking?

- Disease knowledge
- Treatment knowledge
- Physical challenges (unable to take care of self)
- 0 Other

What challenges are keeping you from following what you're learning at the DISCO Program?

Rate your experience with Pitt Nutrition:

- O Good
- Neither good nor bad
- O Bad

Comments/suggestions for Pitt Nutrition:

Rate your experience with Pitt Nutrition:

- O Good
- Neither good nor bad
- O Bad

Comments/suggestions for Pitt Nutrition:

Rate your experience with Pitt Nutrition:

- O Good
- Neither good nor bad
- O Bad

Comments/suggestions for Pitt Nutrition:

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