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"Life-A-Betes": Improving Self-Management of Diabetes for Participants in the Adult Day Healthcare Setting Through Education and Support

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Diabetes is a major health issue for people in the United States. In 2015, an estimated 23 million Americans were diagnosed with diabetes, and it was the seventh leading cause of death. Additionally, among the approximately 1.5 million newly diagnosed cases of diabetes in 2015, more than half were adults aged 45 to 64 years old. (Centers for Disease Control and Prevention, CDC, 2017). The financial burden to the healthcare system is enormous—the cost of managing diabetes in California’s Contra Costa County alone was estimated to be $388,891,043 in 2010. (Brown, Gonzalez, & Dhaul, 2015). According to Campbell & Martin (2009), the cost for treating a patient with diabetes is five times higher than for a patient without diabetes.

The adult day healthcare center (ADHC) is a non-residential facility that provides a place for elderly and adult participants with disabilities to receive social interaction, take part in therapeutic activities, receive healthcare, and enjoy meals and snacks. The ADHC embraces a multidisciplinary team approach in caring for the participants. The team includes nurses, social workers, healthcare aids, physical and speech therapists, a psychologist, and a nutritionist, who all work together in order to assist the participants in achieving their optimal health status, functioning, and quality of life.

Approximately 39% of the participants at the ADHC have diabetes, and 14% of these diabetic participants have difficulty in managing their diabetes as evidenced by consistently high blood glucose (BG) and A1c results. Working with the multi-disciplinary team at the ADHC, possible causes and barriers that have prevented these participants from achieving good glycemic control were identified. Working with the participants in addition to the team was essential in developing the Life-A-Betes education and support program.

Abstract

The objective of this CNL Internship Project was to perform a systems analysis in order to determine the causes for unmanaged diabetes, as evidenced by very high blood glucose (BG) readings in the diabetic population at the Adult Day Healthcare Center (ADHC). The goal was to create an appropriate and cost-effective intervention to improve participant management of diabetes, and to reduce participant BG levels. Working with the multi-disciplinary team at the ADHC, and incorporating data obtained from staff and participant surveys and interviews, it was determined the most appropriate intervention would be an education and support group aimed at assisting participants better manage diabetes. The group was named “Life-A-Betes” by a dedicated participant; reflecting the desire of all of the participants to make healthy life choices to manage their diabetes. Participant BG levels were recorded prior to the start of the Life-A-Betes project; the highest BG average in the unmanaged diabetic participant was 192 mg/dL After 3 months of Life-A-Betes classes, the highest BG average was 184 mg/dL These positive results warrant further investigation into the effectiveness of a weekly education and support group to assist participants manage diabetes.

Clinical Leadership Theme

According to the American Association of Colleges of Nursing (AACN), the Clinical Nurse Leader (CNL) theme of Clinical Outcomes Management describes the CNL as clinician, outcomes manager, and educator. These roles of the CNL are focused on “emphasizing health promotion and risk reduction, utilizing data to change practice and improve outcomes, and teaching/learning principles and strategies” (AACN, 2007, pgs. 37-38).

Transformational leadership theory helped to guide the design and implementation of this project as it provided the framework for creating a supportive environment where shared

responsibility, moral values, and inspired motivation helped to achieve a meaningful healthcare intervention. According to Doody & Doody, (2012), today's organizations require leadership that is adaptive and flexible. Additionally, motivating participants to make some lifestyle changes, such as diet and exercise, was a major component of the project. Huynh, Sweeny, & Miller, (2018), found the transformational leadership style to be very effective in motivating patients.

Statement of Problem

Diabetes is a major health issue within the population of participants at the ADHC, with14% of the diabetic participants presenting with a history of consistently high BG readings—with some reaching into an alarming 400 range. When diabetes is not controlled, and BG levels are consistently high, serious complications can result. It is well-documented in healthcare literature and research that uncontrolled diabetes results in serious and costly complications. Eye and kidney damage, cardiovascular disease, neuropathy, foot problems are but a few of the complications that can occur from uncontrolled diabetes.

The main causes of unmanaged diabetes at the ADHC were determined by conducting staff and participant surveys combined with individual interviews. The main causes of poor and unmanaged diabetes were identified as: lack of knowledge of the disease process, medication management, poor diet, home environment, financial issues, and ability to manage stress.

Project Overview

Based upon the findings of very high BG readings in some diabetic participants at the ADHC, the goal of the project was to determine the causes of unmanaged diabetes, and then to implement an intervention/s in order to assist these participants to better manage their diabetes, thereby decreasing their risk for complications, and ultimately increasing their overall health

status. The focus of the project was on the participants with unmanaged diabetes; however, the project was designed with all diabetic participants in mind.

The main objectives of the project were to implement an intervention that was not only successful in assisting participants manage their diabetes, but also cost-effective, easily-assimilated into the milieu and staff workload, and sustainable. Working with the multi-disciplinary team at the ADHC and using systems analysis to determine possible causes of unmanaged diabetes (as outlined in the Statement of Problem above) provided the basis for the Life-A-Betes education and support group intervention.

The global aim of the project is to assist the participants at the ADHC better manage their diabetes, which will result in decreased risk for complications and improved overall state of health. The specific aim of the project is to decrease BG readings among all the unmanaged diabetic participants at the ADHC to within normal ranges within 3 months. If the specific aim is reached, then the participants will have better managed their diabetes, and thusly reduced their chance for complications from the disease.

Methodology

Rationale

The initial data that supported the need for the education and support of diabetic participants was the consistently high FSBG readings of some of the diabetic participants at the ADHC. Participants have weekly or daily FSBG checks, depending on the MD order, and approximately 5 (or 14%) of the 28 diabetic participants had consistently high BG readings which prompted the investigation as to why this was happening. Participant charts were reviewed as a source of data for the trend in FSBG readings. When available, A1c results and blood pressure were also noted.

Informal interviews of the nurses were conducted to determine what they felt the issues might be for the participants' poor self-management of diabetes. The participants were also interviewed about what their challenges were surrounding self-management of diabetes. Open-ended questions allowed the individuals to speak on their opinions of the management of diabetes. These responses were recorded and used to create a short staff survey (Appendix D) to determine some possible reasons for unmanaged diabetes. Casual visual observations of the milieu at meal and snack time were documented and provided some valuable insight into attitudes surrounding food, both from participants and staff. A fishbone diagram was useful in providing a visualization of possible areas and causes for poor self-management of diabetes. (Appendix A).

A Strength, Weakness, Opportunity, and Threat (SWOT) analysis was performed for the Life-A-Betes project (Appendix C). The strengths included: the healthcare team's desire to find a solution to decrease the participant's high BG levels, the participant's desire to be healthy, and the low cost of the education and support intervention. The opportunities included an increased overall health of diabetic participants, less incidence of complications related to unmanaged diabetes, (which results in less healthcare costs.) The potential weaknesses of the project were related to the potential lack of communication between multiple healthcare providers, which could impede collaboration. The threats were associated with the participant's home environment; the participants might not have proper support, and/or control or access to healthy meals at home. Another potential threat was the participant's lack of financial resources in order to obtain diabetic medications and/or supplies, and healthy food.

Cost Analysis

The initial cost of implementing the education and support group at the ADHC was nominal as the RN-CNL student volunteered the time required to prepare for and facilitate the weekly group meetings. The only out-of-pocket expense was the cost of photocopying the handouts, estimated at $5 per week. To continue the weekly Life-A-Betes program at the ADHC, it would cost an estimated $420 per month. The cost includes: a registered nurse (RN) or health educator to facilitate the weekly group for 2 hours each week (1 hour preparation time and 1 hour class time) at an estimated hourly rate of $50 equals $400 per month; and photocopying class materials/handouts at an estimated $5 per week equals $20 per month.

The potential savings to the ADHC is reflected in reducing missed attendance due to diabetes-related complications. It was estimated that diabetes-related complications are the reason for an estimated 5 to 10 missed days per month. It costs the ADHC an estimated $100 per missed day of attendance. At a cost of $100 per day for missed attendance, this represents a potential monthly savings of $1000. The diabetes-related complications reported as reasons for absence ranged from bothersome (generally not feeling well) to serious (severe hypoglycemia that required hospitalization.)

In summary:

Monthly cost of Life-A-Betes = $420.

Potential monthly savings = <$1000.>

Total Potential monthly cost savings = $580.

Change Theory

Lippitt's change theory was the framework used to create the diabetes education and support program. Lippitt's change theory consists of 4 steps: assessment, planning, implementation, and evaluation. (Mitchell, 2013). These are familiar steps, as they are akin to

the nursing process, and appear to be a natural fit with the implementation of a diabetes education and support program at the ADHC. The assessment phase was essential, as the reasons for unmanaged diabetes were necessary to understand so that an appropriate intervention could be implemented. The planning phase consisted of creating a structure for the project and involved research, and gathering data. The implementation of the actual Life-A-Betes groups consisted of creating a lesson plan, facilitating the group, and evaluating the success of the group. The evaluation phase included weekly evaluations of the group meetings, and an overall evaluation of the entire program. The weekly evaluations were essential is adjusting the project as necessary. The final evaluation is particularly important as the results will be able to show whether or not the intervention was effective, and what changes will need to be made in order to improve, change, or reject the project.

Data Source/Literature Review

The literature reviewed for the implementation of this project was focused on the prevalence of diabetes in the United States, the complications caused by uncontrolled diabetes, the effectiveness of diabetes education and support programs, and the financial burden for diabetic patients, and the cost to the healthcare system. A large focus of the literature review was to research if education and support of diabetics could mitigate some of the risks of diabetes, and in the best case scenario, provide the diabetic patient with better health, decreased risk for diabetic complications, and a better quality of life.

Huang, Laiteerapong, Liu, John, Moffet, & Karter (2014) investigated the effects of diabetes on the older adult population for the purposes of instituting evidence-based clinical practice recommendations, identifying research priorities, allocating resources, and instituting healthcare policies. As the aging of the population continues and the prevalence of diabetes

increases, reducing complications from diabetes is of great importance. This cohort study provided information on how diabetes affects the older adult and how this information can be utilized to guide and develop best practices and healthcare policy at the ADHC.

Kangovi, Mitra, Grande, Hairong, Smith, & Long (2017), studied how community healthcare workers (CHWs) could affect improvement in the low-income patient with multiple chronic diseases. This single-blind randomized clinical study yielded results that showed continuous support from CHWs had a positive effect on patient outcomes (greater than goal-setting alone) and led to improvements in the patient’s chronic disease management. This study was helpful as our participant population fits the demographic of the study, and the goal of the project was to improve participant management of diabetes through education and support; the continuous support from a CHW was analogous to the continuous weekly support provided by the Life-A-Betes group.

Landman, van Hateren, Kleefstra, Groenier, Gans, & Bilo, (2010), utilized a retrospective study design to study the impact of diabetes on the health related quality of life (HRQOL) and found that low HRQOL was associated with an increase in mortality among elderly (as well as young) type 2 diabetic patients. They concluded that HRQOL instruments and/or measures would be useful to study further due to this correlation. Part of the global aim of the Life-A-Betes project was to achieve increased overall health for the participants due to management of diabetes. Moving forward, specifically measuring the HRQOL will be incorporated with the measurements of other data, such as BG levels.

Powers, Bardsley, Cypress, Duker, Funnell, Hess-Fischi, Maryniuk, Siminerio, & Vivian, (2015), provided guidelines and framework for developing a diabetes self-management education and support (DSME/S) program and working through individual challenges of self-

management of diabetes, such as health literacy, cultural and individual beliefs, and family support. These are areas that were identified as potential reasons for participant’s difficulties in managing their diabetes. The American Diabetes Association (ADA) recommends that all individuals diagnosed with diabetes have DSME/S at the time of diagnosis, and as needed thereafter. This recommendation can be modified to suit the ADHC setting by creating protocol that all diabetic participants be offered support and education.

Timeline

Assessment of the ADHC microsystem began 1/23/2018 and was completed 2/6/2018. The assessments included direct observation of the milieu, (staff and participant interactions), data collection, and verbal interviews with the diabetic participants. Data collection included current and historical BG readings taken at the ADHC, and data on A1c, blood pressure, weight, cholesterol, and other co-morbidities were also documented when available, (i.e., not all participants had current A1c results). A short written survey was administered to staff to solicit their ideas and opinions about what they considered to be reasons for un-managed diabetes. The participants were interviewed regarding what issues and difficulties they have experienced/are experiencing that could be contributing to unmanaged diabetes.

The planning phase occurred from 2/7/2018 through 2/16/18 and consisted of online research on diabetes, (e.g. number of people affected, risk factors, complications, and education programs), and attending a conference given by the ADA on DSME/S programs. Planning also included creating a schedule for the class topics, and gathering and obtaining appropriate information to hand out to participants. Meetings with the multi-disciplinary staff members were also conducted to incorporate ideas and input from staff, and to keep staff in the loop with the progress and plan for the project.

The implementation phase began 2/20/2018, and will continue through 4/21/2018. Implementation of the diabetes education and support group is a dynamic process and will mainly be comprised of group sessions with a focused topic, and a planned activity. Input from staff and participants will continue to be encouraged and incorporated where appropriate.

The evaluation phase is the final phase of the project, and is set to begin on 4/23/2018 and last through 5/7/2018. It will include data collection for comparison between beginning data, (such as BG readings, A1c, weight, etc.), and results after the interviews of participants and staff, and administration of another short staff and participant survey, which will help to determine if the education and support approach was successful, and what changes might be implemented for the program to continue. (For Timeline, see Appendix B).

Expected Results

The expected results would be that the 14% of participants with unmanaged diabetes at the ADHC will have gained knowledge and skills that will help them to improve their ability to manage their diabetes, and thusly their health. Additionally, it is expected that the participants with controlled diabetes will have also gained knowledge and skills to optimize their self-management of diabetes.

The physical data collected in the beginning of the project, (BG, A1c, weight, blood pressure), will be collected again at the end of the project and compared. If there is improvement in management of diabetes, it is expected that the BG and A1c readings would improve. It is anticipated that some additional benefits of diabetes education and support will be that participant’s weight, cholesterol levels, and blood pressure will also be improved. Another important and valuable result that is expected is that the participants will have increased confidence in their ability to self-manage their diabetes.

By implementing the education and support group for participants at the ADHC, it is anticipated that better self-management of diabetes will be achieved by the participants. Additionally, it is hypothesized that better overall health status of the participants will be attained as a result of better self-management of diabetes. It is expected that this approach will be easily adopted at the ADHC as the cost to facilitate a support group are nominal, and the benefits are expected to reach beyond direct health status of participants. By better managing diabetes, the risks for complications, and associated healthcare costs, will be decreased.

Nursing Relevance

According to the CDC (2017), there were 23.1 million diagnosed cases of diabetes and 7.2 million undiagnosed cases of diabetes in the United States in 2015. People with diabetes are at greater risk for complications such as major cardiovascular disease and stroke in addition to complications occurring due to diabetes. Not only is the cost to people's health great, the estimated cost to the healthcare system in 2012 was $245 billion. (CDC, 2017). It follows that implementing measures to help manage complications from diabetes would be of utmost importance. Ultimately, prevention of diabetes is the goal, and education of the population will be key.

If a diabetic patient is well-managed, then the risk for complications will be decreased. By empowering patients with education, skills, and support to manage diabetes, it is believed that will result in decreased healthcare costs. Additionally, education and support is a cost-effective intervention and has the potential for translating into programs to help manage other chronic diseases that greatly affect our population today, such as cardiovascular disease. Finally, this project emulates the focus today's healthcare policy on prevention of disease.

Summary Report

The data that indicated a need for an intervention was the participant’s BG levels. In 2017, the unmanaged participants were presenting with BG levels reaching into the 200-450 mg/dL range, with some instances even greater than 450 mg/dL The preliminary data in February, 2018, showed the highest unmanaged participant’s BG average was 192 mg/dL (Pre-Intervention Data, Appendix E). Conducting preliminary staff and participant surveys and interviews helped to determine causes for these high BG levels and the participant’s inability to manage their diabetes. These factors included: inadequate knowledge about the disease process of diabetes, lack of support in home environment, difficulty managing medication regimes, financial difficulties, poor diet, and lack of exercise. Providing the participants with education about diabetes and individualized and group support around the difficulties of managing diabetes was determined by the multi-disciplinary team at the ADHC to be a meaningful and cost-effective intervention.

A change from the original prospectus was to narrow the scope of the project. The initial project aimed to include and compare measurements of BG, A1c, blood pressure, and weight. However, not all of the participants were compliant on getting regular A1c blood tests, therefore these results could not be compared within the short time of implementation of the project. (Having participants become compliant with regular A1c testing is an aim for future Life-A-Betes groups.) Blood pressure and weight management are addressed within the context of discussing self-management of diabetes and a healthy lifestyle, but they are each subjects that require special focus. Keeping the scope of the project focused on management of diabetes in order to assist the participants assimilate the information, ask questions, and become involved in management of their diabetes seemed most appropriate.

The structure of Life-A-Betes was a weekly group meeting for the diabetic participants at the ADHC, and was facilitated by the RN MSN-CNL student. Each meeting was held on a Tuesday at 11:00am, and had a specific focus; the first group meeting began with an overview of diabetes, and the importance of a good diet. Subsequent group meeting topics were built upon the previous material, as well as feedback from participants on what they were interested in learning. If participants had questions or needed more information on a particular topic, that material was incorporated into the following group meeting. A schedule that outlined the group topic, activity, and goal was provided to the participants at every meeting. (Life-A-Betes Schedule, Appendix F). All of the topics covered during the project are listed in Appendix G.

Written materials helped to reinforce the topics covered during the Life-A-Betes group, and were provided to the participants at every meeting. An example of a typical handout is the ADA Shopping List (Appendix H). Videos produced by reputable healthcare organizations, (such as the ADA's short video on the "plate method"), were used to reinforce more complex material, and were extremely well-received by the participants. In order to encourage participants to exercise, short and simple exercises that could be performed while sitting were included at the end of each group. The most popular chair exercises were the chair dances, which all of the participants enjoyed immensely.

Due to the dynamic nature of the project, small adjustments to the weekly group sessions were constantly being made. For example, the first Life-A-Betes group meeting was held in a small room in the back of the ADHC with four participants in attendance. The following week, the meeting was held in the large physical therapy room, and 6 participants attended. The larger, more accessible room allowed for more space, and attracted more participants to the group. Each week new questions would arise, and would help to guide the next week's group. In this

way, the participants guided the learning process. Audio/visual aids were incorporated as the project progressed, (when it was discovered that the participants engaged much more with the material when videos were included.)

Evaluation of the project occurred after 3 months of Life-A-Betes support group sessions. Interviews of staff and participants were used to assess the effectiveness of the project, and data was collected on post-intervention BG readings. The last full month of the project was April, 2018. (Post-Intervention Data, Appendix J). Beyond the encouraging results of lowered BG readings after attending the Life-A-Betes group classes, some important additional positive results were reported by the participants: increased self-confidence, a new-found positive attitude, and renewed hope that they had control in creating positive health outcomes and managing their diabetes. Participants also reported feeling a sense of overall empowerment in managing their health as a result of Life-A-Betes. Unexpectedly, the Life-A-Betes group attracted non-diabetic participants who were interested in preventing diabetes. These participants were welcomed into the group, and they added their unique perspective and also their support to their peers.

Due to the initial success of the Life-A-Betes group, including interest from the participants, a proposal to the ADHC to continue with the weekly group will be created using this project as an example of a low-cost healthcare intervention that provides results as well as participant enjoyment.

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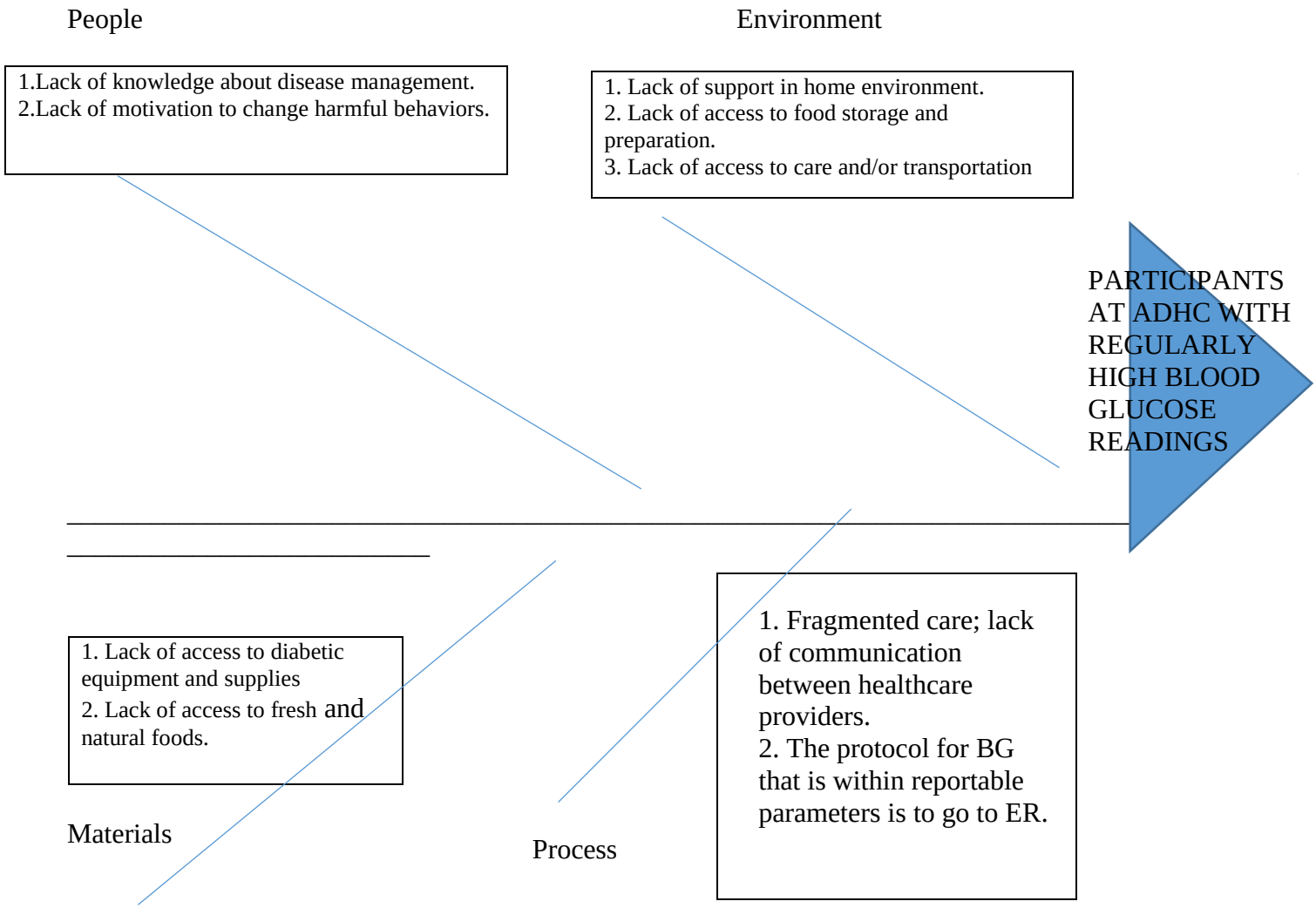
APPENDIX A
Fishbone Diagram



APPENDIX B
TIMELINE
For implementation of Life-A-Betes

STAGE OF PROJECT	PROJECT START: 1/23/2018	2/6/18	2/20/18	3/6/18	3/20/18	4/3/18	4/17/18	5/1/18	5/15/18
Assessment									
Planning									
Implementation									
Evaluation									

Assessment Stage:

This stage included observations, data collection, and staff and participant surveys. The persons involved in this stage were the primary stakeholders*.

Planning Stage:

This stage included performing research online and in-person, communicating with the multi-disciplinary team, and creating a schedule/lesson plan for the group sessions. This stage primarily involved the RN-CNL student, but did include all of the primary stakeholders*.

Implementation:

This stage marks the beginning of the group sessions with the participants. The RN-CNL student facilitated the group, but continued to communicate with the primary stakeholders*.

Evaluation:

This marks the end of the group sessions with participants, and the beginning of evaluation of data and surveys and interviews with primary stakeholders * to determine if the program was successful in meeting the aim of the project.

***PRIMARY STAKEHOLDERS**: RN-CNL student, preceptor, participants, nurses, social workers, nutritionist, and psychologist at ADHC.

APPENDIX C
SWOT ANALYSIS
“Life-A-Betes”

S= STRENGTHS: 1. Participants’ desire to be healthy 2. Healthcare team’s desire to find a solution to help participants manage their diabetes 3. low cost of intervention	W=WEAKNESSES: 1. Potential lack of communication between the multiple healthcare providers which could impede collaboration
O= OPPORTUNITIES: 1. Increased overall health for diabetic participants 2. Decrease of complications related to unmanaged diabetes 3. Decrease of healthcare costs related to unmanaged diabetes	T = THREATS: 1. Lack up support in home environment 2. Lack of financial resources for participants to obtain healthy food, diabetic supplies, etc.

A Strength, Weakness, Opportunity, and Threat (SWOT) analysis was performed for the Life-A-Betes project (Appendix C). The strengths included: the healthcare team’s desire to find a solution to decrease the participant’s high BG levels, the participant’s desire to be healthy, and the low cost of the education and support intervention. The opportunities included an increased overall health of diabetic participants, and less incidence of complications related to unmanaged diabetes. The potential weaknesses of the project were related to lack of communication between multiple healthcare providers, which could threaten collaboration, and the threats were associated to the participant’s home environment; where the participants might not have proper support, and/or control over their meals.

APPENDIX D
PRELIMINARY STAFF SURVEY
Potential Causes of Unmanaged Diabetes at the Adult Day Healthcare Center (ADHC)

POTENTIAL CAUSES of poor management of diabetes:		1= not very likely	2= somewhat likely	3= neutral	4= likely	5= very likely
DIET						
MEDICATION MANAGEMENT						
KNOWLEDGE						
FAMILY/HOME ENVIORNMENT						
STRESS MANAGEMENT						
FINANCIAL ISSUES						
MOTIVATION						
COGNITIVE ABILITY						
OTHER:						

APPENDIX E

PRE-INTERVENTION DATA

AVERAGE BG READINGS and BP FOR UNMANAGED PARTICIPANTS AT ADHC

FEBRUARY 2018

PARTICIPANT 1:	192 BG	132/52 BP
PARTICIPANT 2:	183 BG	150/84 BP
PARTICIPANT 3:	139 BG	148/72 BP
PARTICIPANT 4:	191 BG	155/71 BP

APPENDIX F
LIFE-A-BETES CLASS SCHEDULE

Life-A-Betes

By: Deirdre Martinez, RN

Tuesday, April 3, 2018

TOPIC

Overview of Diabetes
Complications from Diabetes
A1c test: what does it mean?

ACTIVITIES

Chair Dances:
"Cha Cha"
"Stop in the Name of Love"

GOAL

Obtain your latest A1c result from your doctor.
(If you haven't had an A1c test in the last 3 months, make an appointment to have it done.)

Next Meeting: Tuesday, April 10, 2018

APPENDIX G

TOPICS COVERED DURING LIFE-A-BETES GROUP MEETINGS:

OVERVIEW OF DIABETES
SIGNS AND SYMPTOMS OF HYPO- AND HYPER-GLYCEMIA
COMPLICATIONS OF DIABETES
A1C TEST
BENEFITS OF PHYSICAL ACTIVITY
GLUCOSE MONITORING
FOOT CARE
STRESS MANAGEMENT
HEALTHY FOOD CHOICES
GROCERY SHOPPING TIPS
READING FOOD LABELS
CARBOHYDRATES

APPENDIX H
SAMPLE HANDOUT

Shopping liSt

Use the list below as a guide on your next trip to the grocery store.

(Depending on your preferences and the amount of people you are feeding, you may not need all of the items on this list.)

RefRigeRatoR

- ☐ Fruit (a few of your favorites)
- ☐ Vegetables (a few of your favorites – focus on non-starchy vegetables) ☐ Skim, 1% low-fat milk, or unsweetened soy milk
- ☐ Non-fat or low-fat yogurt
- ☐ Eggs or egg substitute
- ☐ Cottage cheese
- ☐ Reduced-fat cheese
- ☐ Fresh meat, poultry or fish that you’ll use in the next few days
- ☐ Trans-free margarine or margarine with plant sterols or stanols

_____
_____
_____
_____
_____

fReezeR

- ☐ Frozen fruit
- ☐ Frozen vegetables
- ☐ Frozen fish fillets or shellfish
- ☐ Frozen chicken breast (boneless, skinless)
- ☐ Frozen meals (lower-sodium, lean options for days when time is tight)

_____
_____
_____

Spice cabinet

- ☐ Balsamic vinegar or other vinegars that you cook with (white wine, rice, or cider vinegar)

- ☐ Pepper
- ☐ Salt-free spices—your favorites
- ☐ Salt-free dried herb or spice blends ☐ Cooking sprays

- ☐ Vegetable oil
- ☐ Olive oil

pantRy

- ☐ Canned vegetables
- ☐ Canned fruit (canned in juice)
- ☐ Canned beans (low-sodium if available)
- ☐ Fat-free refried beans
- ☐ Canned tuna or salmon
- ☐ Instant oatmeal or quick oats
- ☐ Whole grain cereal (unsweetened)
- ☐ Brown rice or other whole grains (for example, quinoa, bulgur, or whole

grain barley)

- ☐ Pasta (try whole wheat)
- ☐ 100% whole wheat bread or pita bread ☐ Dried fruit
- ☐ Unsalted nuts
- ☐ Peanut butter or another nut butter ☐ Seeds (sunflower, flax)
- ☐ Popcorn (light, microwave)
- ☐ Potatoes (white or sweet)
- ☐ Spaghetti sauce

Visit **diabetes.org/quickmealideas** or call **1-800-DIABETES** for more information.

APPENDIX J

POST-INTERVENTION DATA

AVERAGE BG READINGS and BP FOR UNMANAGED PARTICIPANTS AT ADHC

APRIL 2018

PARTICIPANT 1:	184 BG	128/56 BP
PARTICIPANT 2:	149 BG	152/93 BP
PARTICIPANT 3:	167 BG	120/74 BP
PARTICIPANT 4:	107 BG	141/93 BP