DIABETIC MANAGEMENT WITH GLP1-RA OZEMPIC AND DIABETIC EDUCATION

A Scholarly Project

Submitted to the

Faculty of Liberty University

In partial fulfillment of

The requirements for the degree

Of Doctor of Nursing Practice

By

Katrina Sivo-Souza

Liberty University

Lynchburg, VA

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Scholarly Project Chair Approval:

Debbie Maddox RN, DNP, CNS-C, FNP-C

Date 1/26/24

ABSTRACT

A condition with observed poor management by most who possess a diagnosis, diabetes mellitus remains the seventh leading cause of death within the country. This diagnosis can and often does lead to severe complications, creating implications for not only the patient but also families, caregivers, and the community. Most diabetic patients possess a diagnosis of type 2 diabetes mellitus. The healthcare industry continues to implement improvement with diabetic management and complications resulting from diabetes. Research suggests that the standard of care for patients with diabetes begins with lifestyle modification to improve glycemic control. New medications, such as Ozempic (semaglutide), have also been influential in diabetic management. Therefore, this scholarly project intended to study the two methods of medication management with GLP1-RA Ozempic and diabetic educational information with the hopes of improved glycemic control, improved weight, and improved comprehension of lifestyle management of the diagnosis. Patients were tracked for a period of 12 weeks, assessing pre- and post-study data. The data collected included A1C, weight in pounds, body mass index (BMI), and self care knowledge via a validated questionnaire. Participants were to be on the medication Ozempic (semaglutide) and receive 12 weeks of educational emails. Each participant received one email weekly. This scholarly project proved to be statistically significant. Post study results reveal P values of 0.220 for BMI, 0.0310 for weight, 0.05 for A1C and 0.0001 for Self Care Inventory-Revised. These results support the pairing of GLP1_RA Ozempic with diabetic education.

Keywords: Ozempic, type 2 diabetes, lifestyle modifications, obesity, diabetic management

Dedication

This manuscript is dedicated to my family. Without their love and support none of this would have been possible. To my husband, who has been by my side throughout the process, pushing me when I felt defeated, I thank and dedicate this to you more than anyone. You are my rock.

Acknowledgments

I would like to acknowledge all the influential faculty at Liberty University who helped mold me within the last few years, without which this endeavor would not have been achieved. I would specifically like to acknowledge Dr. Maddox for her help and guidance on this manuscript.

Table of Contents

Contents

List of Abbreviations

Body Mass Index (BMI)

End of Study (EOS)

Glucagon-like peptide-1 receptor agonists (GLP-1 RA)

Hemoglobin A1C (hgbA1C) or (A1C)

Institutional Review Board (IRB)

Patient/Population, Intervention/Indicator, Compare/Control, Outcome, Time of Study (PICO(T))

Plan-Do-Study-Act (PDSA).

Self-Care Inventory - Revised Version (SCI-R)

SECTION ONE: INTRODUCTION

Numerous patients who possess a diagnosis of type 2 diabetes mellitus have poor glycemic management. Most patients would benefit from additional education and resources to help them better comprehend diabetes management. With this level of comprehension, patients can optimize their glycemic management with lifestyle modifications, thus, minimizing complications and requiring less medication(s) for management. This topic is deemed a priority as diabetes remains the seventh leading cause of death within the United States. Further assessment is warranted that targets the effect of lifestyle modifications when paired with select medications. Obesity remains one of the most significant factors in the diagnosis of Type 2 diabetes mellitus. An extensive literature review was completed regarding diabetes and obesity management using Ozempic (semaglutide). This research suggests a need for further examination of patients taking semaglutide paired with diabetic education.

Background

The Centers for Disease Control and Prevention (2022) reported the US obesity prevalence as 41.9% during the years 2017-2020. These figures have risen since that period of time from an average of 30.5% to 41.9% (Centers for Disease Control and Prevention, 2022). During the same timeframe there was also a notable rise in severe obesity from 4.7% to 9.2% (Centers for Disease Control and Prevention, 2022). Obesity prevalence has been publicized to decrease with a higher level of education. For example, those without a high school degree or equivalent were documented to represent the highest levels of obesity with the lower incidence of obesity cohorts being college graduates (Centers for Disease Control and Prevention, 2022). Examining this information supports the notion that educating patients can help manage the diagnosis of obesity through education of lifestyle modifications.

The American Diabetes Association (2023) reported that the prevalence of type 2 diabetes in 2019 was 37.3 million Americans or 11.3% of the world population. They also noted that diabetes was the seventh leading cause of death in the United States in 2019. This information was derived from statistical data documenting 87,647 deaths certified as a diagnosis of diabetes listed as the underlying cause of death, however, also in 2019, diabetes was mentioned as a possibility for cause of death in a total of 282, 801 death certificates (American Diabetes Association, 2023). During t time periods of 2001-2004 and 2017-2020, the diagnosis

of diabetes within the adult population (i.e., age 18+), and residing within the United States has steadily increased from roughly 7% to 10% (American Diabetes Association, 2023).

Problem Statement

Glucagon-like peptide-1 receptor agonists (GLP-1 RAs) are recognized as a more attractive option for treatment of type 2 diabetes due to their effective management of hemoglobin A1C (hgbA1C) and weight while also retaining a declined hazard for hypoglycemia (Trujillo et.al, 2021). With the availability of multiple GLP-1 Ras, specific advantages and disadvantages of each medication have been noted(Trujillo et.al, 2021). For the purposes of this study, Ozempic will be the only GLP1-RA medication considered. Further exploration is required to assess Ozempic's effectiveness towards both type 2 diabetes and weight management. There has been little research conducted to assess the use of Ozempic with assisted lifestyle education for modification(s). A paramount implementation for management of both obesity and type 2 diabetes is lifestyle modification(s). Providing this necessary instruction and integration for lifestyle reform should be examined in tandem with the use of Ozempic.

Purpose of the Project

The purpose of this project is to examine the management of GLP 1-RA medication Ozempic, with the use of diabetic education to reveal improved management outcomes for type 2 diabetics. Ozempic, also known as semaglutide, is a selective glucagon-like peptide-1 receptor agonist (UpToDate,2023). This medication increases glucose dependent insulin secretion, decreases inappropriate glucagon secretion, slows gastric emptying, and manipulates portions of the brain involved in regulation of appetite and caloric intake (UpToDate, 2023). The population for this study included adults over the age of 18, who have been diagnosed as type 2 diabetics with an A1C over 7 and a Body Mass Index (BMI) over 30. The research conducted established A1C, weight in pounds, and BMI numerical data at the beginning and end of the study to demonstrate the findings. Since this project lasted over 12 weeks, the researcher postulated that measuring weight rather than direct BMI may be more relevant. At the beginning of the study, the patients received a diabetic questionnaire (Self-Care Inventory-Revised Version (SCI-R)) to test their knowledge of diabetic lifestyle management. During the study, patients enrolled attained biweekly emails regarding diabetic education. The patients received a total of 12 emails containing specific diabetic lifestyle modifications to help facilitate diabetic management. At the

completion of the study the same questionnaire was submitted for patients to complete, which served to further evaluate patient knowledge of diabetic lifestyle management education.

Clinical Question

Will patients over the age of 18, with an A1C over seven, a BMI over thirty, and a diagnosis of Type 2 diabetes mellitus, show improvement in their AIC, weight, BMI, and diabetic knowledge with use of GLP1-RA Ozempic and education for lifestyle modification over a 12-week period?

SECTION TWO: LITERATURE REVIEW

The data collected revealed that Type 2 diabetes mellitus remains a health concern that exhibits no signs of decrease. The following segments of this scholarly project include a thorough literature review meant to back the clinical question and thus intervention within this project. The researcher appraised, outlined, and reviewed multiple texts to sustain the project completion.

Search Strategy

A literature review was conducted utilizing an organized manner of identifying keywords appropriate to attain relevant evidence. Utilization of databases such as PubMed, Cinahl and Ebsco were applied for the systematic search. Keywords such as Ozempic, type 2 diabetes, lifestyle modifications, obesity, and diabetic management were used during the search. Parameter sets for the search specified within the last five years or specifically from 2018 to 2023. No additional filters were applied to this search. Over 100 articles were discovered during the search, however, a total of 15 articles were selected for analysis. This was narrowed further accessibility of the article, and population size documented. After reviewing the articles, it was determined that 14 out of the 15 would be utilized due to pertinent research into the project at hand. The one study that was excluded was due to its lack of supporting evidence deciphered within the analysis. Included articles examined the use of Ozempic in diabetic management, lifestyle modifications in diabetic management, and lifestyle modifications and management of obesity.

Critical Appraisal

A table of evidence is provided in Appendix A. When examining the research, multiple articles supported the use of Ozempic, a GLP1-RA medication, for the management of type 2 diabetes. When specifically looking at select articles each had its own view with its own individual limitations.

Aroda et.al (2019) examined semaglutide for management of type 2 diabetes across all other platforms of management. While the researchers found superior and sustained glycemic control and weight loss versus all competitors, they did not compare semaglutide to each medication individually, which was a limitation. Although the sample size was large, other limitations included limited demographics and specifiers for the cohort.

Chung et al. (2018) provided thorough research optimizing diabetic management to reduce developing microvascular complications. This team did not specifically analyze the use of Ozempic but rather supported lifestyle modifications as first-line therapy for the optimization of patient outcomes. These researchers conducted a qualitative data analysis but did not directly discuss which articles were evaluated and furthermore their sample descriptors. The researchers concluded that dual therapy of a GLP1-RA appears to be the preferred model for achieving desired outcomes of weight reduction and cardiac risk reduction.

Davies et al. (2021) conducted a trial to assess the efficacy and safety of semaglutide versus placebo for management of weight within type 2 diabetics. The research team conducted a double-blind, double dummy, phase three, superior study that yielded finding suggesting that adults with a diagnosis of overweight or obesity as well as type 2 diabetes receiving semaglutide one time weekly achieves superior weight loss compared to a placebo group.

Ekber et al. (2021) completed a study with the purpose of analyzing real world one-time weekly semaglutide for management of type 2 diabetics in Denmark and Sweden. The team completed a study with 282 participants over 30 weeks analyzing A1C prior to and at the end of the study. The findings suggested that 67.5% of patients achieved an A1C less than 7% and 49.4% achieved weight reduction greater than 5%. However, the study did possess limitations of a significant dropout rate of 49 patients and limited application as patients were only recruited from Denmark and Sweden.

Frias et.al (2021) investigated the efficacy and safety of semaglutide at a dose of 2.0 milligrams versus 1.0 milligrams for control of type 2 diabetes versus metformin. The researchers assessed 1,515 adults and concluded 961 participants, 41% female and 59% male. The research was conducted over a 40-week time frame and was randomized, active control, parallel group, double-blind, phase 3B trial at 125 outpatient clinics in 10 countries. Findings suggested that semiglutide showed improvement in management over metformin. Furthermore, semaglutide 2.0 milligrams was more effective than semaglutide 1.0 milligrams in the management of both A1C and weight loss.

Frias et al. (2021) conducted research to test the efficacy and safety of one-time weekly tripeptide compared to semaglutide. The research team conducted a study with 1879 patients possessing an A1C level of 8.28% and a weight of 93.7 kilograms (206.14 pounds) or higher on both. The research was an open label, 40-week, phase three trial with random assignments to one or the other medication. The findings suggest that tirzepatide was more effective than semaglutide regardless of the dose received of tripeptide. The research revealed a further decrease in BMI and AIC with use of tirzepatide over semaglutide.

Goldenberg et al. (2019) highlighted the importance of multifactorial management in type 2 diabetes rather than the traditional control of glycemic management. They completed a qualitative data analysis that resulted in reinforcement for the superiority of semaglutide as medication management to decrease A1C levels, and weight loss when compared to a placebo cohort. Little evidence was discussed regarding research parameters, including sample size and cohort descriptors.

Mahapatra et.al (2022) conducted research to support semaglutide as an essential management option for type 2 diabetics. Their analysis of 10 phases one study, three phases two studies, 15 phases three studies, and 13 pioneer studies resulted in a qualitative data analysis that led to the conclusion that semaglutide was considered superior management of type 2 diabetes for not only improving glycemic control but also doing so with low risk of hypoglycemia and its increased patient adherence.

Mohammedi et al. (2023) analyzed real world data to support GLP1- RA medication such as Ozempic. The research team conducted a multi-centered, perspective, open-label, single-arm study with 348 participants. The researchers concluded that semaglutide improved A1C and

weight when applied to real-world settings of patients having a diagnosis of type 2 diabetes. Although limitations were not directly discussed the researchers did note that no new safety concerns were identified.

Yale et. al, (2022) studied the effectiveness of semaglutide in 960 type 2 diabetic participants with an A1C greater than or equal to 7. Their 30-week study aimed at decreasing A1C and body weight through the use of semaglutide. The researchers concluded that use of semaglutide was effective when examined across various baseline groups. The research team did not directly discuss limitations, but did support no new safety concerns.

Chawla et al. (2019) assessed the impact of health education on knowledge, attitudes, practices, and glycemic control for patients with a diagnosis of type 2 diabetes. The team studied a total of 100 diabetic patients over the age of 40 and placed 50 into the implementation group and 50 into the control group. At the end of the study which was completed in a teaching hospital in northwest India, the findings revealed a significant increase from baseline knowledge and reduction of A1C compared to the control group. Limitations of the study were documented as a single centered study with a small sample size.

Garcia-Molina et al. (2020) conducted a systematic review analyzing evidence concerning nutritional interventions towards glycemic control of type 2 diabetics. A total of 28 studies were reviewed and it was found that lifestyle intervention significantly improved A1C levels compared to patients without further education.

Wadden et al. (2020) assessed the components of comprehensive lifestyle modifications over a six-month period to include diet, physical activity, and behavioral therapy to aid in successful management of weight loss. The research team concluded that with high levels of physical activity, frequent monitoring of body weight, and a reduced calorie diets yielded long-term weight loss success. The findings showed an average of 8% weight loss over six months as well as decreased cardiovascular risk and improvement to quality-of-life.

Williams et al. (2018) outlined special activity and nutritional considerations for those patients with type 1 and type 2 diabetes. The researchers conducted a systematic review, and concluded that individuals with a diagnosis of type 1 or type 2 diabetes should regularly engage

in physical activity as well as healthy nutritional practices. While the study did not directly discuss limitations the reader implied a lack of direct correlation of supporting documentation.

Synthesis

After examining the literature, this researcher concluded that semaglutide is effective for the management of type 2 diabetes. It is also clear that lifestyle modifications are effective in managing both obesity and type 2 diabetes as evidenced by glycemic control (A1C) and BMI. There is little research to suggest that semaglutide when paired with diabetic education for lifestyle modifications is equally or more effective. Therefore, additional research is needed in order to examine the use of semaglutide and lifestyle modification education for effective and superior management of type 2 diabetes.

Conceptual Framework/Model

A conceptual framework is the structural underpinning for this project. During the project, the Iowa model of evidence-based practice was utilized. Identification of the triggering issue remains optimal diabetic management. The purpose of this study is to examine the newer medication, Ozempic, paired with education towards lifestyle modifications for the diabetic patient to yield improved patient outcomes. This topic remains a priority as diabetes is one of the leading causes of death within both the United States and worldwide. Diabetes is also a contributing factor to comorbidities and poor patient outcomes in a multitude of diagnoses. Currently there remains insufficient evidence supporting the use of semaglutide with diabetic education for management. Research was conducted through collection of the following data pre and post study: A1C, weight, and BMI as well as completion of a survey assessing patients' comprehension towards diabetic management. The aim of this study was to examine diabetic patients' weight, BMI, A1C and diabetic lifestyle management comprehension through use of semaglutide and diabetic educational emails. If the scholarly project yields statistical significance then integration into practice would be recommended.

Theoretical Framework

Within this scholarly project the theoretical framework utilized was the theory of Self-Efficacy. This theory was developed in 1977 by the social cognitive psychologist, Albert Bandura (Bandura, 1977, 1986). The theory of Self-Efficacy has been defined by individuals

influence over what they do (Smith & Liehr, 2018). To determine self-efficacy, individuals must have the opportunity for self-evaluation or rather the ability to compare their output to some form of criteria (Smith & Liehr, 2018). During this self-evaluation process, the individual can judge performance capabilities as well as establish self-efficacy expectations (Smith & Liehr, 2018). One could argue that a higher level of self-efficacy may directly correlated with life benefits such as healthy lifestyle habits. Bandura, differentiated two components of Self-Efficacy theory: self-expectations and outcome expectations (Smith & Liehr, 2018). Self-efficacy expectations are judgements towards ones own personal ability to accomplish a given task, whereas outcome expectations are judgment towards what will happen if a given task is successfully accomplished (Smith & Liehr, 2018).

Utilizing the theory of Self-Efficacy, this study provided a foundational awareness of patients with diabetes and their desire for knowledge regarding lifestyle modifications (Smith & Liehr, 2018). Patients with a diagnosis of type 2 diabetes mellitus must maintain a healthy lifestyle integrated into their daily life for superior management of this diagnosis. It may be argued that those patients who manage their diabetes will likely have increased knowledge, confidence, and self-efficacy to create an improved quality of life, thus encouraging positive outcomes. Those within the medical field can help influence self-efficacy through education and encouragement in the use of non-medication methods of management in all diagnoses; however specifically targeting diabetics for the purpose of this study.

Summary

Within the literature review, it has been noted that semaglutide is effective for the management of type 2 diabetes, BMI management and weight reduction. Additionally,upports lifestyle modifications for the man findings from the studies reviewed support lifestyle management of both type 2 diabetes and obesity. There are gaps in the literature to support the concurrent use of semaglutide and lifestyle education. Will pairing these two interventions yield improved diabetic patient outcomes? Supplementary research is needed to note the effectiveness of this two-pronged approach to management of diabetes.

SECTION THREE: METHODOLOGY

Design

This evidence-based practice project utilized the Iowa Model for Evidence-Based Practice (Iowa Model Collaborative, 2017). This project implemented a non-experimental design consisting of a population attaining selected education regarding diabetic management and lifestyle recommendations. Permission was obtained on July 19, 2023, to utilize the tool for this study see Appendix H. The Iowa Model of Evidence-Based Practice, developed by the University of Iowa, provides a step-by-step guide for nurses to improve patient care during research studies. This research study included 25 diabetic patients on Ozempic (semaglutide) and assessed if education regarding diabetic lifestyle modifications can improve patient's glycemic control. The participants were provided with additional education regarding lifestyle modifications to help support diabetic management. Patients were selected from adults over the age of 18 who had an A1C level of 7 or higher (tested within the last year), and a BMI over 30 (within the last year). Patients were contacted by phone regarding participation in the study, and verbal consent was obtained. Patients were then emailed the consent form for their records. Once the study began patients were sent one email every week that provided diabetic education. Patients were asked to respond if they found the information helpful and if they had any questions regarding the information. Patients completed a pre and post self-assessment of diabetic care management comprehension. The purpose of this study was to see if education can improve glycemic control, diabetic comprehension for lifestyle improvement and potentially decrease BMI and/or weight.

Measurable Outcomes

Measurable outcomes at the conclusion of this evidence-based project were A1C, weight, BMI and diabetic lifestyle comprehension. Prior to the study a self-readiness questionnaire was completed by each participant. A BMI, weight in pounds, as well as an A1C were also collected from each patient as baseline data. The same data points were collected at the end of the study (EOS) in order to compare statistical significance and quality improvement.

Setting

The project was completed within an outpatient primary care office. The office is located in a city in the southeast portion of Connecticut. The population of this region is estimated at

39,000 individuals which equates to a population density of 1,432 people per square mile (Census Bureau,2023). The average adult age of this region is 39.3 years (Census Bureau,2023). Documentation supports 48.48% being males while 51.52% are females (Census Bureau,2023). Within this population 93.9% are citizens, and only 14.4% were born outside the country (Census Bureau,2023). When examining race 59% are White, 12 % are Black, 18% are Hispanic/Latino, 7% are Asian, and 8 % are listed as two or more races (Census Bureau,2023). This setting was selected due to its convenience of location, and access to a great number of diabetic patients. There was enough adult patients who met the criteria for this study within the practice. Fortunately, the practice had the ability to test A1C levels onsite.

This organization's mission focused on, "Providing affordable, accessible primary health care, oral health care, behavioral health care, care coordination and support services for people of all ages (_____ Family Health Center, 2023)." This project aligns with the office's mission by supporting affordable care to diabetic patients. If diabetic patients can be educated on how to manage their diagnosis with lifestyle modifications, fewer medications, hospitalizations, and procedures could be the result. This project supported affordable life options.

Population

The population of adults, 18 years or older was selected, as Ozempic has not been FDA studied in children. Specifically, diabetics with an A1C over 7 support the need for intervention to aid in management of the disease. The populations consisted of males and females over the age of 18 with an A1C over 7 and a BMI over 30. Working with the IT department of the organization a roster was obtained of adult patients on Ozempic within the office where the study took place. The population was then examined to eliminate any patient with an A1C under 7 or a BMI under 30. Patients who met these criteria were contacted via telephone in order to explain the study and offered placement. Twenty-five patients agreed to participate in the study. 10 of whom were female, and 15 males. When each patient agreed to placement in the study, a verbal consent was obtained, and then a self-readiness questionnaire was emailed to each participant, completed, and then returned via email. A copy of the consent form was emailed to each patient for his/her records. At the beginning of the study, 15 participants (60%) had a BMI ranging from 30-39, the additional 10 participants (40%) BMI was over 40. Twelve participants (48%) had an A1C ranging from 7-7.9. Six participants (24%) had an A1C ranging from 8-8.9. Four

participants (16%) had an A1C ranging from 9-9.9. Two participants (8%) had an A1C over 10. Scores on the Self Care Inventory - Revised ranged from 29-45 (potential scores range from 15-75).

Ethical Considerations

Prior to the start of this project the researcher completed the Collaborative IRB training Initiative (CITI) and received a certification research ethics training to ensure protection of the human subjects (see Appendix I). Permission was attained as of August 1, 2023, from the Institutional Review Board (IRB) at Liberty University (see Appendix K). Verbal consent was attained from each participant via telephone, and each participant was provided with a copy of the informed consent form (see Appendix G) for their records.

Consideration to this project included patients' privacy to ensure the participant information was not compromised throughout the study. Each participant was assigned a numerical code to ensure patient confidentiality. There were no patient identifiers used for data collection.

Data Collection

Data was collected from the organization's IT department. The information was completed through a HIPAA compliant connection. The organization sent educational information with the ability to respond directly to the organizer. This helped to decrease the time from question to response. At the conclusion of the study coding was used from the organization's IT department to run reports comparing BMI, weight, AIC, and pre/post survey results.

Tools

The survey tool used for this study was the Self-Care Inventory-Revised (SCI-R). This tool is a questionnaire/survey for the purpose of evaluating the patient's comprehension of diabetic lifestyle management. This tool originated from the University of Miami and was developed by Annette M. La Greca (University of Miami, 2018). This self – report measure was designed to aid in assessing a patient's level of adherence to diabetic self-care recommendation (University of Miami, 2018). Greca, is a professor of psychology and pediatrics, a Cooper Fellow and Provost Scholar, and Director of Clinical training (University of Miami, 2018). Permission to use the survey was granted on July 19, 2023 (see Appendix H). This tool was

selected for the patients in the study due to the ease and simplicity of collecting information. The tool is simple to understand, supporting patients with lower comprehension skills. The SCI has good reliability and validity with adults. Specifically, Greco et al. (1990) studied 44 adults with Type 1 diabetes (mean age = 31.5 years), assessing their self-care levels on the SCI with obedience indicators taken from two 24-hour memory conversations for diabetes care (Johnson, 1992). The items reflecting glucose testing occurrence associated strongly with glucose testing frequency from the 24-hour recall discussion ($r = .79$, $p < .001$); eating frequency and exercise frequency matters on the SCI also correlated with their complements from the interview (r's = .54 and .31, respectively, p's < .05 Johnson, 1992). The SCI items were meaningful predictors of metabolic control, reporting 36% of the alteration in HbA1c ($F = 4.43$, $p < .01$), as opposed to 28% of the variance described by the 24-hour recall interview (Johnson, 1992). Scoring is based upon the mean average of select categories. The tool possesses 15 questions each with five options to select as an answer. Scores for the tool range from 15 to 75, the higher the score the higher the diabetic knowledge regarding diabetic management.

Intervention

This project began with a comprehensive literature review to support the development of the scholarly project. After analyzing sufficient articles, development of a specific PICO(T) question was completed. A draft of the consent form was completed prior to beginning the study. Discussion with the organization regarding project and PICO(T) was initiated and approved. A letter supporting the project was obtained from the organization (see Appendix F). The IT department was consulted and requested to search for patients within the established location who meet the parameters of the study. Patients were assessed to ensure supporting characteristics needed for study and the population was developed. The cohort of patients received phone calls to offer placement into the study. Patients who agreed and verbally consented were accepted into the study. Patients received a consent form via email for their records. During the phone call patients were also prescreened on the self-care inventory revised (SCI-R) to evaluate their level of comprehension to diabetic lifestyle management. Additional data of BMI, weight, and A1C were collected for the beginning of study statistics. Patients were provided one e-mail every week that focused on diabetic lifestyle modifications. With each e-mail the following questions were provided. Did you receive the email? Did you find this information helpful? Do you have any additional questions? If not reply email was attained the patient was called to follow up, also

to ensure the correct email address was being utilized. If the patient did not respond by phone or email, they were removed from the study. At the completion of 12 weeks patients were again asked to complete the SCI-R questionnaire. Other information collected at the EOS was an updated BMI, weight, and A1C for statistical information. These data were compared pre and post intervention and assessed for statistical significance.

Timeline

The formulation of the patient/population, intervention/indicator, compare/control, outcome, time of study (PICO(T)) question, consent from organization, and collection of data with help from the IT department began prior to the first week of the study, which was termed week 0. Week one began on 8/1/23 after IRB approval was granted. On Week 1, the first email was sent to all 25 participants. Patients received an e-mail every week, with the last e-mail being received on week 12. With the help of the IT department, information was gathered starting at the completion of week 12, moving into week 13. While the study was conducted over 12 weeks, research and analysis of the data created a total time of 14 to 15 weeks. The entire timeline may be found in Appendix L.

Feasibility Analysis

The DNP student conducted this research within the community health clinic. No expenses were concurred through the research as patients' labs were already being collected. Information was attained from routine appointments at which time vitals to include patients' height, weight and BMI routinely are collected. Fortunately, the community health center could also perform in-house A1C testing. If patients were not due for routine labs, these data were collected during visits at the end of the study. The organization was able to obtain data with the help of the IT department at no additional cost. Phone lines, internet and email were also utilized at no additional cost.

Data Analysis

Evaluations of measurable outcomes were assessed at the beginning of the study and at the conclusion of the study. These data included the patients' A1C, BMI, weight in pounds, and patients pre and post survey results.

AIC

Assessment was made on the average of all participants' A1C prior to the study and A1C after the study. These numbers were analyzed for statistical significance related to the last 12 weeks of diabetic education towards lifestyle modifications.

BMI/Weight in Pounds

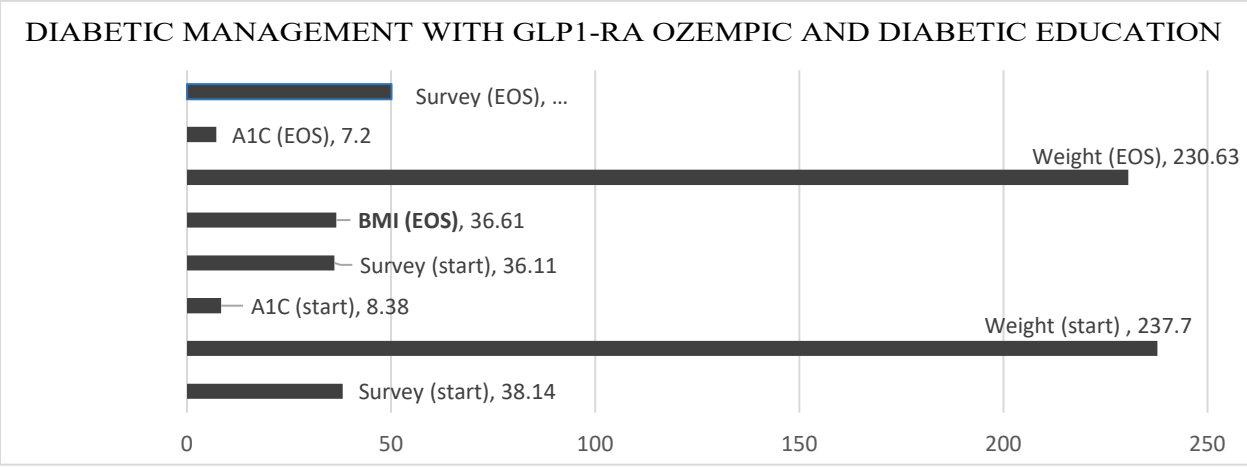
Assessment was made on the average of BMI and weight in pounds for all participants, prior to the study and after the study. These numbers were analyzed for statistical significance related to the last 12 weeks of diabetic education towards lifestyle modifications.

Diabetic Comprehension

Assessment was made on the average for all participants of the SCI-R survey responses prior to the study and after the study. These numbers were analyzed for statistical significance related to the last 12 weeks of diabetic education towards lifestyle modifications.

SECTION FOUR: RESULTS

Within the study 25 participants were initially enrolled (10 females and 15 males), with a total of 19 participants completing the study (eight females and 11 males). Preliminary data collected revealed an average BMI of 38.18. The average weight for the cohort was calculated at 237.37 lbs. The average A1C was 8.38. The average score for the Self Care Inventory - Revised was 36.11.



Descriptive Statistics -

Data collected at the completion of the study, and after week 12. Included BMI, weight in pounds, A1C and Self Care Inventory – Revised score. Data were analyzed for support of statistical significance. A paired *t*-test was utilized to examine the two samples of pre-test and post-test results for BMI, weight in pounds, A1C, and pre/post-survey results. For the results to be significant, the *p* value had to be < 0.05.

Measurable outcomes 1: BMI

BMI: Pre study data collected resulted in an average of 38.18. Post study results showed an average of 36.61. *P* value revealed 0.0220, which indicates statistical significance as the value is less than 0.05. See Appendix M for data analysis.

Measurable outcomes 2: Weight

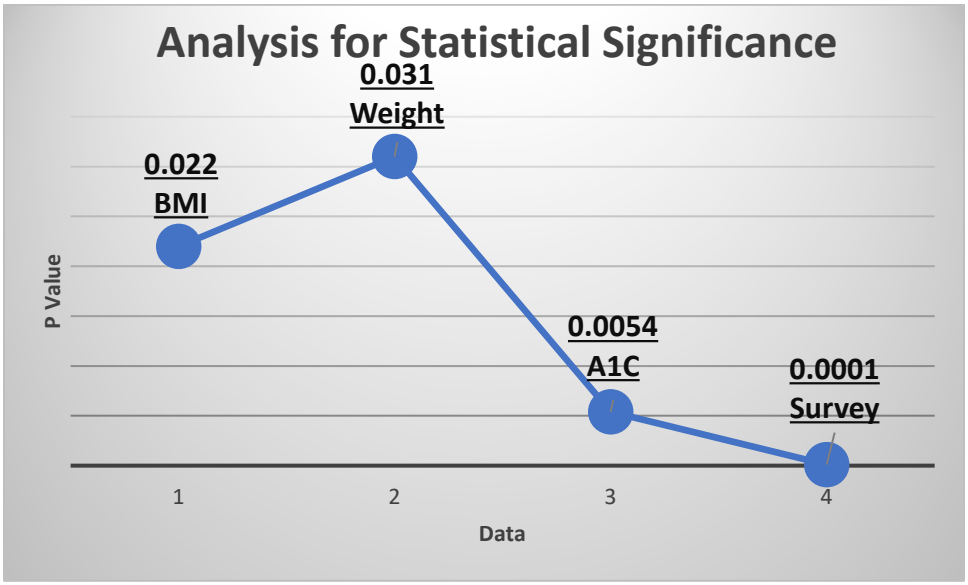
Pre study data collected resulted in an average of 237.37 lbs. Post study results showed an average of 230.68 lbs. *P* value revealed 0.0310, which indicates statistical significance as the value is less than 0.05. See Appendix M for data analysis.

Measurable outcomes 3: A1C

Pre study data collected resulted in an average of 8.38. Post study revealed an average A1C of 7.17. *P* value revealed 0.0054, which indicates statistical significance as the value is less than 0.05. See Appendix M for data analysis.

Measurable outcomes 4: Self Care Inventory - Revised

Pre study data resulted in an average of 36.11 for the survey results. Post study revealed an average of 50.1. *P* value revealed 0.0001, which indicates statistical significance as the value is less than 0.05. See Appendix M for data analysis.



SECTION FIVE: DISCUSSION

Implication for Practice

With the review of the study results it became apparent that providing diabetic educational information to patients with a diagnosis of diabetes revealed improved patient outcomes in BMI, weight, glycemic control, and comprehension of management at the patient level. Furthermore, this project solidified that structured education is imperative for patients with the diagnosis of diabetes. Although medications are necessary for acceptable glycemic control, most patients without additional education in lifestyle modifications and lifestyle management were unable to demonstrate targeted control or comprehension of how to attain acceptable control. The importance of this project is to further facilitate the education of diabetic management in diabetic patients. Through this study a formulation of diabetic education is now available to be utilized in practice.

This project demonstrated that education paired with medications, specifically semaglutide, can improve patients' weight and glycemic control. Limitations of this study were a small patient population, and a specific focus on one diabetic medication. Additionally, studying semaglutide at different dosages could help determine which dose would be more effective. Including additional diabetic medication in future studies and comparing outcomes with educational support would be beneficial for this patient population. Further studies are needed to create additional recommendations.

Sustainability

Sustainability of any project remains at the forefront of research. If the project does not prove statistical significance and is not able to be replicated in the healthcare environment, then the research would be considered unsuccessful. Within this study the implication of education on diabetic patients is not only sustainable but should be considered the gold standard of diabetic management. It is feasible and crucial for patients to become educated, not only on the diagnosis, but on lifestyle management. Education of lifestyle modifications in diabetic patients helps to support learning and improve outcomes. Creating an environment for patients to become educated is not only difficult for the patient but also for the health care organization. To find time that is designated for the organization of patient education can be challenging. The sustainability of successful diabetic education is difficult if the organization cannot support space and time that works for both the organization and the patient.

Dissemination Plan

Dissemination of diabetic educational information into patient management may be accomplished through a multitude of avenues. What was found to work for this organization of study was to create nursing visits through a referral process from the primary care provider. After proving statistical significance of the educational information supplied the organization has since created a diabetic guide. This guide will be distributed during a one-hour patient visit with a nurse to discuss diabetic education and lifestyle modification. During this visit the nurse will educate them on their diagnosis and necessary alteration of their current lifestyle. The nurses will go over the definition of diabetes, what medications are being prescribed, when and how to take these medications, how to test glucose levels, and how to manage hypoglycemia. The nurse will then summarize this information by going over the 12 educational emails supplied to the 25 patients who participated in this study. All patients will then be offered a follow-up visit, if desired, to go over any questions after four weeks of care on their own. If further visits are needed based on the previous visit, they will be booked on a four-week basis. Once the patient feels confident in their knowledge and ability to support themselves in this chronic diagnosis, no other visits will be booked with the nurse. The plan will be started as a Plan-Do-Study-Act (PDSA). If this proves to be effective, it will transition into a standard of practice within the organization.

Conclusion

Improvements to lifestyle choices through diabetic education paired with semaglutide have proven favorable in managing glycemic control, weight in pounds, and BMI. Statistical significance through analysis of the collected data has been proven for this cohort that diabetic education related to lifestyle modifications is effective. Medical professionals can aid in improving outcomes for diabetic patients by providing education regarding the disease and lifestyle adjustment. Further research studies could be valuable for the diabetic population. Additional research should include other medications paired with education to determine if the missing piece to diabetic management is education regarding routine management options.

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Diabetic management with GLP1-RA Ozempic and diabetic education

pooled analysis of data from four SURE studies by baseline characteristic subgroups. *BMJ Open Diabetes Research and Care*, *10*(2), e002619.

Appendix A- **Evidence Table**

ARTICLE CRITIQUE AND LEVELING MATRIX

Article Title, Author, etc. (Current APA Format)	**Study Purpose**	**Sample (Characteristics of the Sample: Demographics, etc.)**	**Methods**	**Study Results**	**Level of Evidence (Use Melnyk Framework)**	**Study Limitations**	**Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.**
Article Aroda, V. R., Ahmann, A., Cariou, B., Chow, F., Davies, M. J., Jódar, E., Mehta, R., Woo, V. & Lingvay, I. (2019). Comparative efficacy, safety, and cardiovascular outcomes with once-weekly subcutaneous semaglutide in the treatment of type 2	The purpose of this study was to develop a new treatment for type 2 diabetes that requires an understanding of their mechanism and efficacy as well as their relative effects compared to other treatment choices of treatment. The	8000 patients across the spectrum of type 2 diabetes.	Qualitative data analysis	The research analyzed supported semaglutide (Ozempic), for superior and sustained glycemic control and weight loss versus all competitors evaluated. When examining patients with high-risk cardiovascular disease this medication provided significant decrease of occurrence to cardiovascular events compared with placebo and standard of care.	**Level V:** evidence from systematic reviews of descriptive and qualitative studies (PennState University Libraries, 2023).	Limitations were not discussed.	This information collected from research can be utilized as evidence to support an alteration to diabetic management. Practitioners remain aware that diabetes, hypertension, hyperlipidemia

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
diabetes: insights from the SUSTAIN 1–7 trials. *Diabetes & metabolism*, *45*(5), 409-418.	study also demonstrated cardiovascular safety.						are all interconnected and affecting one another. If research can support improvement to cardiovascular outcomes as well as improvements in obesity, through weight loss, and diabetic control then the evidence is strong enough to support an alteration to

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
							evidence-based practices.
Chamberlin, S., & Dabbs, W. (2019). Semaglutide (ozempic) for type 2 diabetes mellitus. *American Family Physician*, *100*(2), 116-117.	The purpose of the current research study was to evaluate semaglutide, also known as ozempic, for treatment of type 2 diabetes. Research conducted evaluated safety of the medication, tolerability, effectiveness, price, and	This research article was conducted through the American family physician under STEPS, which is listed as a new drug reviewer covering safety, tolerability, effectiveness, price, and simplicity. Under these medication reviews there is no discussion of direct samples utilized to	Qualitative data analysis	The results documented report avoidance of semaglutide as a first line treatment due to potential risk of thyroid cancer completed in animal studies, and avoidance of patients with a personal or family history of thyroid carcinoma or multiple endocrine neoplasia. This medication has been documented to increase risk of severe hypoglycemia when compared to placebo if you utilize as monotherapy. Pancreatitis can occur about	**Level V:** evidence from systematic reviews of descriptive and qualitative studies (PennState University Libraries, 2023).	Limitations were not discussed.	This information would be useful as evidence to support a change, however without the appropriate documentation of where the research was collected from there is no evidence to support what is

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
	simplicity of use.	support evidence supplied.		three times per 1000 patients within a year. Cholelithiasis will affect about 2% of patients per year. The medication has been documented as well tolerated by most but some do experience GI symptoms. When this medication is added to the regiment with metformin reduction in A1C levels of 1.5 to 1.8% dependent on dose. Patients have also been documented to see a weight loss of 3.8 to 4.7 kilograms. The medication has revealed reduction of cardiovascular diagnosis and events. The medication has been			being relayed within the research article. Therefore, this information would not substantiate proof for an alteration to evidence-based practices.

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
				documented at approximate cost of $800 per month. The bottom-line research reveals that adding this medication to existing treatment to improve glycemic control and induce weight loss as well as protect against cardiovascular outcomes in type 2 diabetics. Common adverse effects of GI symptoms may limit use for select patients as well as the price.			
Chung, J. W., Hartzler, M. L., Smith, A., Hatton, J., & Kelley, K. (2018). Pharmacological	Optimizing diabetes management to reduce the risk of developing microvascular	Sample size was not discussed.	Qualitative data analysis	Dual therapy with the addition of a GLP one RA or an SGLT 2 inhibitor are preferred models to achieve the desired weight reduction and have potentially greater	**Level V:** evidence from systematic reviews of descriptive and qualitative	Limitations were not discussed.	Research gathered could be used to support change due to the evidence

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
agents utilized in patients with type-2 diabetes: Beyond lowering a1c. *Pharmacy and Therapeutics*, *43*(4), 214.	complications such as retinopathy, neuropathy, nephropathy, as well as macrovascular complications such as cardiovascular disease, myocardial infarction, and stroke. With the current recommendations of glycemic control of less than 7% with an ideal target of			cardiac risk reduction than alternative agents.	studies (PennState University Libraries, 2023).		collected. After examination of multiple type 2 diabetic medications the research concludes that dual therapy to include a GLP-1RA medication such as Ozempic as beneficial to achieve the desired outcomes. The research does suggest under goals of

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
	6.5% or less, research is needed into improved diabetic management options. The purpose of this study was to conclude lifestyle modifications as first line therapy and optimization of therapeutic treatments of pharmacology.						therapy that recommendation of lifestyle modifications as first line therapy but does not further explore this within their research. Notating this would also help support additional research needs into lifestyle modifications potentially with use of GLP-

Diabetic management with GLP1-RA Ozempic and diabetic education

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
							1RA medication(s).
Davies, M., Færch, L., Jeppesen, O. K., Pakseresht, A., Pedersen, S. D., Perreault, L., Rosenstock, J., Shimomura, I., Vilkoen, A., Wadden, T.A., & Lingvay, I. (2021). Semaglutide 2· 4 mg once a week in adults with overweight or obesity, and type 2 diabetes (STEP 2): a randomised,	Research conducted during this trial was to assess the efficacy and safety of GLP 1A, semaglutide, versus placebo for weight management in type 2 diabetics.	Patients were recruited from 149 outpatient clinics in 12 countries across Europe, North America, South America, Middle East, South Africa, and Asia. Patients were randomly allocated into control versus study group. Patients were studied for 68 weeks and provided lifestyle	Double-blind, double dummy, phase three, superior study	Interpretation yielded adults with overweight or obesity as well as type 2 diabetes receiving semaglutide 2.4 milligrams once weekly achieved a superior and clinical meaningful decrease in body weight compared to the placebo group.	Level II: evidence obtained from at least one well designed randomized controlled trial (RCT). (PennState University Libraries, 2023).	Limitations were not discussed.	Information collected from this study should be sufficient evidence to support a change in current evidence-based practices. Due to the large sample size, and correlation of evidence one could argue that this

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
double-blind, double-dummy, placebo-controlled, phase 3 trial. *The Lancet*, *397*(10278), 971-984.		interventions. A total of 1595 patients were screened and 1210 were randomly assigned to semaglutide 2.4 milligrams (n=404), semaglutide 1.0 milligrams (n=403), and placebo (n=403).					supports an alteration of evidence-based practice to include semaglutide in management of type 2 diabetes and obesity.
Ekberg, N. R., Bodholdt, U., Catarig, A. M., Catrina, S. B., Grau, K., Holmberg, C. N.,	Purpose of this research study was to analyze real world use of one-time weekly semaglutide in	331 patients started the research program and 282, or 85% of the cohort, completed	Research conducted was a 30-week prospective, multicentered, open label,	By the end of the study 67.5% of patients achieved an A1C less than 7% and 49.4% achieved a weight reduction of greater than 5%.	Level III: evidence obtained from a well-designed controlled trial	**L**imitations of the current study was the dropout 49 patients, and adverse events	This evidence would be helpful to support an alteration of practice.

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Klanger, B. & Knudsen, S. T. (2021). Real-world use of once weekly semaglutide in patients with type 2 diabetes: Results from the SURE Denmark/Sweden multicentre, prospective, observational study. *Primary Care Diabetes*, *15*(5), 871-878.	adults with type 2 diabetes in Denmark and Sweden.	the study on treatment.	observational study of type 2 diabetics with a documented A1C value less than 12 weeks prior to initiating the study. Primary and secondary endpoints were assessed between baseline and end of study.		without randomization. (PennState University Libraries, 2023).	consistent with the safety profile of the medication semaglutide.	Utilization of semaglutide for weight and diabetic management of type 2 diabetes is demonstrated through the current research.
Frías, J. P., Auerbach, P., Bajaj, H. S.,	The purpose of the current research was to	1515 adults were assessed for eligibility and 961	The research team conducted a 40 week,	The mean alteration of A1C from baseline at 40 weeks was down 2.2% with	Level II: evidence obtained from	Limitations were not directly	This evidence would be helpful to

Diabetic management with GLP1-RA Ozempic and diabetic education

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Fukushima, Y., Lingvay, I., Macura, S., Sondergaard, A.L., Tankova, T.I., Tentolouris, N., & Buse, J. B. (2021). Efficacy and safety of once weekly semaglutide 2· 0 mg versus 1· 0 mg in patients with type 2 diabetes (SUSTAIN FORTE): a double-blind, randomized, phase 3B trial. *The Lancet Diabetes & Endocrinology*, *9*(9), 563-574.	investigate the efficacy and safety of once weekly semaglutide 2.0 versus 1.0 milligrams in adults with inadequate control of type 2 diabetes on a stable dose of metformin with or without sulfonylurea.	participants with the mean age of 58 years were enrolled. 41% of participants were female the alternative 59% were male.	randomized, active controlled, parallel group, double-blind, phase 3B trial at 125 outpatient clinics in 10 countries. Participants were over 18 years in age with inadequate control of type 2 diabetes containing an A1C of 8 to 10 on metformin and with or without use of	semaglutide 2.0 milligrams and down 1.9% with semaglutide 1.0 milligrams. The mean change in body weight from baseline at 40 weeks was down 6.9 kilograms with semaglutide 2.0 milligrams and down 6 kilograms with chemical side 1.0 milligrams. At the conclusion of the study semaglutide 2.0 milligrams was superior to 1.0 milligrams in reduction of A1C with additional body weight loss.	at least one well designed randomized controlled trial (RCT). (PennState University Libraries, 2023).	discussed. Gastrointestinal disorders were most reported as adverse events in the 2.0 milligram group at a rate of 34% participants in 31% of participants in the 1.0 milligram group. Serious adverse events were similar between treatment	support an alteration of practice. Utilization of semaglutide at a higher dose is more effective for weight and diabetic management of type 2 diabetes demonstrated through the current research.

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
			sulfonylurea. Patients were randomly assigned to once weekly semaglutide 2.0 milligrams (n=480), or 1.0 milligrams (n=481). 462 patients attaining semaglutide 2.0 milligrams and, 471 patients attaining semaglutide 1.0 milligrams completed the trial.			groups reported at 21 participants given some agglutinate 2.0 and 25% of participants given semaglutide 1.0 milligrams. 3 deaths were reported during the trial, one in the semigroup tide 1.0 milligram group and two in the	

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
						semigroup tide 2.0 milligram group.	
Frías, J. P., Davies, M. J., Rosenstock, J., Pérez Manghi, F. C., Fernández Landó, L., Bergman, B. K., Pharm, D., Liu, B., Cui, X., & Brown, K. (2021). Tirzepatide versus semaglutide once weekly in patients with type 2 diabetes. *New England Journal of*	Research conducted was to test the efficacy and safety of once weekly tripeptide as compared to semaglutide.	1879 patients who possess an average A1C level of 8.28%, mean age of 56.6 years in a mean weight of 93.7 kilograms.	Research was an open label, 40-week, phase three trial which randomly assigned 1879 patients to receive tirzepatide dose of 5 milligrams, 10 milligrams, or 15 milligrams or semaglutide at a dose of 1 milligram.	The average alteration from baseline in A1C level was down 2.01% with a range of 2.24% to 2.3% with dosage of 5 milligrams, 10 milligrams, 15 milligrams of tirzepatide. Respectively semaglutide participants were down 1.86% on their A1C levels. The research conducted does conclude that Tirzepatide is superior to semaglutide. Reduction in body weight was greater in Tirzepatide than semaglutide. Patients with type 2 diabetes	Level II: evidence obtained from at least one well designed randomized controlled trial (RCT). (PennState University Libraries, 2023).	Direct study limitations were not discussed. The most common adverse events were GI and were primary mild to moderate in severity in both groups. Patients who received tirzepatide reported	This evidence would be helpful to support an alteration of practice. Utilization of semaglutide and tirzepatide for more effective management of weight and diabetic management of type 2 diabetes.

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Medicine, *385*(6), 503-515.				had a superior improvement to their A1C and weight after 40 weeks of tirzepatide rather than semaglutide.		hypoglycemia in 0.2 to 1.7 % and 0.4% of those who received semaglutide. Serious adverse events were reported in 5 to 7% of patients who received tirzepatides and 3% of those who received semaglutide.	
Goldenberg, R. M., & Steen, O. (2019).	The research article was to	Semaglutide unabated	Qualitative data analysis	Results from the completed trials reinforce the	Level V: evidence from	Study limitations	The information

Diabetic management with GLP1-RA Ozempic and diabetic education

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Semaglutide: review and place in therapy for adults with type 2 diabetes. *Canadian journal of diabetes*, *43*(2), 136-145.	highlight the importance of multifactorial management in type 2 diabetes in contrast to the more traditional focus on glycemic control.	sustainability in Treatment of Type 2 Diabetes (SUSTAIN) clinical trial program.		superiority of semaglutide for decrease of glycated hemoglobin levels and weight loss vs. placebo as well as other medications such as sitagliptin, exenatide extended-release, dulaglutide and insulin glargine. SUSTAIN 6 trial data endorsed cardiovascular safety and supported significant decrease in major cardiovascular events with semaglutide vs. placebo.	systematic reviews of descriptive and qualitative studies. (PennState University Libraries, 2023).	were not discussed.	obtained from the clinical trial assessed within the current research analysis supports the use of semaglutide in the management of type 2 diabetes.
Mahapatra, M. K., Karuppasamy, M., & Sahoo, B. M. (2022).	This research was conducted to support semaglutide as	Analysis of 10 phase one studies, three phase two studies, 15 phase	Qualitative data analysis	Semaglutide can be considered as a quintessential of GLP-1 receptor agonist pursuing management of	Level V: evidence from systematic reviews of	Limitations were not discussed.	The information obtained from the clinical trial

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Semaglutide, a glucagon like peptide-1 receptor agonist with cardiovascular benefits for management of type 2 diabetes. *Reviews in Endocrine and Metabolic Disorders*, *23*(3), 521-539.	essential management for type 2 diabetes.	three studies, in 13 pioneer studies.		diabetes. This review has discussed the discovery, development phases, clinical studies, place in pharmacotherapy, practical considerations, recent developments, and efficacy of semaglutide. The anti-hyperglycemic action of semaglutide has been confidently established in a series of clinical trials on adults, elderly, and obese type 2 diabetic patients with or without renal/hepatic impairment or cardiovascular ailment. Semaglutide provides improved glycemic control with low risk of hypoglycaemia in	descriptive and qualitative studies. (PennState University Libraries, 2023).		assessed within the current research analysis supports the use of semaglutide in the management of type 2 diabetes.

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
				monotherapy and reliable patient adherence. Semaglutide has been shown to be a necessary treatment option in the armory for improving management of diabetes.			
Mohammedi, K., Belhatem, N., Berentzen, T. L., Catarig, A. M., & Potier, L. (2023). Once-weekly semaglutide use in patients with type 2 diabetes: Results from the SURE France multicentre, prospective,	Research was conducted to attain real world data in support of Glucagon like peptide 1 receptor agonist for use in management of type 2 diabetes.	497 patients initiated semaglutide and 348 completed the study on treatment. Patient population was adults with a diagnosis of type 2 diabetes and one or more documented A1C less than or equal to 12 weeks	A multi centered, perspective, open label, single arm study. The primary endpoint was A1C change from baseline to end of study. The secondary	Baseline average A1C levels of 8.3%, median weight 9.2 kilograms and median waist circumference of 114.2 centimeters. At the end of study, the A1C average decrease was down 1.2%, weight down 4.7 kilograms, and waist circumference down 4.9 centimeters. These results support the use of semaglutide in real world	Level II: evidence obtained from at least one well designed randomized controlled trial (RCT). (PennState University Libraries, 2023).	Study limitations were not directly discussed however no new safety concerns were identified.	The information obtained from the clinical trial assessed within the current research analysis supports the use of semaglutide in the

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
observational study. *Diabetes, Obesity and Metabolism*.		prior to the study initiation.	endpoint included change of baseline to weight, and waist circumference.	settings of patients that are adults with type 2 diabetes desiring a decrease of A1C and body weight.			management of type 2 diabetes.
Yale, J. F., Bodholdt, U., Catarig, A. M., Catrina, S., Clark, A., Ekberg, N. R., Erhan, U., Holmes, P., Knudsen, S.T., Liutkus, J., Sathyapalan, T., Schultes, B., & Rudofsky, G. (2022). Real-world	Research aimed to characterize the use of one-time weekly medication semaglutide in patients with type 2 diabetes.	1212 patients 960 where GLP dash 1R a naive and 252 had switched to semaglutide from another GLP1-RA. Patients within this population had a baseline A1C of greater than or equal to 7%.	30-week study aimed at alternating A1C and body weights through a post hoc pulled analysis of four real world studies (SURE Canada, Denmark slash Sweden,	The overall population A1C was reduced from baseline to end of study by 1.1% and body weight by 4.7 kilograms. By end of study 52.6% of patients in the overall population achieved an A1C less than 7. Within this pooled analysis patients containing a diagnosis of type 2 diabetes starting once weekly semaglutide revealed	Level V: evidence from systematic reviews of descriptive and qualitative studies, (PennState University Libraries, 2023).	Although study limitations were not discussed no new safety concerns were identified.	The information obtained from the clinical trial assessed within the current research analysis supports the use of semaglutide in the

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
use of once-weekly semaglutide in patients with type 2 diabetes: pooled analysis of data from four SURE studies by baseline characteristic subgroups. *BMJ Open Diabetes Research and Care*, *10*(2), e002619.			Switzerland and UK).	significant improvements from baseline to end of study A1C and body weight across various baseline groups, to include patients who previously were treated with GLP1- RNA other than semaglutide.			management of type 2 diabetes.
Chawla, S. P. S., Kaur, S., Bharti, A., Garg, R., Kaur, M., Soin, D., ... & Pal, R. (2019). Impact of health	The purpose of the study was to assess the impact of health education towards	The study was conducted on 100 diabetic patients aged over 40 years. Patients were split into 50 receiving	This was a case control study conducted within a medical department at a tertiary care	Research completed revealed significant increase from baseline knowledge when compared to the control group. There was also documentation for a	Level III: Evidence obtained from well-designed controlled trials without	Limitations of this study were documented as a single centered study	The information obtained from the clinical trial would be utilized to

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
education on knowledge, attitude, practices and glycemic control in type 2 diabetes mellitus. *Journal of family medicine and primary care*, *8*(1), 261.	knowledge, attitudes, practices, glycemic controls for patients with a diagnosis of type 2 diabetes.	implementations in 50 controls.	teaching hospital in northwest India.	significant reduction in A1C compared to the control group.	randomization (PennState University Libraries, 2023).	with a small sample size.	support the need for DM education and education for lifestyle modification(s) .
Garcia-Molina, L., Lewis-Mikhael, A. M., Riquelme-Gallego, B., Cano-Ibanez, N., Oliveras-Lopez, M. J., & Bueno-Cavanillas, A. (2020). Improving	The purpose of this systematic review and meta-analysis was to create an analysis of the scientific evidence concerning	A total of 28 studies were included.	Meta analysis and systematic review	Results supported that lifestyle intervention significantly lowered A1C levels compared to the standard of care for most patients containing A diagnosis of type 2 diabetes.	Level V: evidence from systematic reviews of descriptive and qualitative studies, (PennState University	Study limitations were not directly discussed.	The information obtained from the review would be utilized to support the need for DM education and

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
type 2 diabetes mellitus glycaemic control through lifestyle modification implementing diet intervention: a systematic review and meta-analysis. *European journal of nutrition*, *59*(4), 1313-1328.	nutritional intervention towards glycemic control for patients with a diagnosis of type 2 diabetes.				Libraries, 2023).		education for lifestyle modification(s).
Wadden, T. A., Tronieri, J. S., & Butryn, M. L. (2020). Lifestyle modification approaches for the	The purpose of this study was to assess the components of comprehensive lifestyle	The research article did not directly discuss the sample size or characteristics specific to the	Participants participated in a six-month high intensity program providing 14 or	After six months participants revealed an average weight loss of eight kilograms, or 8% of weight as well as experience improvements in	Level IV: evidence from well-designed case control and cohort studies	Study limitations were not directly discussed.	The information obtained from the study could be utilized to support the

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
treatment of obesity in adults. *American psychologist*, *75*(2), 235.	modifications including diet, physical activity, and behavioral therapy to successfully manage weight loss over six months.	sample besides obtaining A diagnosis of obesity. Furthermore, the diagnosis of obesity was not defined by a specific application.	more counseling sessions with a trained interventionist. Additional recommendations were high levels of physical activity, frequent monitoring of body weight, and consumption of a reduced calorie diets associated with long term	cardiovascular disease risk factors and quality of life.	(PennState University Libraries, 2023).		need for DM education and education for lifestyle modification(s).

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
			weight loss success.				
Williams, J. E., Helsel, B., Nelson, B., & Eke, R. (2018). Exercise considerations for type 1 and type 2 diabetes. *ACSM's Health & Fitness Journal*, *22*(1), 10-16.	The purpose of this article was to outline special physical activity and nutritional considerations for those with type one and type 2 diabetes.	The sample of the study was a review of literature but does not directly discuss how much literature was analyzed to create this article.	Systematic reviews with qualitative study implications	In the end the research team concludes that a individual with a diagnosis of diabetes should regularly engage in physical activity and healthy nutrition practices.	Level V: evidence from systematic reviews of descriptive and qualitative studies, (PennState University Libraries, 2023).	Study limitations were not discussed.	The information obtained from the review could be utilized to support the need for DM education and education for lifestyle modification(s).

Appendix B-**Self Care Inventory - Revised**

Self Care Inventory-Revised Version (SCI-R)

This survey measures what you *actually do*, not what you are advised to do. How have you followed your diabetes treatment plan in the past 1-2 months?

	Never	Rarely	Sometimes	Usually	Always	
1. Check blood glucose with monitor	1	2	3	4	5	
2. Record blood glucose results	1	2	3	4	5	
3. If type 1: Check ketones when glucose level is high	1	2	3	4	5	Have type 2 diabetes
4. Take the correct dose of diabetes pills or insulin	1	2	3	4	5	Not taking diabetes pills or insulin
5. Take diabetes pills or insulin at the right time	1	2	3	4	5	Not taking diabetes pills or insulin
6. Eat the correct food portions	1	2	3	4	5	
7. Eat meals/snacks on time	1	2	3	4	5	
8. Keep food records	1	2	3	4	5	
9. Read food labels	1	2	3	4	5	
10. Treat low blood glucose with just the recommended amount of carbohydrate	1	2	3	4	5	Never had low blood glucose
11. Carry quick acting sugar to treat low blood glucose	1	2	3	4	5	
12. Come in for clinic appointments	1	2	3	4	5	
13. Wear a Medic Alert ID	1	2	3	4	5	
14. Exercise	1	2	3	4	5	
15. If on insulin: Adjust insulin dosage based on glucose values, food, and exercise	1	2	3	4	5	Not on insulin

(Weinger et.al, 2005).

Appendix C- *Self Care Inventory (SCI): Description and Psychometric Support*

Description

The Self-Care Inventory (SCI), a 13-item self-report measure, was developed by La Greca and colleagues (1988) to assess patients' perceptions of the degree to which they adhere to treatment recommendations for their diabetes self-care. The instrument was subsequently revised (La Greca, 1992) and now consists of 14 items. (See Appendix A.) On the SCI, selfcare is defined as the daily regimen tasks that the individual performs to manage diabetes. In conjunction with focus groups conducted with diabetes educators, items for the SCI were developed to reflect the main aspects of the treatment regimen for type 1 diabetes (e.g., Skyler & Cahill, 1981). The SCI includes items that focus on blood glucose testing and monitoring, insulin and food regulation, exercise, and emergency precautions (e.g., carrying sugar to treat reactions). However, many of the items also may be applicable to individuals with type 2 diabetes.

In clinical settings, the SCI is intended to be used in the context of an individual's prescription for diabetes care. Unlike measures that assess the frequency of certain adherence behaviors (e.g., frequency of glucose testing; number of doses of insulin administered) the SCI doesn't presume that all individuals have the same treatment prescription, nor is it based on an "ideal" regimen, as is the case with 24-hour recall interviews (Johnson, 1992). Rather, the SCI allows for the possibility of varying treatment regimens across individuals, but evaluates individuals' perceptions of how well they adhere to their treatment prescriptions.

Use of SCI with Children and Adolescents

The SCI has been used with ethnically diverse samples of children (Davis et al., 2001; Field, Delamater, Shaw, & La Greca, 1997; La Greca, Follansbee, & Skyler, 1990) and adolescents with Type 1 diabetes (e.g., La Greca, Swales, Klemp, Madigan, & Skyler, 1995); for preadolescent children, parents are the informants for their child's level of self-care (e.g., Davis et al., 2001). In all the above-cited studies, children and adolescents' with higher levels of selfcare on the SCI had significantly better metabolic control (i.e., lower HbA1c levels) than those with lower levels of self-care. Relationships between the SCI and other variables have contributed to the construct validity of the instrument. For example, Wysocki et al. (1996) studied 100 youth, ages 5 to 17 years, with type 1 diabetes. For each child, an index of self-care autonomy to maturity was calculated. They found poorer self-care adherence, as measured by the SCI, was related to increasing self-care autonomy relative to psychological maturity. La Greca et

al. (1995) found that adolescents' perceptions of self care, as assessed by the SCI, predicted their levels of metabolic control, independently from measures of anxiety and depression.

Reliabilities

Internal consistencies for the SCI items have been reported to be .80 or higher in several studies of children and adolescents (e.g., Davis et al., 2001; Delamater et al., 1997: La Greca et 3 al., 1995). Delamater et al. (1997) reported a test-retest reliability of .77, over a 2 – 4 week period, for overall adherence on the SCI in a sample of 103 adolescents.

Use with Adults with Type 1 Diabetes

The SCI has also been used with adults who have Type 1 diabetes (Greco et al., 1990; La Greca, 1992; Wick et al., 1991). (See Appendix B.) Although unpublished, these data suggest that the SCI has good reliability and validity with adults. For example, Greco et al. (1990) studied 44 adults with Type 1 diabetes (mean age = 31.5 years), comparing their self-care levels on the SCI with adherence indicators taken from two 24-hour recall interviews for diabetes care (Johnson, 1992). The SCI item reflecting glucose testing frequency correlated strongly with glucose testing frequency from the 24-hour recall interview ($r = .79$, $p < .001$); the eating frequency and exercise frequency items on the SCI also correlated with their counterparts from the interview (r's = .54 and .31, respectively, p's < .05). Moreover, the SCI items were significant predictors of metabolic control, accounting for 36% of the variance in HbA1c ($F = 4.43$, $p < .01$), in contrast to 28% of the variance accounted for by the 24-hour recall interview.

Scoring of the SCI

Based on the above findings, the brief manual for the SCI (La Greca, 1992; see Appendix B) recommends that all 14 items be administered (for clinical purposes), but that seven items be used in calculating overall adherence scores. These include items: 1, 2, 5, 6, 7, 8, and 13, as proper self-care in these areas should be linked with better diabetes management and control. Findings have shown that ketone testing (#3) is rarely reported by persons with diabetes; and the item on administering the correct dose of insulin (#4) is almost uniformly endorsed by persons with diabetes. Similarly, the items reflecting insulin adjustment (#6) and appointment-keeping (#11) are skewed so that most people report doing these things very often. These items may be of clinical interest, however.

Obtaining copies of the SCI

A copy of the SCI is contained in Appendix A. Because the instrument is copyrighted, it

References

Davis, C. L., Delamater, A. M., Shaw, K. H., La Greca, A. M., Eidson, M., Perez-Rodriguez, J., & Nemery, R. (2001). Brief report: Parenting styles, regimen adherence, and glycemic control in 4- to 10-year-old children with diabetes. Journal of Pediatric Psychology, 26, 123-129.

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Wysocki, W, Greco, G, Harris, MA, Bubb, J, and White, NH. (2001). Behavior therapy for families of adolescents with diabetes: Maintenance of treatment effects. Diabetes Care, 24, 441-446.

Wysocki T, Taylor A, Hough BS, Linscheid TR, Yeates KO, Naglieri JA. (1996). Deviation from developmentally appropriate self-care autonomy. Association with diabetes outcomes. Diabetes Care, 19, 119-125. 5

Appendix I

Copy of the Self Care Inventory (SCI)

Please rate each of the items according to HOW WELL YOU FOLLOWED YOUR PRESCRIBED REGIMEN FOR DIABETES CARE in the past month. Use the following scale:

1 = Never do it

2 = Sometimes follow recommendations; mostly not

3 = Follow recommendations about 50% of the time

4 = Usually do this as recommended, occasional lapses

5 = Always do this as recommended without fail

NA = Cannot rate this item/ Not applicable

In the past month, how well have you followed recommendations for:

1. Glucose testing 1 2 3 4 5 NA

2. Glucose recording 1 2 3 4 5 NA

3. Ketone testing 1 2 3 4 5 NA

4. Administering correct insulin dose 1 2 3 4 5 NA

5. Administering insulin at right time 1 2 3 4 5 NA

6. Adjusting insulin intake based on blood glucose values 1 2 3 4 5 NA

7. Eating the proper foods; sticking to meal plan 1 2 3 4 5 NA

8. Eating meals on time 1 2 3 4 5 NA

9. Eating regular snacks 1 2 3 4 5 NA

10. Carrying quick-acting sugar to treat reactions 1 2 3 4 5 NA

11. Coming in for appointments 1 2 3 4 5 NA

12. Wearing a medic alert ID 1 2 3 4 5 NA

13. Exercising regularly 1 2 3 4 5 NA

14. Exercising strenuously 1 2 3 4 5 NA

Appendix II

Scoring of the SCI and Use with Adults

Self-Care Inventory (SCI): Scoring and Use with Adults

The Self Care Inventory is intended to assess patient's perceptions of the degree to which they adhere to recommendations for diabetes care. The measure is administered to the patient, in the case of adolescents and adults. With preadolescents, it is recommended that parents complete the form.

Although it is recommended that all 14 items be administered, we find that certain items may not be useful for calculating overall adherence scores. Item #3 (ketone testing) is rarely reported by persons with diabetes. On the other hand, Item #4 (administer correct dose of insulin) is almost uniformly endorsed by persons with diabetes. Similarly, items #6 (adjust insulin) and #11 (come in for appointments) are skewed so that most people report doing these things often. These items may be of clinical interest, however.

Diabetic management with GLP1-RA Ozempic and diabetic education

When calculating an overall adherence score, we recommend using the average of items: 1, 2, 5, 6, 7, 8, & 13. That is because proper self-care in these areas should be linked with better metabolic control.

We are working with several conceptual schemes for grouping the items into coherent factors. Based on our current view, we'd recommend the following groupings (means of each group of items):

Blood Glucose Regulation: Items 1, 2, and 6

Insulin and Food Regulation: Items 5, 7, and 8

Exercise: Items 13 and 14

Emergency Precautions: Items 10 and 12

Attached are means and correlations among items that were taken from a study of young adults with diabetes.

Means (SD) For Self-Care Items

Item Mean Median Skew

1. Glucose Testing (1-5) 3.39 (.15) 4.00 -.44

2. Glucose Recording (1-5) 2.91 (.17) 3.00 .13

3. Ketone Testing (1-5) 1.93 (.15) 1.00 1.18

4. Administer correct dose (2-5) 4.70 (.06) 5.00 -2.20

5. Administer insulin/right time (2-5) 4.22 (.08) 4.00 -.56

6. Adjust insulin based on blood (1-5) 4.05 (.13) 4.00 -1.35

7. Eat proper food/stick to diet (1-5) 3.47 (.12) 4.00 -.72

8. Eat meals on time (1-5) 3.57 (.12) 4.00 -.62

9. Eat regular snacks (1-5) 3.23 (.15) 3.00 -.19

10. Carry sugar/reactions (1-5) 3.54 (.18) 4.00 -.58

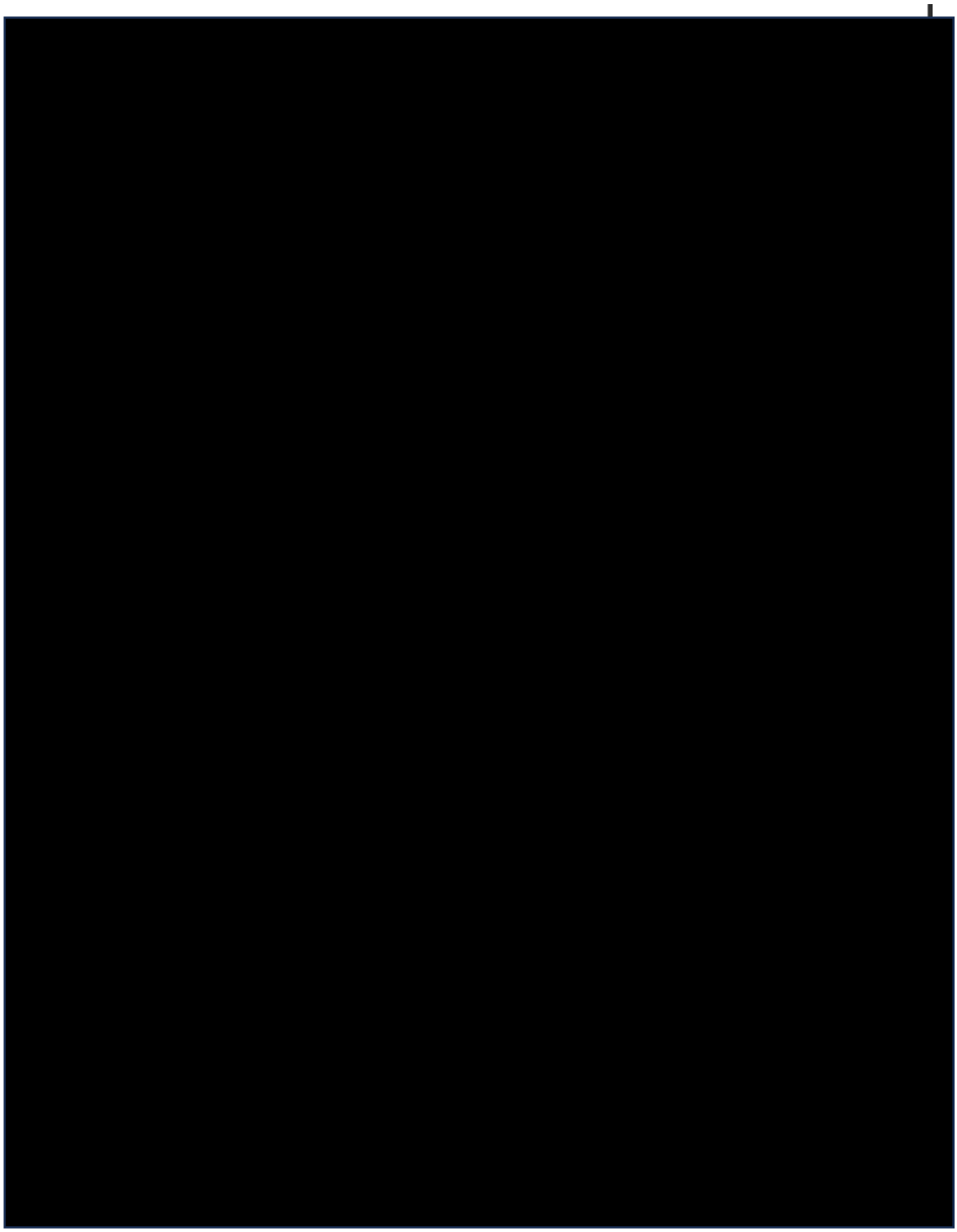
11. Come in for appts. (1-5) 4.15 (.14) 5.00 -1.37

12. Wear medic alert ID (1-5) 2.63 (.21) 1.00 .38

Diabetic management with GLP1-RA Ozempic and diabetic education

13. Exercise regularly (1-5) 3.19 (.15) 3.00 -.33 Based on a sample of 71 - 80 adults with IDDM in Miami, FL Numbers in parentheses represent the range of scores.

Appendix D- **The Iowa Model Revised**



Appendix E-**Permission to Use Iowa Model**

[redacted]

Subject: Permission to use Implementation Strategies for EBP

You have permission, as requested today, to review and/or use the Implementation Strategies for EBP (Evidence-Based Practice Implementation Guide ©). Click the link below to open.

Implementation Strategies for Evidence-Based Practice

Copyright is retained by University of Iowa Hospitals and Clinics. **Permission is not granted for placing on the internet.**

Reference: Cullen, L., & Adams, S. L. (2012). Planning for implementation of evidence-based practice. *Journal of Nursing Administration, 42*(4), 222-230. doi:10.1097/NNA.0b013e31824ccd0a

In written material, please include the following statement:
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[redacted]

with questions.

Appendix F-**Facility Support Letter**

Generations Family Health Center – Jennifer Spencer, Norwich Office Manager

Date 6/10/23

This letter serves as confirmation of organizational support for Katrina Sivo-Souza to perform their DNP project titled, Diabetic Management with GLP1-RA Ozempic and Diabetic Education. This project will evaluate type 2 diabetics who are on Ozempic for improvement to glycemic control and education through means of diabetic education. We commit to supporting the implementation of this project within Generations Family Health Center. We commit to providing on-site guidance, and appropriate resources (as applicable) for the project initiatives, including securing any needed approvals for data collection and storage in accordance with our local site requirements and institutional policies and procedures. Jennifer Spencer will serve as the site organizational sponsor and is qualified to serve in this role due to role in site management as well as leadership.

Sincerely,

[redacted]

Jennifer Spencer, Norwich Office Manager

Generations Family Health Center – Dr Casey, Regional Medical Director

Date 6/10/23

This letter serves as confirmation of organizational support for Katrina Sivo-Souza to perform their DNP project titled, Diabetic Management with GLP1-RA Ozempic and Diabetic Education. This project will evaluate type 2 diabetics who are on Ozempic for improvement to glycemic control and education through means of diabetic education. We commit to supporting the implementation of this project within Generations Family Health Center. We commit to providing on-site guidance, and appropriate resources (as applicable) for the project initiatives, including securing any needed approvals for data collection and storage in accordance with our local site requirements and institutional policies and procedures. Dr Casey will serve as the site organizational sponsor and is qualified to serve in this role due to role in site management as well as leadership.

Sincerely,

[redacted]

Dr. Colleen Casey D.O. RMD

Appendix G-**Participant Consent**

Consent to Participate in a Project and Receive Communication

You are invited to participate in a project titled **"Diabetic Management with GLP1-RA Ozempic and Diabetic Education."**

You are being asked to take part in a 12-week project. Before you decide to participate in this project, it is important that you understand you may voluntarily participate in the project or terminate your involvement at any time if you choose within the 12 weeks.

The project aim is to improve diabetic knowledge as well as glycemic control in the diabetic population utilizing e-mail methods and phone calls once every two weeks regarding diabetic education and lifestyle modifications. Emails will be sent directly to your personal e-mail and phone calls will be made to your desired number.

I understand that emails and phone calls will be in a secure format of communication. I also understand that identical health information to other sensitive or confidential information may be contained, misdirected, or disclosed while using forms of communication.

There are no identified risks associated with this project. I hope that the information obtained from this project will help improve diabetic management and treatment.

Your responses to this project's questions will remain anonymous. Participants for the project will be signed a numeric identifier for all project documentation. This will help maintain privacy and confidentiality.

Do you have any questions at any time during this project or regarding this project, you may contact the project investigator at KatrinaSivoSouzaNP@gmail.com

By signing below, I consent to participate in the project voluntarily and receive phone calls as well as emails during the 12 weeks.

Patient Signature: _____ Date:_____

Verbal consent attained over the phone: _____

Appendix H-**Permission to use Self Care Inventory - Revised**

Sivo-Souza, Katrina Donna

[redacted]

Dear Dr. La Greca,

Thank you for your email!

Katrina Sivo-Souza FNP-BC, PMHNP

On Wed, Jul 19, 2023 at 11:50 AM La Greca, Annette M., Ph.D. <[redacted] wrote:

> Dear Katina Sivo-Souza:
>
> Thank you for the interest in the SCI-R. The measure is copyrighted.
>
> You have indicated that you will not publish any translations, alterations, or versions of the measure without my express permission or collaboration. Thus, you may use the measure for your current research.
>
> Best wishes,
>
> Annette M. La Greca, PhD
>
> Distinguished Professor of Psychology and Pediatrics
>
> Cooper Fellow; Provost Scholar
>
> University of Miami
>
> [redacted]

Appendix I-**CITI Training Certificate**

CITI PROGRAM

Completion Date 18-May-2023
Expiration Date 18-May-2026
Record ID 55972740

This is to certify that:

Katrina Sivo-Souza

Not valid for renewal of certification through CME.

Has completed the following CITI Program course:

Biomedical Research - Basic/Refresher
(Curriculum Group)
Biomedical & Health Science Researchers
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Liberty University

CITI
Collaborative Institutional Training Initiative
101 NE 3rd Avenue, Suite 320
Fort Lauderdale, FL 33301 US
www.citiprogram.org

Verify at www.citiprogram.org/verify/?wb8773faf-e41f-4ecf-b878-0eda70c6c45c-55972740

Appendix J – **12 Educational Emails**

What is Diabetes

- Diabetes is a chronic (long-lasting) health condition that disrupts how your body transitions food into energy.
- Your body breaks down most of the food you consume into sugar (glucose) and releases it into your bloodstream. When your blood sugar goes up, it signals your pancreas to release insulin. Insulin acts like a key to let the blood sugar into your body's cells for use as energy.
- With diabetes, your body doesn't make enough insulin or can't use it as well as it should. When there isn't enough insulin or cells stop responding to insulin, too much blood sugar stays in your bloodstream. Over time, that can cause serious health problems, such as heart disease, vision loss, and kidney disease.
  (CDC, 2023)

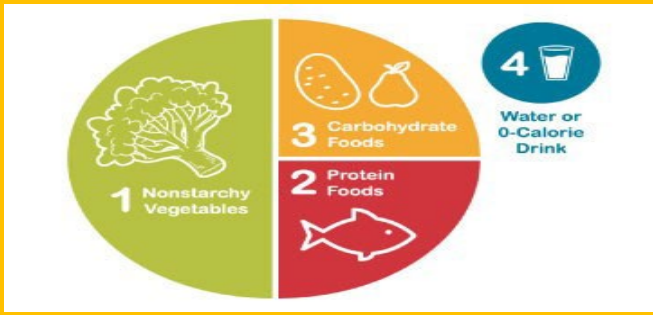
- Healthier lifestyles alterations to help manage Diabetes are

• losing weight
• eating healthier foods
• being active

Diabetes Portion Control

- Knowing what to eat can be confusing —harder to manage when life gets hectic and you're trying to maintain a healthy lifestyle.
- Regardless of what cuisine you prefer, here's what all healthy eating plans have in common.
  - •Fruits and vegetables
  - •Lean meats and plant -based sources of protein
  - •Less added sugar
  - •Less processed foods

•Trying to keep it simple, try the Diabetes Plate Method. This helps to create a stress-free option to creating portion control.



- nine-inch plate
- fill half your plate with non -starchy vegetables
- one quarter of the plate of protein foods
- last quarter of the plate with carbohydrate foods
- glass of water or another zero - calorie drink

Non-Starchy Vegetable

•Amaranth or Chinese spinach
•Artichoke
•Artichoke hearts
•Asparagus
•Baby corn
•Bamboo shoots
•Beans (green, wax, Italian)
•Bean sprouts
•Beets
•Brussels sprouts
•Broccoli
•Cabbage (green, bok choy, Chinese)
•Carrots
•Cauliflower
•Celery
•Chayote
•Cucumber
•Daikon
•Eggplant
•Greens (collard, kale, mustard, turnip)
•Hearts of palm
•Jicama
•Kohlrabi
•Leeks
•Mushrooms
•Okra
•Onions
•Pea pods
•Peppers
•Radishes
•Rutabaga
•Salad greens (chicory, endive, escarole, lettuce, romaine, spinach, arugula, radicchio, watercress)
•Sprouts
•Squash (cushaw, summer, crookneck, spaghetti, zucchini)
•Sugar snap peas
•Swiss chard
•Tomato
•Turnips
•Water chestnuts
•Yard-long beans

Healthy Fats

•Avocado
•Canola oil
•Nuts like almonds, cashews, pecans and peanuts
•Olive oil and olives (look for low/reduced sodium)
•Peanut butter and peanut oil
•Safflower Oil
•Oily fish (salmon, sardines, herring, mackerel, tuna)
•Walnuts
•Flaxseeds and flaxseed oil
•Canola Oil
•Chia seeds
•Tofu
•Walnuts
•Flaxseed and flaxseed oil
•Canola oil
•Eggs
•Sunflower seeds
•Peanut butter

Diabetic management with GLP1-RA Ozempic and diabetic education

Reading Food Labels

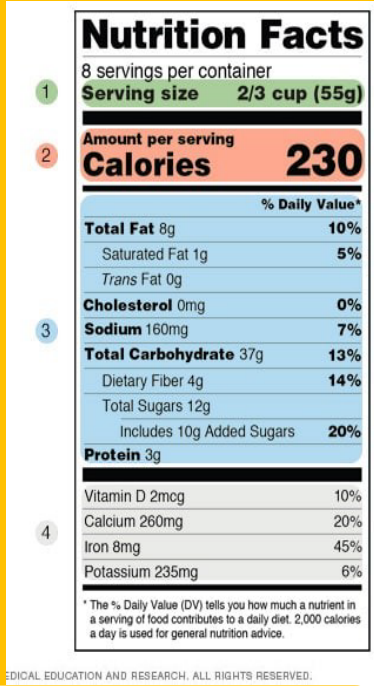
Reading food labels can help you make better choices.

- Watch for heart healthy ingredient such as whole wheat flour, soy, oats, olive oil, canola oil, peanut oil, nuts and seeds
- **Avoid unhealthy ingredients:** excessive salt, added sugars, saturated fats, and/or hydrogenated oil
- **Total Carbohydrates:** evaluate the grams of total carbohydrates to include sugar, complex carbohydrates, and fiber. Focusing on sugar only allows for you to miss foods which may possess added sugar or refined carbohydrates.
- **Fiber:** Look for foods with 3+ grams of fiber
- **Sugar free does not mean Carbohydrate free**
- **No Sugar Added does not mean no Carbohydrates**
- **Fat-Free can have higher Carbohydrates, check your labels!**
- **Aim for healthier fats that were previously discussed**
- **Free Food is one with fewer than 20 calories per a serving and less than 5 grams of carbohydrates per a serving**
- **Pay attention to the serving size! If you consume more than intended then the calories will also rise, as well as carbohydrates and everything else on the label.**
- **Stay within your calorie goals**

- **Calories** = unit of energy, this is what your body consumes and utilizes for body function

- **Total Carbohydrates** = Sugar, starch, and fiber
  - **Added sugar** – not what occurred naturally
  - **Fiber** – part of plant foods that is not digested, on average healthy adults need between 25-35 grams daily
  - **Sugar alcohols** – aka sugar substitutes, (Sorbitol, Xylitol and/or mannitol, these sugar substitutes have few calories but do not ensure less carbohydrates
  - **Fats** – avoid high saturated fats or trans fats, consume more monounsaturated and polyunsaturated fats.
  - **Sodium** – 2300 mg or less per day is general recommendation, However, if you have cardiac concerns speak with your provider as they may recommend less.

Calories	**Total, saturated and *trans* fat**	**Sodium**	**Sugar**
•**Calories free:** less than 5 calories per serving •**Low calorie:** 40 calories or less per serving	•**Fat free:** less than 0.5 grams of fat •**Saturated fat free:** less than 0.5 grams of saturated fat •***Trans* fat free:** less than 0.5 grams of *trans* fat •than the regular version •**Low fat:** 3 grams or less of total fat •**Low saturated fat:** 1 gram or less of saturated fat •**Reduced fat or less fat:** at least 25% less fat	•**Sodium free or salt free:** less than 5 mg of sodium per serving •**Very low sodium:** 35 mg of sodium or less •**Low sodium:** 140 mg of sodium or less •**Reduced sodium or less sodium:** at least 25% less sodium than the regular version	•**Sugar free:** less than 0.5 grams of sugar per serving •**Reduced sugar:** at least 25% less sugar per serving than the regular version •**No sugar added or without added sugars:** no sugar or sugar-containing ingredient is added during processing
Fiber •**High fiber:** 5 grams or more of fiber per serving •**Good source of fiber:** 2.5 to 4.9 grams of fiber per serving			



Exercise and Diabetes

- Patients with diabetes can benefit from exercise.
  - lower your stress levels
  - lower your blood sugar level
  - may even reduce your insulin requirements.

Recommendations

- 150 minutes of aerobic exercise weekly
- Avoid missing more than 2 days of exercise in a row

Forms of Exercise

- **Walking** – 30 minutes of brisk walking, five times each week
- **Tai Chi** - slow, smooth body movements to relax the mind and body. Research reveals improvements to blood sugar control
- **Yoga** – fluid movements that build flexibility, strength, and balance. This form of exercise lowers stress and improves nerve function, leading to an enhancement to mental health and wellness. Yoga has been shown to improve blood glucose levels due to improved muscle mass.
- **Dancing –** The mental work to remember to steps boosts brain power and improves memory. Dancing helps diabetics increase physical activity, promote weight loss, improve flexibility, lowers blood sugar and reduces stress. In 30 minutes a 150 -pound adult can burn up to 150 calories
- **Swimming** – allows for stretching and relaxation of muscles while avoiding pressure applied to joints. Recommendation is to swimming 3 times weekly for at least 10 minutes while gradually increasing the length of the workout

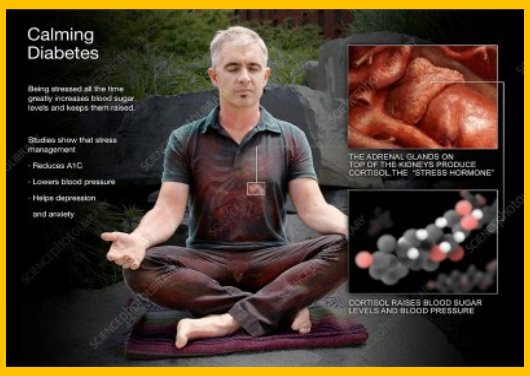
Diabetic management with GLP1-RA Ozempic and diabetic education

Diabetes and Stress

- Stressed can cause your blood sugar levels to go up.
- Anxiety can lead to poor management of your diabetes.
  - You may forget to exercise, eat right, or take your medicines.

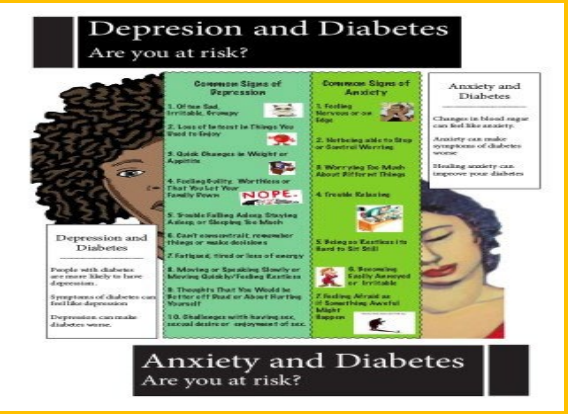
Diabetes and Depression

- Depression can affect the way, and how well you care for yourself, including your diabetic management.
- Diabetics are 2-3 tikmes more likely to develop depression.
- Only 25-50% of people with diabetes and depression attain a diagnosis and treatment.
- Symptoms of depression
  - Feeling sad
  - Lose of interest in desired activities
  - Increased or decrease appetite
  - Sleeping too much or not enough
  - Lack of concentration
  - Fatigued
  - Feeling hopeless, irritable, anxious, and/or guilty
  - Digestive symptoms



Diabetes and Stress/Anxiety

- Stressed indivudals often do not take care of themselves as well as needed.
- Stress can raise Blood sugar levels
- Diabetics are 20% more likely to have anxiety at some time in their life.
- Often Therapy is more effective than medications
- Ways to help anxiety:
  - Stay active, the calming result of exercise can last hours
  - Relaxation exercises like meditation or yoga
  - Call/test a friend
  - Create time for yourself
  - Go outside, and/or read
  - Limit alcohol, caffeine, eat a healthy diet, and get enough sleep/



- If under stress, the body releases hormones that can cause blood glucose levels to increase.
- If you're experiencing stress or feeling threatened, your body exhibits a fight-or-flight response.
- During this response, your body releases adrenaline and cortisol into your bloodstream, and your respiratory rates increase.
- This can increase blood glucose levels

Diabetic management with GLP1-RA Ozempic and diabetic education

Diabetes Food List

What Can I Eat?

DO EAT:

Protein

Eggs (omega3 enhanced)

Fish

- bass - bluefish
- cod - drum
- eel - flatfish
- grouper - haddock
- halibut - herring
- mackerel - monkfish
- mullet - N. pike
- orange roughy
- perch - red snapper
- rockfish - salmon
- scrod - striped bass
- sunfish - tilapia
- tuna - turbot
- walleye
- *any other wild fish*

Lean Beef

- chuck steak
- flank steak
- extra lean hamburger
- lean veal
- london broil
- top sirloin
- *any other lean cut*

Lean Pork

- lean cuts - pork chops
- pork loin

Lean Poultry

- chicken breast
- hen breasts
- turkey breasts

Organ Meat

- liver (beef, lamb, pork, chicken)
- marrow (beef, lamb, pork)
- "sweetbreads" (beef, lamb, pork)
- tongue (beef, lamb, pork)

Other Meat

- alligator - bear
- bison - caribou
- elk - emu
- goat - goose
- kangaroo - ostrich
- pheasant - quail
- rabbit - rattlesnake
- reindeer - squab
- turtle - venison
- wild boar - wild turkey

Shellfish

- abalone - clams
- crab - crayfish
- lobster - mussels
- oysters - scallops
- shrimp

Fats

- avocado - almonds
- brazil nuts
- cashews - chestnuts
- coconut - coconut oil
- flaxseed oil (refrigerated)
- macadamia nuts
- olive oil (extra virgin, cold pressed
- pecans - pine nuts
- pistachios
- pumpkin seeds
- sesame seeds
- sunflower seeds
- walnuts

Carbohydrates

Vegetables

- artichoke - asparagus
- beet greens
- beets - bell pepper
- broccoli
- brussels sprouts
- cabbage - carrots
- cauliflower - celery
- collards - cucumber
- dandelion - eggplant
- endive - green onion
- kale - kohlrab
- lettuce - mushroom
- mustard greens
- onions - parsley
- parsnip - peppers
- pumpkin - purslane
- radish - rutabaga
- seaweed - seaweed
- spinach - squash
- swiss chard - tomatillos
- tomato - turnips
- turnip greens
- watercress

Fruits

- apple - apricot
- banana - blackberry
- boysenberry
- cantaloupe - carambola
- cassava melon
- cherimoya - cherries
- cranberry - figs
- gooseberry - grapefruit
- grapes - guava
- honeydew - kiwi
- lemon - lime
- lychee - mango
- nectarine - orange
- papaya
- passion fruit
- peaches - pears
- persimmon - pineapple
- plums
- pomegranate
- raspberry - rhubarb
- star fruit - star fruit
- strawberry - tangerine
- watermelon

EAT IN MODERATION:

Beverages

- Diet sodas (if you must)
- Dry Wine
- Spirits (tequilla, gin)

Carbohydrates

- Dried fruits

DON'T EAT:

Dairy

- butter - cheese
- creamer - ice cream
- milk - yogurt

Grains

- barley - corn
- maize - millet
- oats - rye
- rice - sorghum
- wheat - wild rice

Grain-like Seeds

- amaranth
- buckwheat
- quinoa

High Glycemic Vegetables

- cassava root
- manioc - potatoes
- tapioca

Legumes

- all beans
- black-eyed peas
- cashews - chickpeas
- lentils - miso
- peas
- peanuts/peanut butter
- soybean and soy products

Sugar

- candy - fruit drinks
- honey - soft drink

Diabetes and Food

Healthy eating is a foundation of healthy living — with or without diabetes. However, if you have diabetes, you need to know how foods affect your blood sugar levels. It may not only be the type of food you eat, but also how much you eat and the combinations of food types you eat.

What to do:

- **Learn about carbohydrate counting and portion sizes.**
  - many diabetes management plans involve learning how to count carbohydrates. Carbohydrates often have the biggest impact on your blood sugar levels. Those taking mealtime insulin, it's important to know the amount of carbohydrates in your food, so you get the proper insulin dose.
  - Learn what portion size is appropriate for each food type.
  - Simplify your meal planning by writing down portions for foods you eat often.
  - Use measuring cups or a scale to ensure proper portion size and an accurate carbohydrate count.
- **Make every meal well balanced.**
  - Plan for every meal to have a good combination of starches, fruits and vegetables, proteins, and fats.
  - Pay attention to the types of carbohydrates you choose.
  - Some carbohydrates, such as fruits, vegetables and whole grains, are better for you than others.
  - These foods are low in carbohydrates and have fiber that helps keep your blood sugar levels more stable.
- **Coordinate your meals and medications.**
  - Too little food in proportion to your diabetes medications — especially insulin — may result in dangerously low blood sugar (hypoglycemia).
  - Too much food may cause your blood sugar level to climb too high (hyperglycemia).
- **Avoid sugar -sweetened beverages**
  - Sugar-sweetened beverages tend to be high in calories and offer little nutrition.
  - They also cause blood sugar to rise quickly
  - The exception is if you are experiencing a low blood sugar level. Sugar-sweetened beverages, such as soda, juice and sports drinks can be used as an effective treatment for quickly raising blood sugar that is too low.

Diabetic management with GLP1-RA Ozempic and diabetic education

Diabetes and Exercise

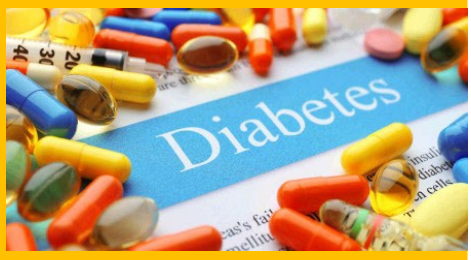
Physical activity is an important part of your diabetes management plan. When you exercise, your muscles use sugar (glucose) for energy. Regular physical activity aids your body to use insulin more efficiently.
These factors work together to lower your blood sugar level. The more strenuous your workout, the longer the effect lasts. However, even light activities — such as housework, gardening, or being on your feet for extended periods — can improve your blood sugar.

What to do:

- **Talk to your doctor about an exercise plan.**
  - Most adults should get at least 150 minutes a week of moderate aerobic activity. Aim for about 30 minutes of moderate aerobic activity a day on most days of the week.
  - If you've been inactive for a long time, you may want to start slow and increase your time as tolerated.
- **Keep an exercise schedule.**
  - Think about the best time of day for you to exercise so that your workout routine is coordinated with your meal and medication schedules.
- **Know your numbers.**
  - Confirm what blood sugar levels are appropriate for you before you begin exercise.
- **Check your blood sugar level.**
  - Check your blood sugar level before, during and after exercise, especially if you take insulin or medications that lower blood sugar.
  - Exercise can lower your blood sugar levels even up to a day later, especially if the activity is new to you, or if you're exercising at a more intense level.
  - Be aware of warning signs of low blood sugar, such as feeling shaky, weak, tired, hungry, lightheaded, irritable, anxious or confused.
- **Stay hydrated.**
  - Drink plenty of water or other fluids while exercising because dehydration can affect blood sugar levels.
- **Be prepared.**
  - Have a small snack or glucose tablets with you during exercise in case your blood sugar level drops too low.
  - Wear a medical identification bracelet.

Diabetes and Medication

Insulin and other diabetes medications are designed to lower your blood sugar levels when diet and exercise alone aren't sufficient for managing diabetes. But the effectiveness of these medications depends on the timing and size of the dose. Other medications you take for other conditions can also affect your blood sugar levels.



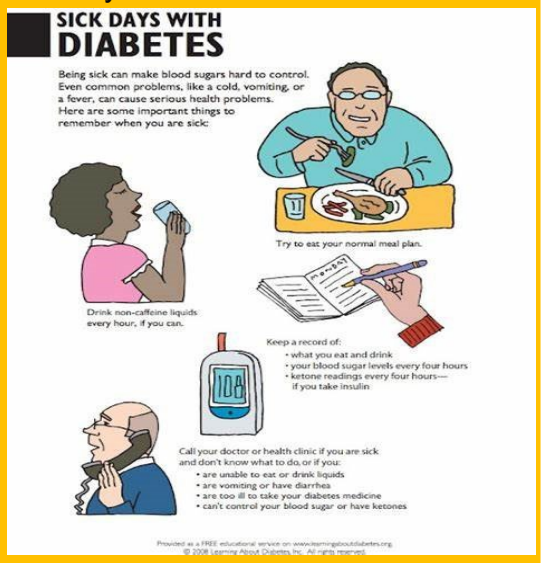
What to do:

- **Store all medications properly.**
  - Insulin that's improperly stored or past its expiration date may not be effective.
  - Insulin is especially sensitive to extremes in temperature.
  - Ozempic requires refrigeration to maintain its potency
  - All Medications should be used within their labeled expiration window.
- **Report problems to your doctor.**
  - If your diabetes medications cause your blood sugar level to drop too low or if it's consistently too high, the dosage or timing may need to be adjusted.
- **Be cautious with new medications .**
  - If you're considering an over-the-counter medication or your doctor prescribes a new drug to treat another condition, ask your doctor or pharmacist if the medication may affect your blood sugar levels.
  - Sometimes an alternate medication may be recommended.

Diabetic management with GLP1-RA Ozempic and diabetic education

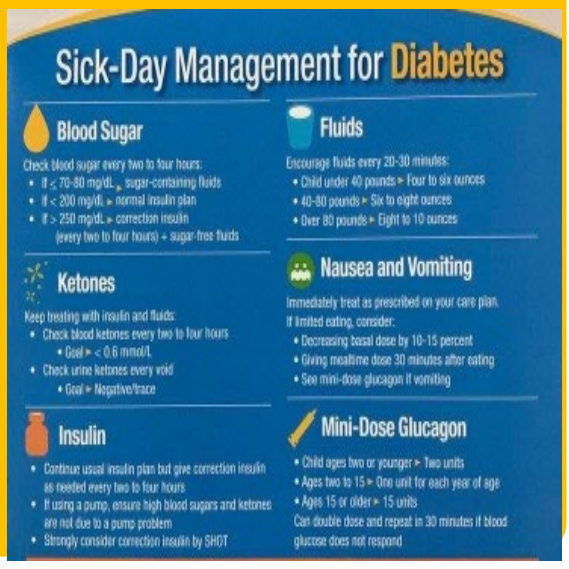
Diabetes and Illness

When you're sick, your body produces stress-related hormones that help your body fight the illness, howev er they can also raise your blood sugar level. Alterations in your appetite and normal activity levels can also complicate diabetes management.



What to do:

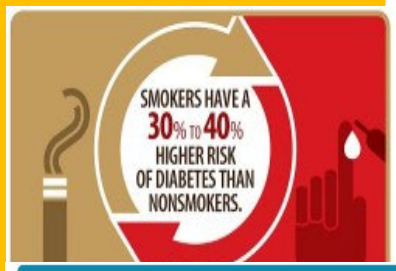
- **Plan ahead.**
  - Create a sick-day plan.
  - Include instructions on which medications to take, how often to measure your blood sugar and urine ketone levels (if applicable), how to adjust your medication dosages, and when to call your doctor.
- **Continue to take your diabetes medication.**
  - If you're unable to eat because of nausea or vomiting, contact your provider.
  - You may need to adjust your insulin dose or temporarily reduce or withhold short-acting insulin or diabetes medication because of a risk of hypoglycemia.
  - Do not stop your long-acting insulin.
  - During times of illness, it is important to monitor your blood sugars frequently, you may be instructed to check your urine for the presence of ketones.
- **Stick to your diabetes meal plan.**
  - Eating as usual will help you control your blood sugar levels.
  - Keep a supply of foods that are easy on your stomach, such as gelatin, crackers, soups and applesauce.
  - Drink lots of water or other fluids that don't add calories to ensure hydration.



Diabetes Alcohol and Smoking

The liver releases stored sugar to counteract falling blood sugar levels. However, if your liver is busy metabolizing alcohol, your blood sugar level may not get the boost it needs. Alcohol can create low blood sugar shortly after you drink, and last as long as 24 hours afterward.

Nicotine increases your blood sugar levels and makes diabetes harder to handle. Those with diabetes who smoke often need larger doses of medications to keep their blood sugar close to target levels.



What to do:

- **Get your Providers OK to Consume Alcohol.**
  - Alcohol can aggravate diabetes complications, such as nerve damage and eye disease. However, if your diabetes is under control an occasional alcoholic drink is fine.
  - Moderate alcohol consumption is no more than one drink a day for women of any age and men over 65 years old and two drinks a day for men under 65.
  - One drink equals a 12 -ounce beer, 5 ounces of wine or 1.5 ounces of distilled spirits.
- **Don't drink alcoholic beverages on an empty stomach.**
  - Be sure to eat before you drink, or drink with a meal to prevent low blood sugar.
- **Choose your drinks carefully.**
  - Light beer and dry wines have fewer calories and carbohydrates than other alcoholic drinks.
  - If you prefer mixed drinks, sugar -free mixers — such as diet soda, diet tonic, club soda or seltzer — won't raise your blood sugar.
- **Tally your calories.**
  - Remember to include the calories from any alcohol you drink in your daily calorie count.
  - Check your blood sugar level before bed, alcohol can lower blood sugar levels long after you have had your last drink.
  - Check your blood sugar level before you go to sleep.
  - If your blood sugars is not higher than 100, have a snack before bed to counter a drop in your blood sugar level.
- **Nicotine and Diabetes.**
  - •Nicotine changes cells so they don't respond to insulin, which increases blood sugar levels.
  - •Chemicals in cigarettes harm cells in your body and cause inflammation, which encourages cells to stop responding to insulin.
  - •Smokers have a higher risk of belly fat, which increases the risk for type 2 diabetes even if they aren't overweight.
  - •Smokers are 30% to 40% more likely to attain a diagnosis of type 2 diabetes, and the more you smoke, the higher your risk.

Diabetes and Sleep

Too little sleep can negatively affect every area of your management, including how much you eat, what you choose to eat, how you respond to insulin, and your mental health. Proper rest is important for your diabetes management, it can put you in a better mood and give you more energy.

If you get less than 7 hours of sleep per night regularly

- your diabetes will be harder to manage.
- Too little sleep can:
  - •Increase insulin resistance.
  - •Lead to hunger the next day and reduce how full you feel after eating.
  - •Make you more likely to reach for junk foods
  - •Make it harder to lose weight.
  - •Raise blood pressure and seriously increase the risk of a heart attack.
  - •Make your immune system less able to fight infections.
  - •Increase your risk of depression and anxiety.

What to do:

- Wake up and go to bed at around the same time every day, even on weekends
- Keep your bedroom dark, quiet, relaxing, and cool. Recommendation of a temperature of 65 degrees for your best rest.

•Remove electronic devices such as TVs, computers, and smartphones from the bedroom.
•Get some physical activity during the day.
•Mentally unwind and relax before bedtime.
•Have a routine that gets you ready for bed, like taking a shower, reading, or writing in a journal.
•Get in bed only when you're tired.

Avoid:

•Afternoon and evening caffeine. It can affect your body for up to 8 hours.
•Alcohol in the evening. It can affect how you breathe when you sleep. It can also wake you up and affect your sleep quality.
•Large meals late at night. Eating late can cause indigestion and higher blood sugar levels overnight.
•Naps after 3 p.m.
•Nicotine. It acts like caffeine.

Appendix K- **IRB Approval**

Date: 8-1-2023

IRB #: IRB-FY23-24-102
Title: Diabetic Management with GLP1-RA Ozempic and Diabetic Education
Creation Date: 7-22-2023
End Date:
Status: Approved
Principal Investigator: Katrina Sivo-Souza
Review Board: Research Ethics Office
Sponsor:

Study History

Submission Type	Review Type	Decision
Initial	Exempt	No Human Subjects Research

Key Study Contacts

[redacted]

Appendix L – **Timeline**

Step 1: Review Scholarly Project Process, Sequence, and Timelines	05/2023
Step 2: Complete CITI Training	05/18/2023
Step 3: Develop the first draft of the proposal and submit it to chair for review	06/2023
Step 4: Complete the final draft of the proposal	07/2023
Step 5: Defend Scholarly Project Proposal	07/2023
Step 6: IRB approval for the proposed project	08/01/2023
Step 7: Initiate scholarly project	08/02/2023
Step 8: Complete literature review/level of evidence/summary matrix	06/2023
Step 9: Complete the thematic data analysis matrix	06/2023
Step 10: Complete the initial draft (without discussion and conclusions)	08/2023
Step 11: Update and reconfirm timeline	09/2023
Step 12: Submit the completed first draft with discussion and conclusions	09/24/23
Step 13: Submit to Editor (one-week turnaround)	11/2023
Step 14: Request final defense appointment	12/2023
Step 15: Submit the final PowerPoint for the defense	12/2023
Step 16: Final Defense	01/2023
Step 17: Submit to Scholar's Crossing	01/2023

Diabetic management with GLP1-RA Ozempic and diabetic education

Appendix M – **Data Analysis**

Participant number	consent	BMI (start)	weight (start)	A1C (start)	survey (start)	BMI (EOS)	weight (EOS)	A1C (EOS)	survey (EOS)
1	yes	50.8	256	7.8	43	50	251	7.4	52
2	yes	30.1	210	8.3	33	30.7	208	6.2	50
3	yes	36.4	188	10.6	42	36	187	10	53
4	yes	37.8	242	9.2	38	35.7	242	5.8	52
5	yes	33.2	236	9.5	31	32.6	230	7.4	49
6	yes	35.5	260	12.9	31	35.1	257	6.1	48
7	yes	40	267	7.5	30	40	266	7.4	47
8	yes	30.7	259	7.3	39	30.5	255	7	47
9	yes	38	250*	8.9	31	27.2	207*	8.4	47
10	yes	46	281	7.3	47	45.3	272	6.5	59
11	yes	31.1	159	7.3	40	29.1	149	7.6	51
12	yes	43.3	256	7.2	34	45.1	267	6.8	48
13	yes	30.1	192*	9.3	35	24.5	156*	9.1	44
14	yes	34.1	211	7.1	38	34.2	212	6.2	46
15	yes	42.8	230	8.8	37	41.6	224	7.7	55
16	yes	35	251	7.2	41	34.4	247	6.6	54
17	yes	55	279	7.9	28	52.8	279	6.8	52
18	yes	36.6	219	8.1	33	35.3	212	7.5	47
19	yes	39	264	7.1	35	35.4	261	6.6	50
	total of participating patients	**725.5**	**4068**	**159.3**	**686**	**695.5**	**4019**	**137.1**	**951**
	average of participating patients	**38.14**	**237.7**	**8.38**	**36.11**	**36.61**	**230.63**	**7.2**	**50.1**
						2.73% improvement	**2.84% improvement**	**14% improvement**	**5.1% improvement**
					P Value	**0.022**	**0.031**	**0.0054**	**0.0001**

*** Patients with significant weight loss; these patients had multiple dose increases of Ozempic/Semaglutide during the 12-week study**

	The participants listed below did not finish the study							
20	yes	31.3	221	9.3	39	29.7	210	8.2
21	yes	35.7	224	8.1	29	35.5	223	6.8
22	yes	49.9	286	8.8	39	49.2	282	6.9
23	yes	43.2	276	7.1	45	44	276	6.6
24	yes	46	362	11	32	/	/	/
25	yes	32.6	168	7.5	35	31.1	159	6.5