Health Coaching to Improve Glycemic Control Among Patients with Type 2 Diabetes

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This project is in partial fulfillment of the degree requirements for the Doctor of Nursing Practice, Touro University, Nevada

Project Overview

- **Project Aim-** To enhance glycemic control among patients with Type 2 Diabetes Mellitus (T2DM).
- **Projects Key Achievements**
- Established a health coaching protocol
- Improved self-efficacy, motivation, and knowledge of patients.
- Enhanced fasting blood glucose control

Clinical-Leadership Implications

- Improved Health Outcomes
- Enhanced Provider-Patient Engagement
- Scalability and Sustainability

Problem and Background

Problem Addressed

- T2DM as top-most cause of mortality (CDC, 2022) .
- T2DM Complications and Poor Glycemic Control
- Inadequate Patient Education by providers on Lifestyle Modification

- **Pertinent Background Information**
  - ADA Guidelines and Glycemic Control Targets (ADA, 2022)
  - Contributing Factors to T2DM Prevalence
  - Prevalence and Growth of Diabetes in the US (Pinkhasova et al., 2021).
  - Self-Management and Education

Literature Review

Main Themes Supporting the Project

- Health Coaching as an Effective Intervention
- Lifestyle Modifications (Physical Activity and Nutrition)
- Glycemic Control as a Key Outcome
- Provider Knowledge and Patient Outcomes
- Relevance to ADA Guidelines and Standards (ElSayed et al., 2023b)

Literature Review Cont.’

National Guidelines and Standards Justifying the Project

- ADA Standards of Medical Care in Diabetes (ADA, 2022)
- CDC's National Diabetes Statistics Report (CDC, 2022).
- Healthcare Effectiveness Data and Information Set (HEDIS) Measures
- ADA's Guidelines on Prevention or Delay of Type 2 Diabetes and Associated Comorbidities (ElSayed et al., 2023b).
- National Diabetes Education Program (NDEP) Resources

Project Aims and Objectives

Project Aims

- Determine the effectiveness of health coaching by providers caring for T2DM patients.
- Enhance provider knowledge to educate patients and help them meet glycemic control.

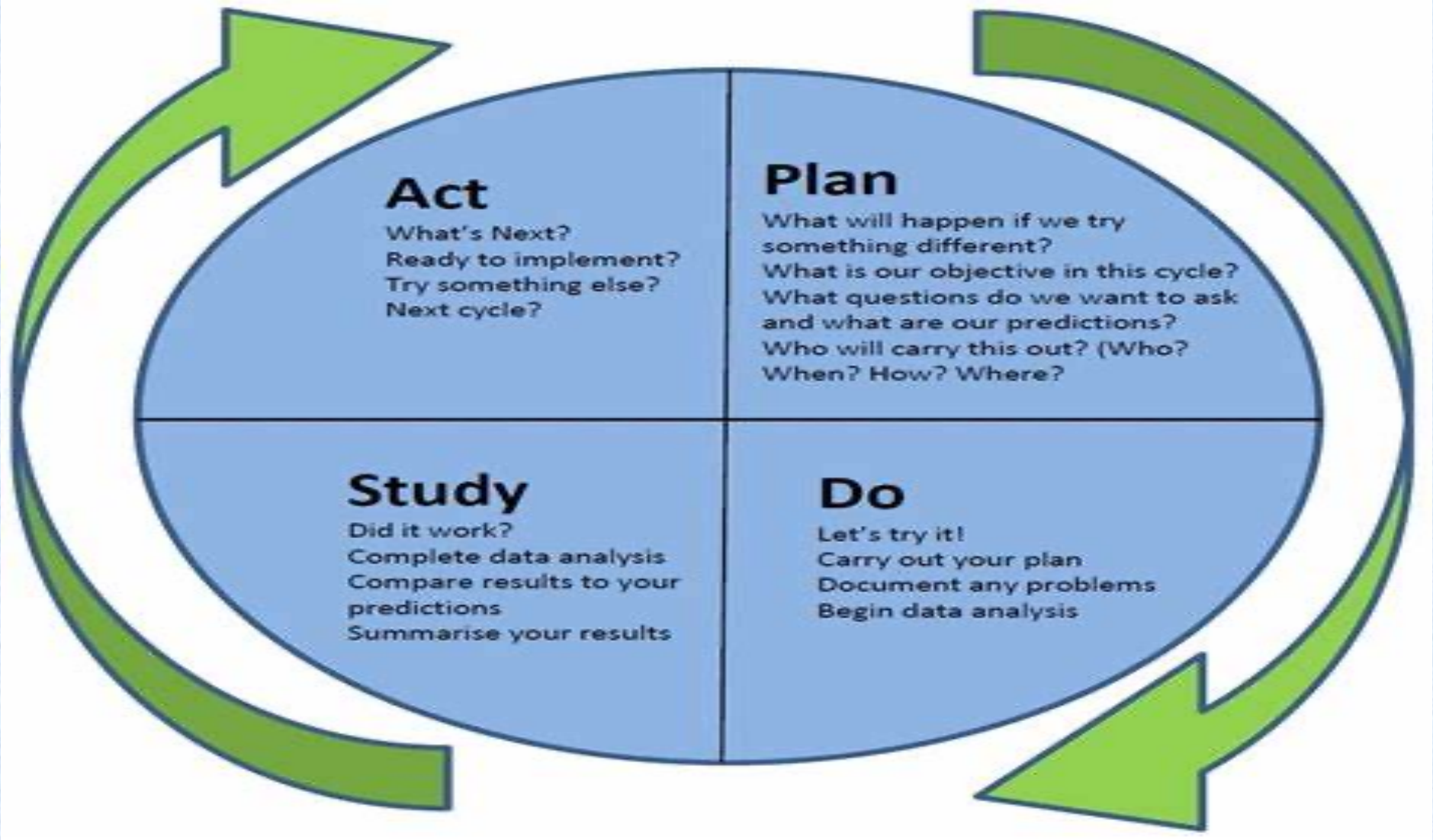
Measurable Project Objectives

- Implementation of Health Coaching Protocol
- Improvement in Glycemic Controls
- Education of NPs, RNs, and LVNs (providers) on Health Coaching Protocol

Framework for Quality Improvement (QI) Project

- **Implementation Framework:**
  - Plan-Do-Study-Act (PDSA) Cycle (Connelly, 2021).
- **Justification for PDSA Approach**
  - Learning and Adaptation (Connelly, 2021).
  - Incremental Testing
  - Minimized and safe Disruption (Connelly, 2021).

Framework for Quality Improvement (QI) Project



Methodology

Target Population:

- Nurses working in a primary care clinic.

Setting:

- Los Angeles non-profit, Federally Qualified Health Care outpatient primary care clinic (St. John's Community Health, 2023).

Interventions:

- Health Coaching Education Plan.

Timeline:

- Start Date: November 6th, 2022
- Duration: Four weeks

Data Collection and Evaluation:

- Daily fasting blood glucose levels/
- Continuous monitoring through PDSA cycles
- Assessing glycemic control outcomes.

Institutional Review Board (IRB)-

- Not needed as it's a quality improvement project.

Plan for Data Analysis

- A paired *t*-test was used to measure the change in glucose levels (Pallant, 2020).
- The level of significance was set at p=0.05 (Pallant, 2020).
- The results were statistically significant if the *p*-value was less than 0.05
- The Statistical Package for the Social Sciences (SPSS) was used to run a *t*-test to measure changes in blood glucose levels before and after the intervention (Pallant, 2020).
- There are no plans to seek the services of a statistician because the project lead is knowledgeable in data analysis using SPSS.

Results

- **Table 1-** *Pre- and Post-implementation Average Glucose*

Descriptive Statistics

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Pre-intervention average daily blood glucose	10	274.21	280.00	2774.29	277.4286	2.06224
PostInterventionAverageBloodGlucose	10	180.07	185.48	1827.19	182.7190	1.82622
Valid N (listwise)	10					

- *Table2- Blood Glucose Paired T-test*

Paired Samples Test

		Paired Differences					t	df	Significance	
					95% Confidence Interval of the Difference					
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			One-Sided p	Two-Sided p
Pair 1	Pre-intervention average daily blood glucose - AverageGlucose- Post Intervention Blood Glucose	94.70952	2.36731	.74861	93.01605	96.40300	126.514	9	<.001	<.001

Results Cont.…

There was a statistically significant difference in the glucose levels before and after implementing health coaching ($t = 126.51$, $df = 9$, $p < 0.001$, $SD = 2.37$).

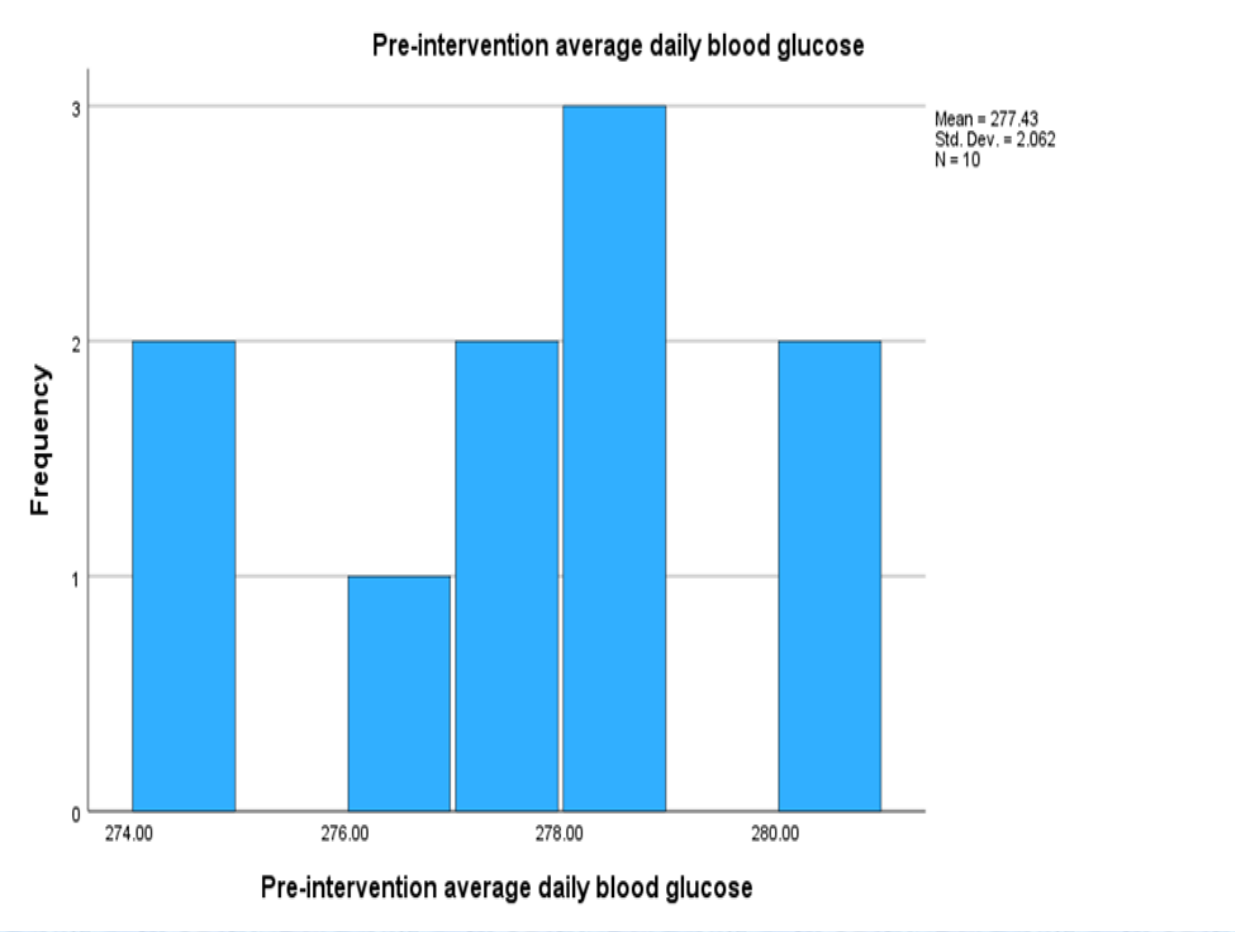
Mean difference between the pre-intervention and post-intervention glucose levels was 94.71 mmHg.

There was an improvement in blood glucose control, represented by 34.13%, within the projected improvement in glycemic levels of 22.03% to 37%.

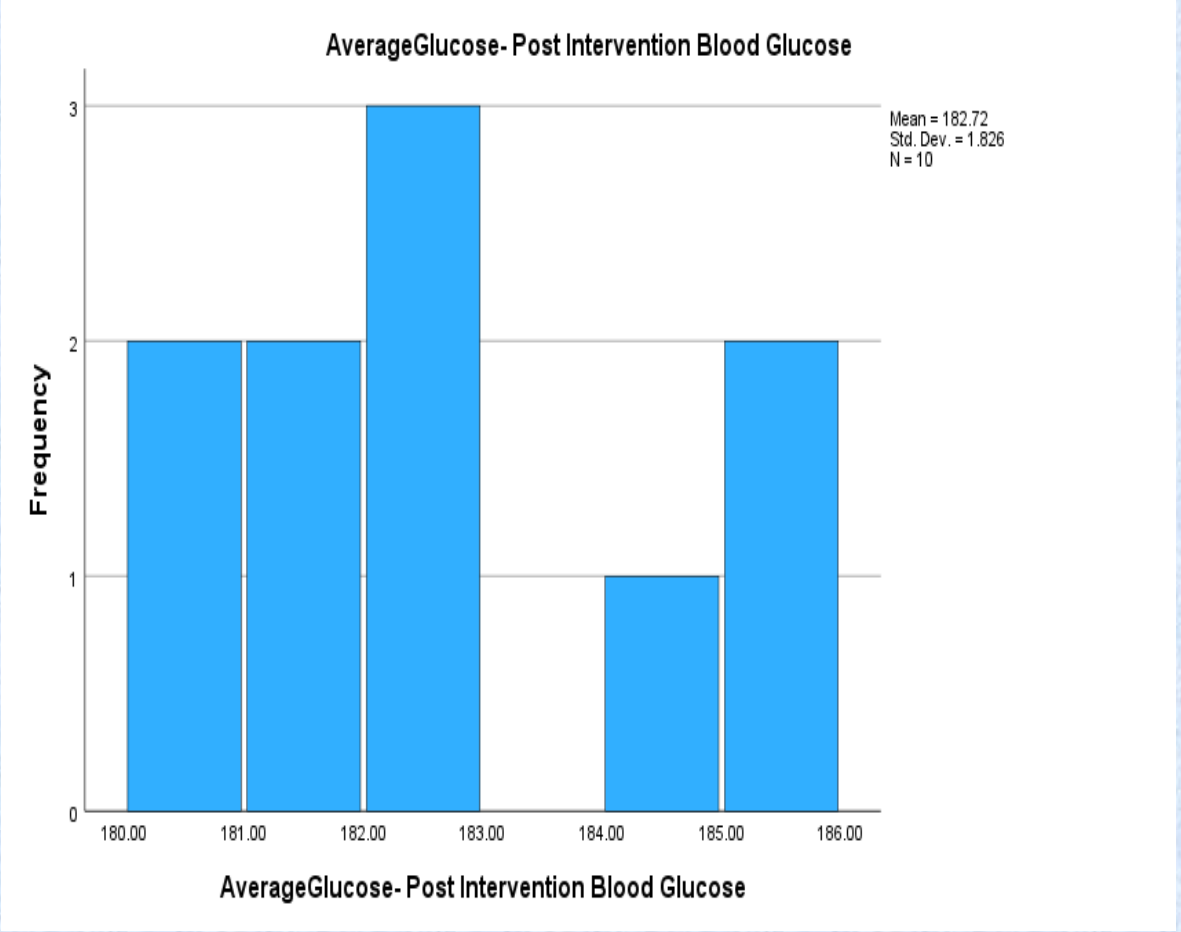
The results implied a statistically significant decrease in blood glucose levels.

Results Cont….

- Figure 1- *Pre- Intervention Average Blood Glucose*



- **Figure 2-***Post-Intervention Average Blood Glucose*



Significance of the Results

- **Significance to the Project Site**
  - ➢ Improved Glycemic Control
  - ➢ Addressing Clinic's Need for Enhanced Diabetes Education
- **Significance to Nursing Practice/Profession**
  - Empowering Nursing Staff
  - Impact Beyond Glycemic Control

Limitations of the Project

Limitations

- Inclusion-Exclusion Bias (George et al., 2019).
- Subjective Data Collection
- Analysis by Project Lead

Limitations minimization

- Deliberate Focus
- Incorporating Indirect Participants
- Standardized Data Collection
- Broad Impact of Training

Project Sustainability/Dissemination

Sustainability

- Embedding the intervention into the clinical workflow.
- Using the PDSA cycle to allow continuous assessment.
- Ensuring sustained support and commitment to the project's success by key stakeholders.
- Empowering nurses to coordinate care.

Project Sustainability/Dissemination Cont…

Dissemination

- Touro University Research Day
- DNP Repository Website
- National Association of Nigerian Nurse Practitioners (USA) Educational conference on October 3rd to 5th 2024.
- Key stakeholders.

Conclusion

- The project's main objective was to determine the efficacy of health coaching by primary care providers.
- The aim was to implement a health coaching protocol in line with ADA diabetes education recommendations for healthcare providers.
- The project used the PDSA cycle as the implementation framework.
- Project findings- health coaching intervention significantly decreased the average daily blood glucose levels in patients with T2DM.
- The project findings- patients' knowledge about lifestyle modifications through health coaching may improve glycemic control and reduce diabetes-related complications.

Questions

Any Questions?

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