

# Optimizing Diabetes Self-Management Outcomes in Low-Income Ethnic Minority Patients in the United States

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# Disclosure

**The authors have no conflict of interest to declare**

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# Learners Objectives

**The learners will understand how diabetes group visits were developed and implemented in a community-based health center**

**The learners will understand the importance of diabetes self-management education that is group-based and delivered in the context of a medical visit can improve outcomes**

# Methods

**Design:** Two group repeated measures design  
Mixed-methods (quantitative and qualitative)  
Randomized by health care provider group

**Sample:** Women and men with type 2 diabetes

**Setting:** Alliance Medical Ministry every 3 months

**Procedures:** Lab work, communal breakfast, educational component, social support and medical visit with MD or NP in private and social work and pastoral care available.

# Intervention

**Developed according to the American Diabetes Association  
Clinical Practice Guidelines**

**Class One: Understanding Foot Care**

**Class Two: Understanding Blood Glucose and A1C goals**

**Class Three: Understanding Nutrition and Exercise Goals**

**Class Four: Understanding Blood Pressure and Lipid Goals**

**Class Five: Understanding the Complications of Diabetes**

# Demographics

**Age**                      **Range 32 to 65 years old**  
**Mean = 51.4; SD  $\pm$  8.5**

**Gender**                **89.3% female**  
**10.7% male**

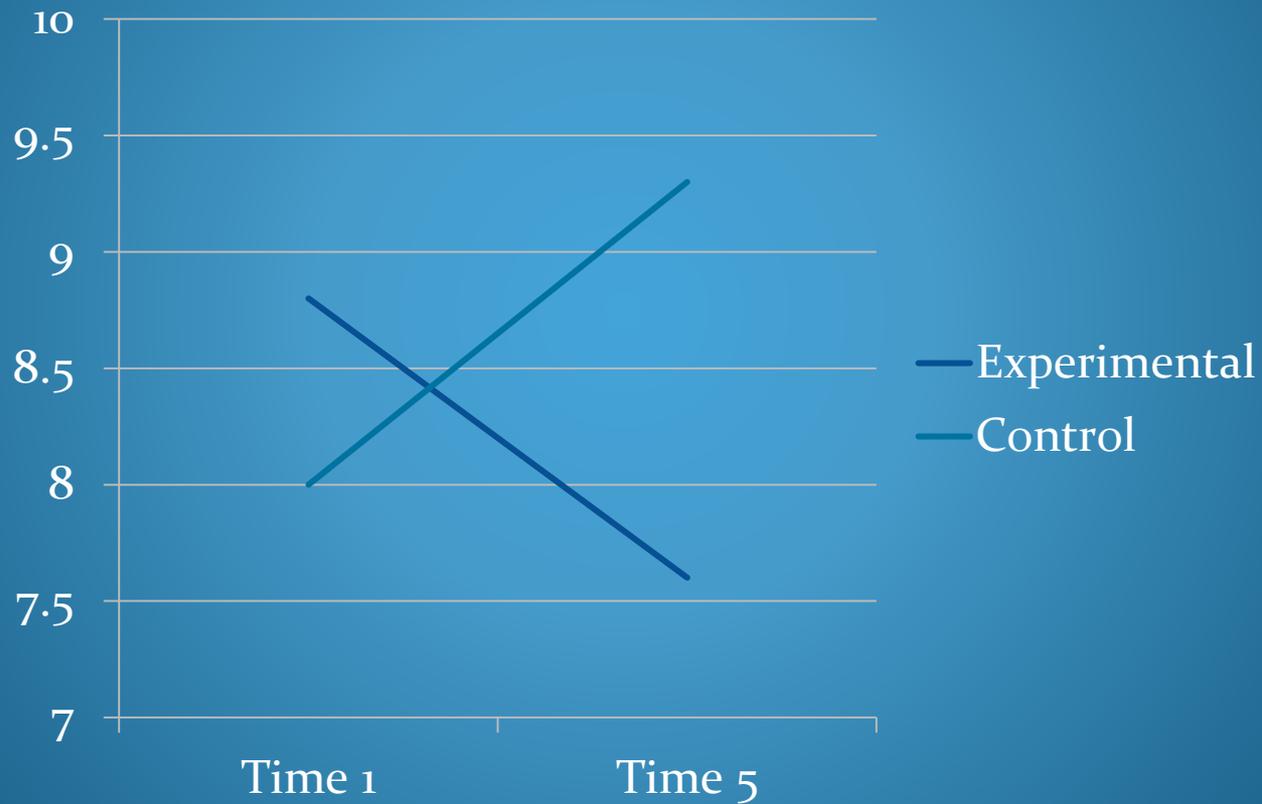
# Demographics

<b>Race/ Ethnicity</b>	<b>Non-Hispanic Black</b>	<b>77.4%</b>
	<b>Non-Hispanic White</b>	<b>2.4%</b>
	<b>Bilingual Hispanic</b>	<b>1.2%</b>
	<b>Asian Pacific</b>	<b>1.2%</b>
	<b>American Indian</b>	<b>1.2%</b>

# Demographics

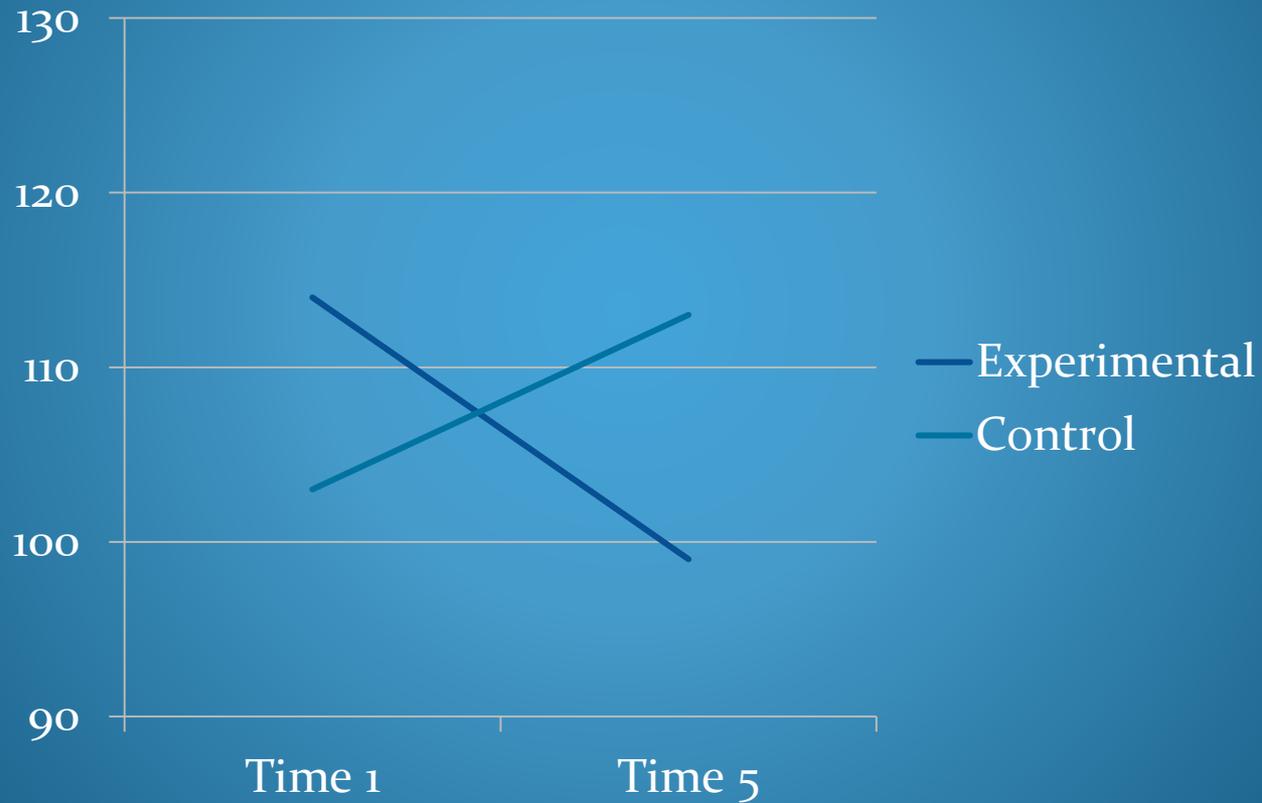
<b>Education</b>	<b>Finished High School</b>	<b>54.2%</b>
	<b>Finished 4 Years of College</b>	<b>25.2%</b>
	<b>Finished Graduate School</b>	<b>3.6%</b>

# Hemoglobin A1C



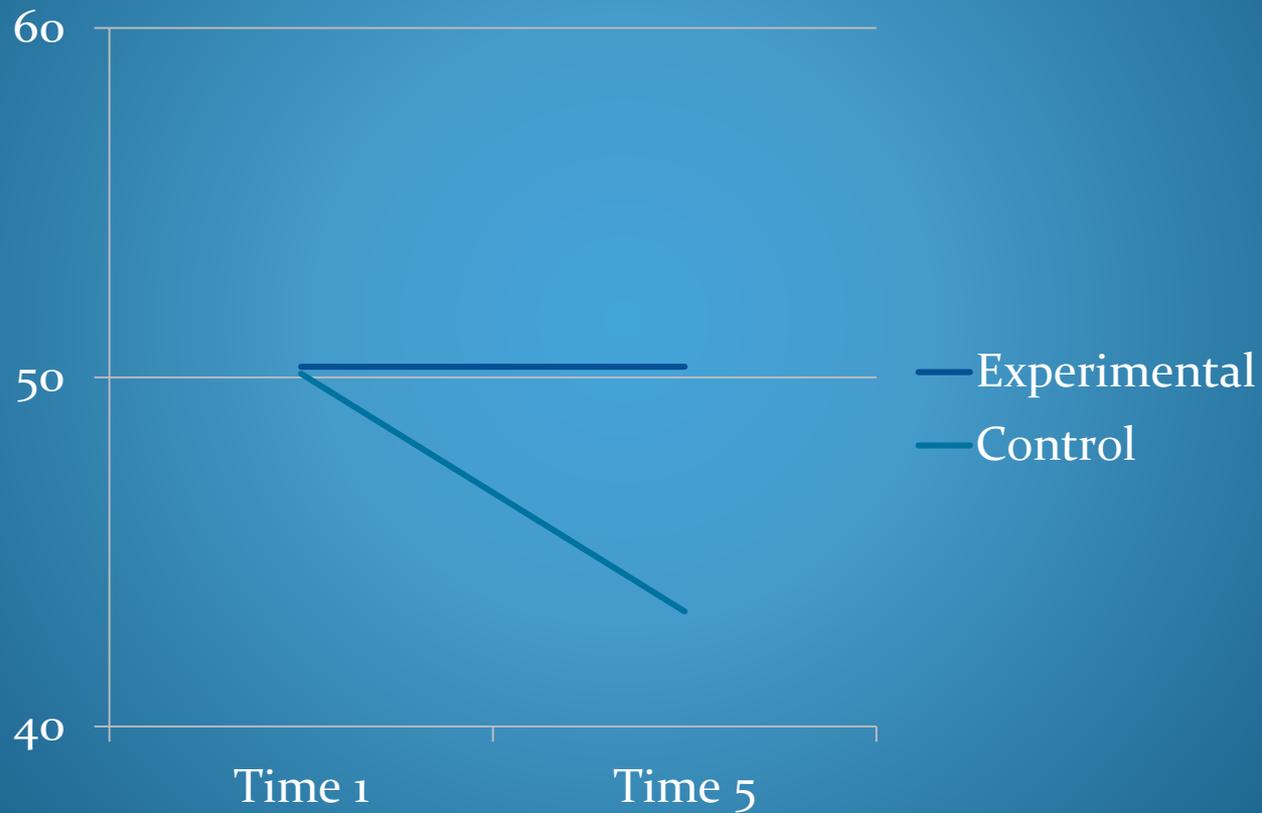
**$F = 12.8; P = 0.001$**

# Low-Density Lipoprotein



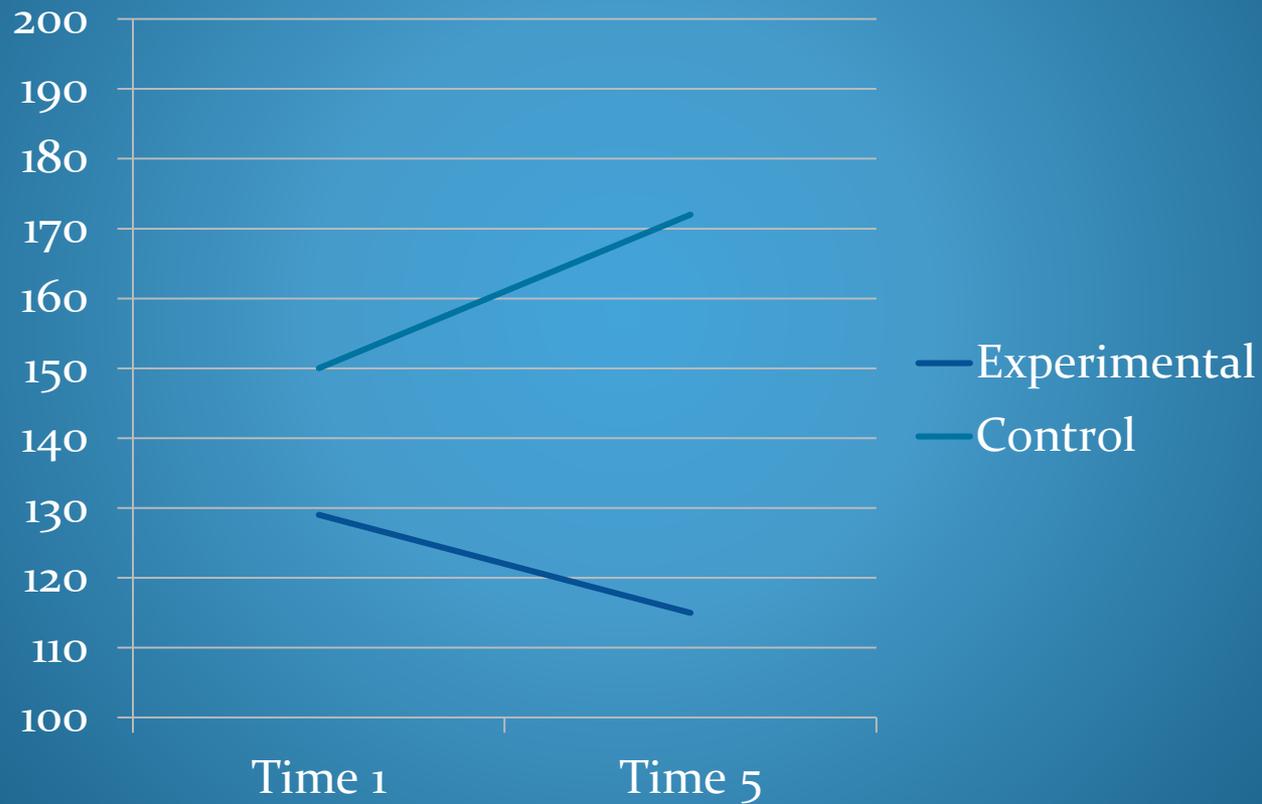
**$F = 3.6; P = 0.064$**

# High-Density Lipoprotein



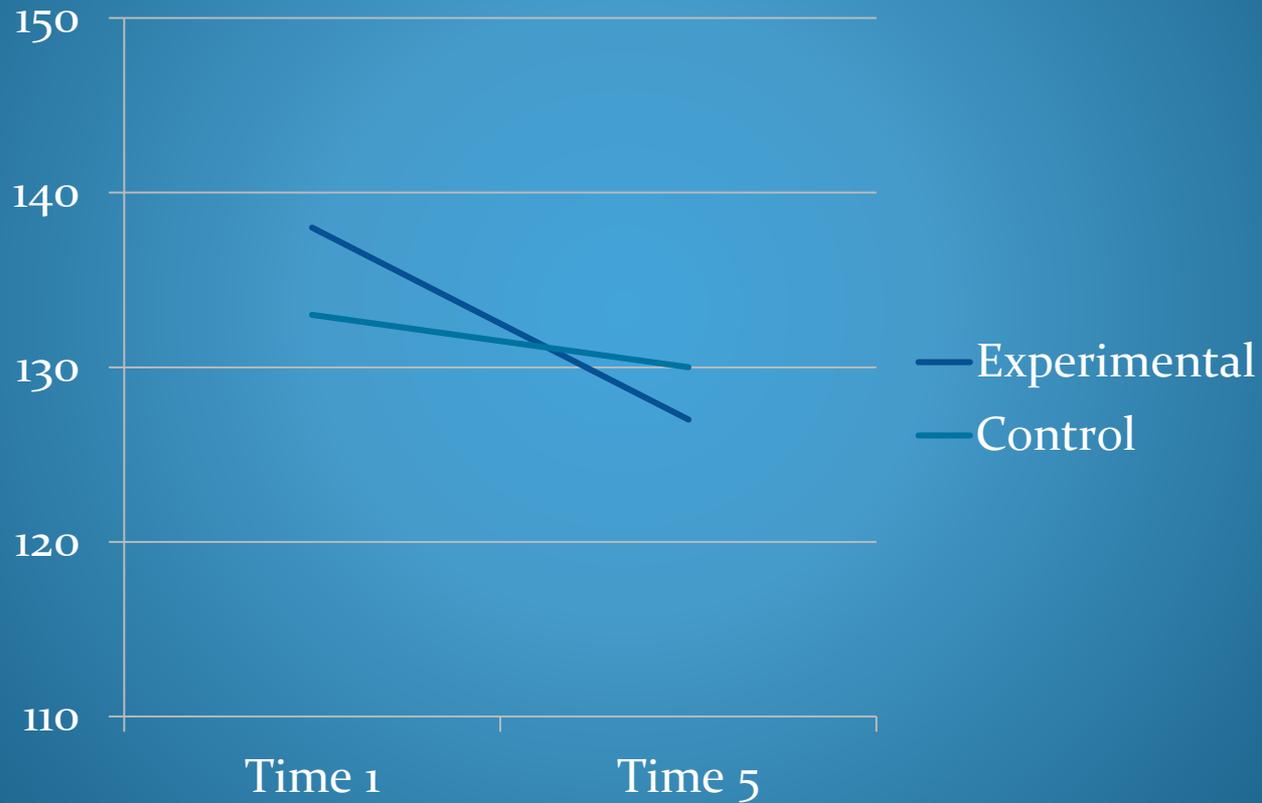
**$F = 4.8; P = 0.033$**

# Triglycerides



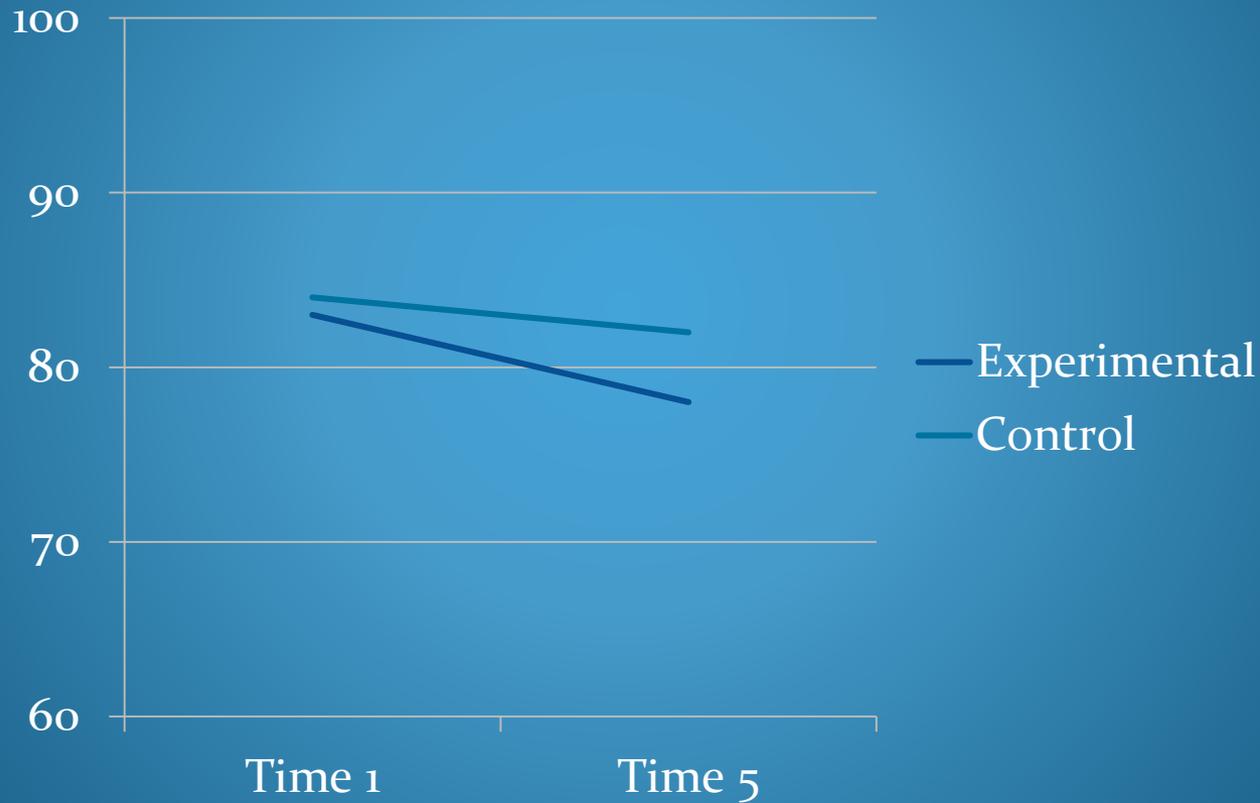
**$F = 11.0; P = 0.002$**

# Systolic Blood Pressure



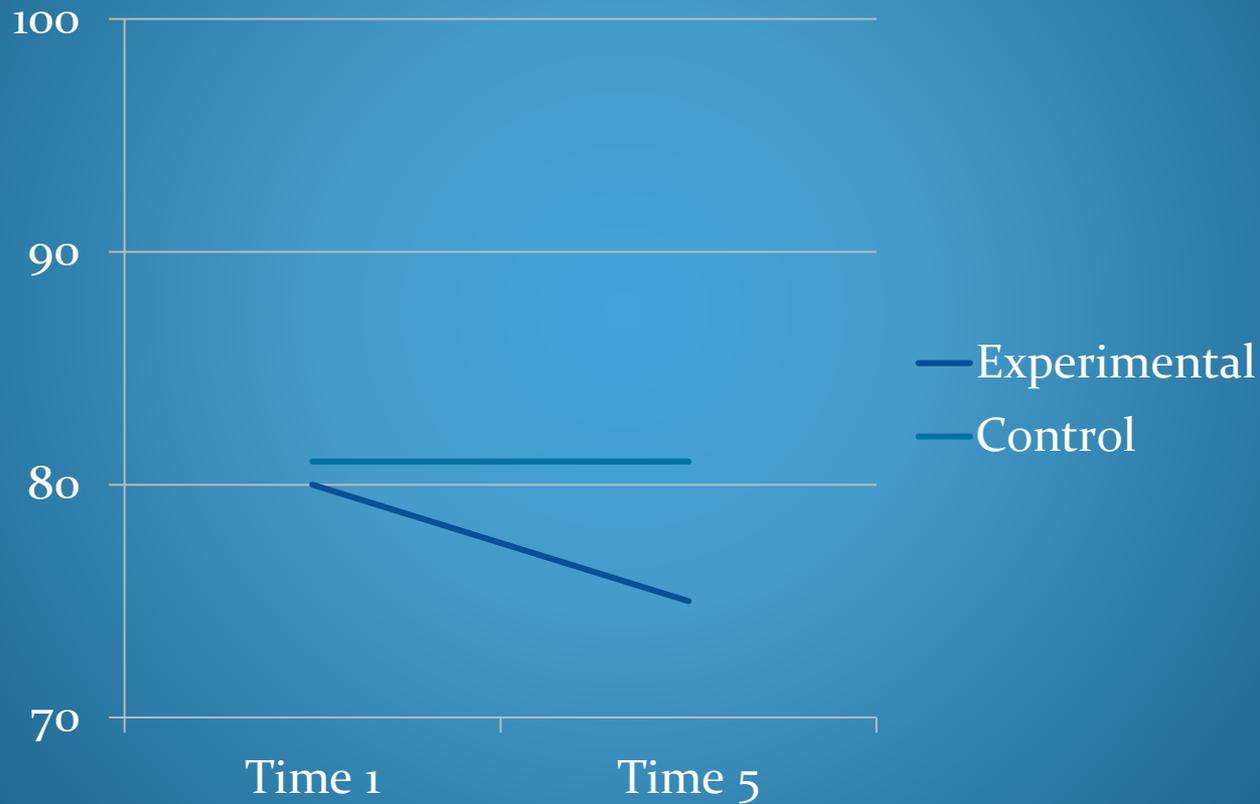
**$F = 0.2; P = 0.644$  NS**

# Diastolic Blood Pressure



**$F = 2.1; P = 0.153$  NS**

# Heart Rate (Beats/Minute)



**$F = 4.9; P = 0.031$**

# Health Status

	Time 1	Time 5
Experimental	3 (good)	2 (very good)
Control	3(good)	3 (good)

*F = 11.4; P = 0.001*

# Daily Activities

**No significant differences between groups on all parameters at any time points**

# Blood Glucose Monitoring

- 1. Do you have a machine to measure blood glucose at home? The majority (81%) of all patients had a machine and there were no significant differences between groups ( $F = 0.8$ ;  $P = 0.391$ )**
- 2. How many days last week did you check your blood glucose level? The majority (63%) checked their blood glucose 3 to 4 days a week and there were no significant differences between groups ( $F = 0.8$ ;  $P = 0.373$ )**
- 3. On the days that you test your blood glucose, how many times do you test on average? The majority (83%) checked their blood glucose 1 to 2 times a day and there were no significant differences between groups ( $F = 0.8$ ;  $P = 0.373$ )**

# Physical Activity

During the past week (for the entire week) did you spend on each of the following?

Stretching- The patients in the experimental group did significantly more stretching ( $F = 10.4; P = 0.001$ ) than the control group for less than 30 minutes a week from Time 1 to Time 5

For all other questions there were no significant differences from Time 1 to Time 5 between groups.

# Confidence

How confident do you feel that you can exercise 15 to 30 minutes 4 to 5 times a week?

The experimental group (Mean = 7.3; SD  $\pm$  2.4) felt significantly ( $F = 4.7$ ;  $P = 0.034$ ) more confident they could exercise compared to the control group (Mean = 5.9; SD  $\pm$  2.8) from Time 1 to Time 5.

They felt more confident but they weren't acting on it as noted in the previous questions about physical activity which is not uncommon.

# Confidence

**How confident do you feel that you can do something to prevent your blood glucose from dropping when you exercise?**

**The experimental group (Mean = 7.7; SD  $\pm$  1.9) felt significantly ( $F = 4.9$ ;  $P = 0.030$ ) more confident they could do something to prevent their blood glucose from dropping compared to the control group (Mean = 6.5; SD  $\pm$  2.4) from Time 1 to Time 5.**

# Breakfast

**How many times last week did you eat breakfast when you got up?**

**There was no significant ( $F = 0.1; P = .977$ ) difference between the patients in the experimental group compared to the patients in the control group from Time 1 to Time 5.**

**They both ate breakfast an average of 5 days a week.**

# Medications

There was no significant difference in patients in the experimental group compared to the control group from Time 1 to Time 5 in taking medications for diabetes ( $F = 2.4$ ;  $P = 0.125$ ), insulin injections ( $F = 0.3$ ;  $P = 0.595$ ), or medications for hypertension ( $F = 0.1$ ;  $P = 0.978$ ).

Significantly ( $F = 4.0$ ;  $P = 0.049$ ) more patients in the experimental group took medications for cholesterol compared to the control group patients from Time 1 to Time 5.

# Medical Care

There were no significant differences on all questions regarding medical care except feeling comfortable talking with their health care provider about any personal problems that may be related to your illness (0-5)

There was a significant ( $F = 7.8$ ;  $P = 0.007$ ) difference between the experimental group patients (Mean = 3.3; SD  $\pm$  1.6) and control group patients (Mean = 2.2; SD  $\pm$  1.6). The experimental group patients felt that they spoke fairly often to their health care provider compared to the control group who only sometimes spoke with their health care provider.

# Exit Interviews

**What changes have you noticed in your eating and exercise since beginning the program?**

**The majority responded they were more aware of their eating habits and they were not exercising enough and needed to fit more exercise into their lives.**

# Exit Interviews

**When asked if they could talk about an event or a situation that made you think “wow” this is really a change?**

**The majority of patients responded they were now eating more balanced meals, exercise, weight loss, and that the health care providers and teachers made a big impact by breaking down and explaining the things that needed to be made in order to better manage their diabetes.**

# Exit Interviews

**What are some of the important things you learned from the program?**

**The majority of patients responded how to better manage their diabetes, better eating habits including portion control and exercise.**

# Exit Interviews

**In your opinion, what did you enjoy and find most helpful in participating in the program?**

**The majority of patients said they liked engaging and sharing with their peers and seeing that others had the same challenges that they had.**

# Exit Interviews

**What do you like most about the program?**

**The majority shared engaging with other patients and their time alone with their health care providers.**

# Exit Interviews

**What do you like least about the program?**

**The majority answered “nothing.”**

# Exit Interviews

**The patients were asked to think back over their experience in the program and what were important changes that you have made?**

**The majority said they learned how to better control their glucose levels and as a result had more energy and that they improved their eating habits and were starting to exercise more.**

# Exit Interviews

**The patients were asked were there some setbacks along the way or times that you questioned if the program was worth the effort?**

**The majority said “none. “ However, several shared learning about how much food they really should be eating and how many times a day was new information.**

# Exit Interviews

**The patients were asked what is your advice on how to make the program better if we continue the program?**

**The majority did not advise any changes and did not want the program to stop and they enjoyed the group approach to education and support and enjoyed their time alone with their health care provider. One patient felt the program was a “lifesaver.” Many patients felt the program made them “more accountable” not only to themselves but to their group as well.**

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# Conclusions

**The group diabetes visits improved important outcomes in patients.**

**Provided valuable education and support to the patients.**

**The group diabetes visits empowered the patients to take control of their diabetes and make real life changes .**

**Provided a safe haven where patients could come together to share, learn, receive high quality care delivered in a respectful manner that honored them as individuals.**