Outcomes of the LOVN Care Team Diabetes Project

Sixty-five individuals participated in the LOVN Care Team Diabetes Project pilot study. Thirty-four were randomly assigned to be part of the control group; 31 individuals were randomly assigned to receive the intervention.

Prior to the beginning of the pilot study, a number of important outcomes were selected to assess the impact of the intervention. A summary of these results, along with corresponding study data, are captured below.

Primary Outcome: Hemoglobin A1c

One of the most common outcome measures used to assess the effectiveness of interventions targeted toward diabetics is the change in hemoglobin A1C (A1C). A1C indicates an individual's blood sugar control over the last 2-3 months. A1C values are directly proportional to the concentration of glucose in the blood, yet not subject to the fluctuations that are seen with daily blood glucose monitoring. While participants enrolled must have had an A1C of 7.5% or above at the beginning of the study, the American Diabetes Association considers the diabetics to be under control when the A1C result is 7% or less. The findings of the Diabetes Control and Complications Trial and the United Kingdom Prospective Diabetes Study demonstrated that lowering A1C reduces the risk for diabetes complications.

Table 1: Hemoglobin A1C Results

	Control Group Mean	Intervention Group Mean
Baseline	8.8	9.2
3 mo.	8.5	8.4
6 mo.	8.5	8.2
Change (Baseline – 6 mo.)	-.38	-.90 *

* Between-group difference significant at $p < .10$.

Table 2: Participants Achieving Recommended A1C Levels (A1C < 7.0)

	Control Group	Intervention Group
After 6 mo.	17.7%	25.8%

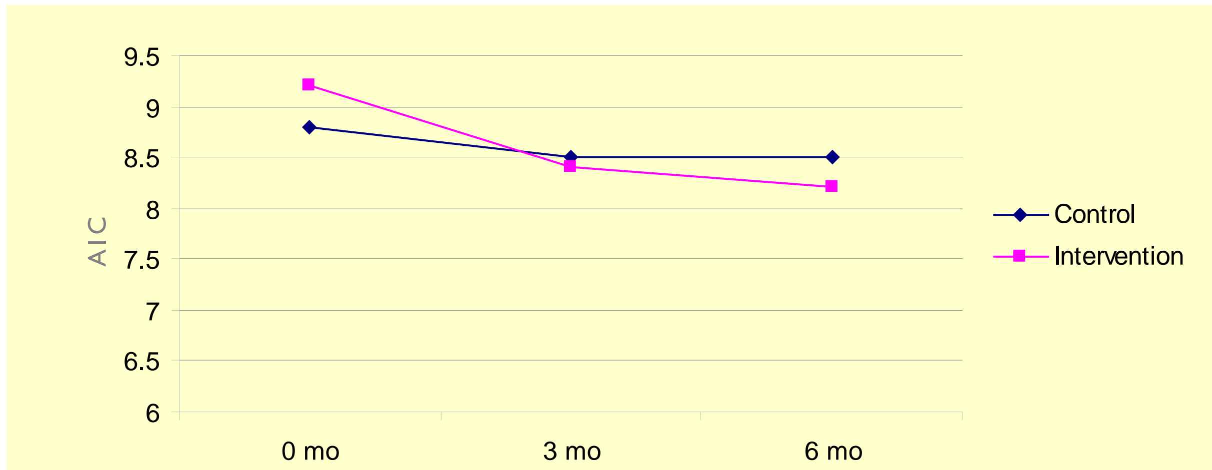
Over the study period, the reduction in A1C was greater for the intervention group. The intervention group saw an average AIC drop of .90 while the control group saw an average decrease of .38. This difference can be considered "borderline" statistically significant.

Though a higher proportion of participants in the intervention groups achieved an A1C less than 7.0% (as recommended by the American Diabetes Association), the difference between the groups is not statistically significant.

Baseline Characteristics

	Control	Interv
Ave. Age	71	70
% Female	59%	52%
Race/Ethnicity		
White	74%	81%
Black	9%	10%
Hispanic/Latino	9%	7%
Other	9%	3%
Education		
8 grades or less	18%	3%
Some high school	9%	13%
High School/GED	26%	17%
Some college/tech	26%	43%
College Grad	9%	3%
Graduate degree	12%	20%
Marital Status		
Never Married	15%	3%
Married	35%	58%
Separated/Divorced	18%	13%
Widowed	32%	26%
Employment		
Employed	9%	26%
Unemployed	-	-
Retired	74%	42%
Disabled	12%	23%
Other	6%	10%
# of Complicating Conditions	4	5
Frequency of Glucose Monitoring		
< 1 time /day	23%	29%
1-2 times/day	47%	55%
3 times or more/day	30%	19%
Method of Diabetes Management		
Diet	35%	61%
Oral Meds	32%	45%
Insulin	38%	35%
Health Insurance		
Individual Plan	38%	42%
Group Plan	12%	13%
US Govt Health Plan	6%	0%
Medicaid	24%	16%
Medicare	82%	77%
No Ins in past 12 mo	6%	13%

Figure 1: Illustration of A1C Changes Over Time



Secondary Outcomes

Diabetes Understanding

Diabetes understanding was measured at baseline and 6 months using a subscale of the Diabetes Care Profile, an instrument used to assess the social and psychological factors related to diabetes and its treatment.

Table 3: Diabetes Understanding

	Control Group	Intervention Group
Baseline	2.7	2.8
6 mo.	2.8	3.1
Change (Baseline – 6 mo.)	0	.3 *

* Between-group difference significant at p < .10.

Improvements in diabetes understanding were noted for the intervention group. The difference between groups is considered "borderline" significant.

Depression

Depression status was measured at baseline and 6 months using the 15-item short form of the Geriatric Depression Scale (GDS-SF). The GCS-SF has been used extensively in research and is scored on a 15 point scale, where higher scores are associated with depression. For clinical purposes, a score of > 5 points is suggestive of depression; scores > 10 are almost always depression.

Table 4: Depression

	Control Group	Intervention Group
Baseline	8.2	7.5
6 mo.	6.7	6.5
Change (Baseline – 6 mo.)	-1.2	-0.9

Surprisingly, depression scores improved more in the control group. The difference between groups is not significant, however.

Diabetes Self-Empowerment

Diabetes self-empowerment relates to the willingness and ability of people to engage in various behavioral challenges including preventive and disease management behaviors. Self-empowerment was measured using the 8-item Diabetes Empowerment Scale-Short Form. Scores for this scale range from 1 (indicating low self-empowerment) to 5 (indicating high self-empowerment).

Table 5: Diabetes Self-Empowerment

	Control Group	Intervention Group
Baseline	3.7	3.7
6 mo.	3.7	3.9
Change (Baseline – 6 mo.)	0	.2

A slight improvement in diabetes empowerment was observed for the intervention group. The difference between groups, however, is not significant.

Clinical Outcomes

In addition to assessing the change in A1C, this study also aimed to assess the change in other clinical indicators associated with diabetes management, including blood pressure, cholesterol levels, weight and body mass index (BMI). These measures were captured at baseline and at the conclusion of the study.

Table 6: Clinical Outcomes – Blood Pressure, Cholesterol, Weight, BMI

	Control Group	Intervention Group
Systolic Blood Pressure		
Baseline	141	146
6 mo.	137	140
Change (Baseline – 6 mo.)	-4	-5

	Control Group	Intervention Group
Diastolic Blood Pressure		
Baseline	73	79
6 mo.	74	75
Change (Baseline – 6 mo.)	-0.2	-1.9

	Control Group	Intervention Group
Total Cholesterol		
Baseline	202	200
3 mo.	191	181
Change (Baseline – 6 mo.)	-10	-20

	Control Group	Intervention Group
HDL Cholesterol		
Baseline	56	45
6 mo.	54	52
Change (Baseline – 6 mo.)	.3	4.2

	Control Group	Intervention Group
LDL Cholesterol		
Baseline	198.6	202.7
6 mo.	195.1	200.3
Change (Baseline – 6 mo.)	-1.6	-3.2

	Control Group	Intervention Group
Weight		
Baseline	198.6	202.7
6 mo.	195.1	200.6
Change (Baseline – 6 mo.)	-1.6	-3.2

	Control Group	Intervention Group
BMI		
Baseline	33.0	33.6
6 mo.	32.3	33.3
Change (Baseline – 6 mo.)	-0.3	-0.5

Though the clinical indicators captured to the left are commonly used in the evaluation of similar health interventions, these measures typically take longer to impact than the 6 month evaluation period of the LOVN Care Team's pilot project.

It does not come as a surprise, then, that no significant differences were observed between the control and intervention groups for these measures.

Participant Satisfaction

After concluding participation in the pilot study, individuals were asked to complete a survey which was sent to them in the mail. This survey served to assess participant satisfaction with the LOVN Care Team. Of the 65 people enrolled in the LOVN Care Team Diabetes Project, 31 received the six-month intervention. Twenty-one of the 31 people in the intervention group responded to the survey to assess satisfaction with the study. Results from this survey are captured below.

Overall Satisfaction with Diabetes Study

	Frequency	*Percent*
Satisfied	19	95.5
Dissatisfied	1	5

Did your Hemoglobin A1C improve (go down) during the course of the study?

	Frequency	*Percent*
Yes	16	88.9
No	2	11.1

What helped the most?

	Frequency	*Percent**
Information provided by the study nurse	16	76.2
Goal setting with the study nurse	8	38.1
Nutritional counseling	3	14.3
Mental Health Services	1	4.8
Friendship-At-Home Services	1	4.8
Weekly reminder calls	2	13.3
Other	1	4.8
Not applicable	1	4.8

**Some respondents selected more than one answer. As a result percentages do not sum to 100.*

If your Hemoglobin A1c improved, do you think you will be able to sustain this improvement now that you are no longer receiving visits?

	Frequency	*Percent*
Yes	15	83.3
No	3	16.7

Comments from the Intervention Group:

- *"Enjoyed participating. Would be good program for home."*
- *"Laveine was great."*
- *"Even though it didn't work I feel better than I did before. I would love to have a babysitter still!...would love to see Amy again and keep hearing from Sarah."*
- *"Follow up every 6 months by nurse."*
- *"I have the utmost respect for Debbie. She is informed, concerned, supportive and the best part about this program. Thank you!"*
- *"I would like all test results (written) to share with my doctor."*
- *"Debbie was great; weekly calls kept me on track; other services were not provided".*
- *"Keep up the good work."*
- *"Debbie Frank was a great help to me. She was totally professional and went out of her way to help me. She provided information above and beyond the call."*
- *"Too bad you cannot provide cheaper prescription drugs, or a way to get health insurance for people with diabetes. Nice study, but it only scratches the surface of my problems. Good from a motivation point of view, could need nurse visit more often. Thanks."*