

Evaluation of a Diabetes Prevention Program Implementation in a Student-Run Free Clinic Setting



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BACKGROUND

The CDC’s nationally-recognized Diabetes Prevention Program (DPP) can prevent or delay the development of type 2 diabetes in at-risk individuals¹. Although low-resource and minority communities are among those at the highest risk², they have inferior DPP outcomes³, likely attributable to program cost and accessibility. This study evaluated whether a high-fidelity, reduced-cost 16-week DPP could be implemented by student volunteers and achieve the target 5% weight loss goal.

METHODS

Uninsured, Spanish-speaking participants and their invited guests were recruited from Vanderbilt University’s student-run clinic. Weekly DPP sessions were conducted using the CDC’s Prevent T2 curriculum in Spanish, delivered in-person for 6 weeks and virtually for the remaining 10 due to the COVID-19 pandemic. Additional program elements were incorporated to reduce socioeconomic barriers to participation through student health mentors. Participant attendance and weight data were collected. Pre- and post-program health-related quality of life was assessed using the EuroQoL 5D5L tool, and qualitative program feedback surveys were administered after completion of the 16-week program.

Figure 1. Intervention Timeline

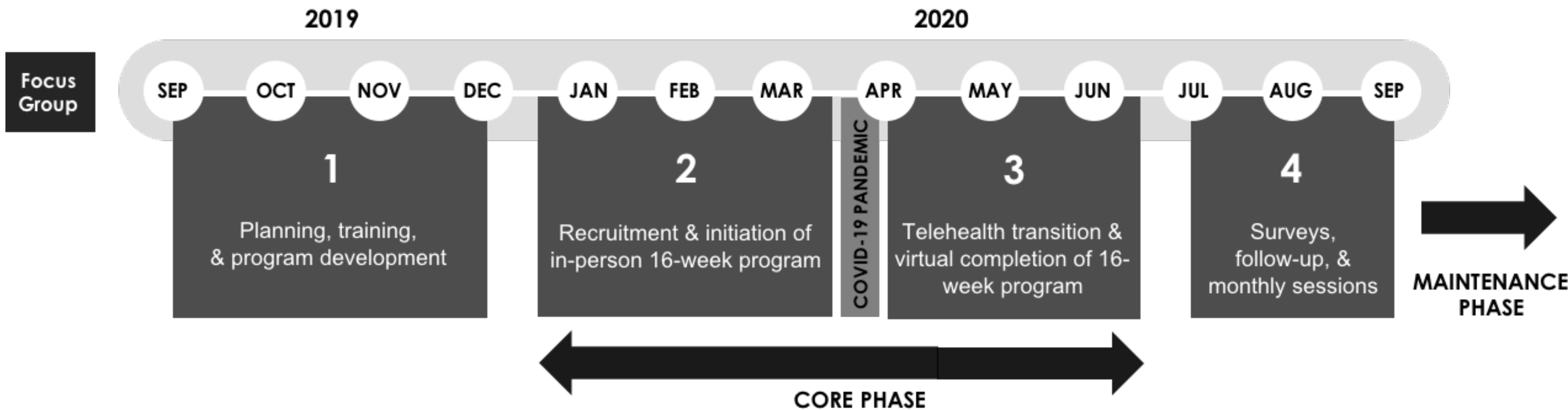
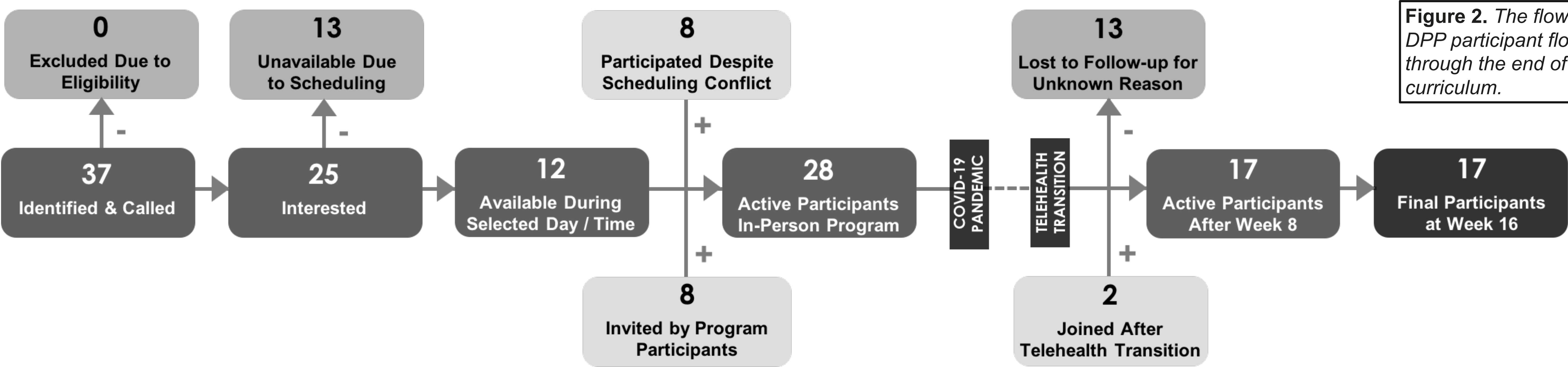


Figure 2. Cohort Flow Diagram



17 participants, including 13 clinic patients and 4 invited guests, actively engaged in the student-led DPP. The median weight loss achieved by participants was 5.9% of their total body weight. 13 of the 17 participants (76.5%) achieved the 5% weight loss goal. Age, sex, pre-program BMI, and English proficiency were not associated with the achievement of the 5% weight loss goal. Patients’ average self-scored general health rating (0-100) improved from 72.3 to 81.5 (p=.124), and the greatest reductions in reported health limitations were reported with pain (1.94 to 1.70, p=.276) and daily activities (1.53 to 1.35, p=.358).

Table 1. Patient-Reported Quality of Life

Quality of Life Dimension	Mean Pre-Program Score (SD)	Mean Post-Program Score (SD)	P-Value ^a
Mobility (1-5)	1.47 (.81)	1.35 (.72)	0.6886
Self-Care (1-5)	1.18 (.54)	1.12 (.50)	0.5995
Usual Activities (1-5)	1.53 (.73)	1.35 (.72)	0.3584
Pain/Discomfort (1-5)	1.94 (.72)	1.70 (.93)	0.2759
Anxiety/Depression (1-5)	1.70 (.86)	1.47 (.73)	0.4236
Overall Health (1-100)	72.3 (19.31)	81.5 (18.38)	0.1239

Table 1. Participant self-reported measures of quality of life using the validated EuroQoL 5D5L tool.
^aWilcoxon test

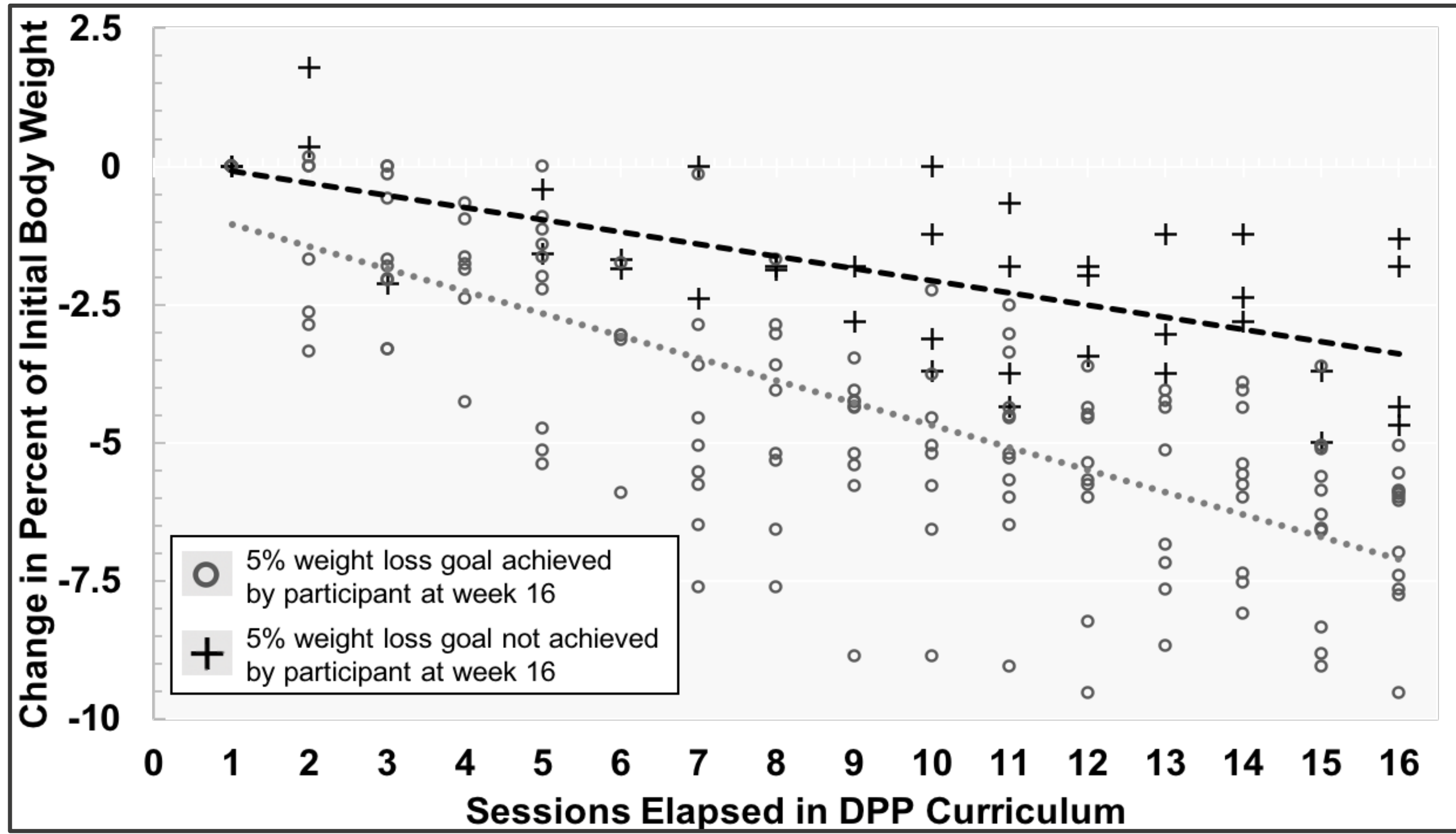
RESULTS

Table 2. Patient Demographics (By Weight Loss Achievement)

Characteristic	Overall Final Cohort (n=17)	5% Wt. Loss Achieved	5% Wt. Loss Not Achieved	P-Value
General Characteristics				
No. of participants	17	13	4	c 0.69 ^a
Age (Mean)	47.53	48.54	44.25	
Age (Median)	45	45	45.50	
Age (St. Dev)	12.65	10.75	19.31	
Age (Range)	21-67	36-67	21-65	
Sex				
Female	13	9 (69.23%)	4 (30.77%)	0.52 ^b
Male	4	4 (1.0)	0 (0.0)	
BMI category				
Normal (<25)	0	0	0	0.58 ^b
Overweight (25-30)	6	4 (66.67%)	2 (33.33%)	
Obese (>30)	11	9 (69.23%)	2 (30.78%)	

Table 2. Baseline demographic information for the 17 patients in the final cohort at week 16.
^aWilcoxon test | ^bFisher test | ^cDoes not apply

Figure 3. Participant Weight Loss During 16 Week Core Curriculum



CONCLUSION

A student-run DPP implementation among low-resource appears capable of achieving the target 5% weight loss and achieving positive patient-reported quality of life outcomes. Consistency in communication with participants between program sessions was critical to program success, and the use of student health mentors helped to address barriers to participation. If scalable, this implementation design could offer a reduced-cost strategy to bring the DPP to underserved communities at high risk for diabetes while simultaneously impacting the professional education of future healthcare workers across disciplines.

REFERENCES

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