

# Translating the Diabetes Prevention Program's (DPP) Lifestyle Intervention to the Community: Making the Connection Latino Pilot Study



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## Introduction

The Diabetes Prevention Program (DPP) demonstrated that an intensive clinic-based lifestyle intervention focused on weight loss, through healthy eating and increased physical activity, had a very powerful impact in the prevention of type 2 diabetes in a clinical sample. The overall goal of the Making the Connection research program is to conduct a translation study of a community-tailored version of the DPP's successful clinic-based lifestyle intervention delivered in community settings by community residents. This research program utilizes a community-based participatory research paradigm to partner with the community. The first phase of this research program included formative work in tailoring the DPP lifestyle intervention for the community and evaluating the feasibility, acceptability, and preliminary impact of the community tailored and delivered program.

## Methods

### Participants

A sample of community individuals at increased risk for type 2 diabetes was chosen to be included in this pilot study. The eligibility criteria included: BMI  $\geq 25$ , not diagnosed with diabetes, family history of diabetes, Latino, 18 to 65 years old, and not pregnant. A total of 12 individuals were recruited into the pilot group (11 female, 1 male). Other socio-demographic characteristics of this group are included in Table 1.

Table 1

Descriptive Statistics for Participants at Baseline

Age (Min=25, Max=57)	M=40.82, SD=10.998
Place of birth	8.3% United States 8.3% Nicaragua 83.3% Mexico
Length of time living in US (Min=7, Max=30 years)	M=18.18 years, SD=7.833
Income	25.0% <\$10,000 41.7% \$10k to \$19,999 16.7% \$20k to \$34,999 16.7% \$35k+
Living status	91.7% Married 8.3% Never married
Employment	41.7% employed
Education	41.7% Elementary School 16.7% some High School 16.7% HS graduate 16.7% some college 8.3% College degree
Understanding of English (1=excellent, 5=poor)	M=4.08, SD=1.240 8.3% excellent 16.7% good 25.0% fair 50.0% poor
Comfortable speaking English (1=very comfortable, 4=not at all comfortable)	M=3.42, SD=0.900 8.3% very comfortable 33.3% somewhat comfortable 58.3% not at all comfortable

## Methods

### Community and Group Tailored Lifestyle Intervention

**Intervention Group Leader and Training.** A Community Health Worker (CHW) with the following characteristics was recruited to lead this pilot group: (a) well-respected and trusted community member; (b) interested in promoting healthy behaviors in the community; (c) some experience in working with community groups; (d) confidence in own ability to affect community change; and (e) bilingual (Spanish and English). As part of a larger CHW training program, the Latino pilot group leader received greater than 20 hours of intensive training followed by ongoing supervision and continued training as needed. Training included (a) background on diabetes prevalence rates and risk factors; (b) overview of the DPP study design, findings, and lifestyle program; (c) general nutrition and physical activity education; (d) strategies for leading/conducting group programs; and (e) specific training protocol for delivering the lifestyle intervention.

**Lifestyle Intervention Program.** The intensive DPP lifestyle intervention consists of a core lifestyle curriculum and a post-core program focused on long-term maintenance. This poster focuses on the findings from the core community tailored group program that included 16 weekly sessions. The core sessions focused on education in healthy eating and initiating and maintaining physical activity. The DPP intensive lifestyle intervention was revised and/or tailored in the following ways: (a) updated with new nutrition and physical activity guidelines (e.g., Dietary Guidelines for Americans—2005; new Food Pyramid—My Pyramid); (b) adapted for group delivery; (c) supplemented with additional educational materials tailored for Latinos (e.g., culturally tailored recipes); (d) supplemented with community based guest presenters (e.g., physician, mental health professional, exercise specialist); (e) supplemented with community driven program enhancements (e.g., walking groups). The content modules for sessions and all supplemental educational materials were available in Spanish and group sessions were delivered in Spanish.

### Assessment Methods

**Feasibility/Acceptability Assessment Methods.** Ongoing process evaluation of the pilot group using qualitative methods was conducted to guide the community tailoring and enhancement of the DPP lifestyle intervention. Data included participant attendance at regular group meetings; adherence with program activities and self-monitoring; and feedback on program sessions. The evaluation team conducted observations and completed observation ratings of each pilot program session to examine intervention delivery. In addition, debriefing sessions and surveys were conducted with participants following each program session to obtain feedback on the program acceptability, feasibility, and barriers to participation.

**Impact/Outcome Assessment Methods.** Participants were assessed at baseline and at end of core intervention. Anthropometric measures of weight, BMI, and body fat were assessed using a Tanita body composition analyzer. Waist circumference was measured using a standard tape measure. Descriptive data on socio-demographic and health background was assessed at baseline. Physical activity levels were assessed using the past 7 days short version of the International Physical Activity Questionnaire (IPAQ) (Booth, M.L. (2000)). Eating habits were assessed using the Fat-Related Diet Habits Questionnaire (Kristal ??). This 20-item scale provides 5 factor scores measuring low-fat/non-fat substitution, modification of meat, avoidance of frying, fruit and vegetable replacement, and avoidance of fat. Lower scores over time reflect an increase in healthy eating.

### Statistical Methods

Paired sample t-tests were used to test for differences over time in means on a variable of interest in a single group.

## Results

**Feasibility.** In general, the pilot group data supported the feasibility of the program. For example, of the 12 participants enrolled in the pilot group, 10 completed the 16-session core program and attended an average of 14 of the 16 core sessions (88%). On average, participants returned 80% of their personal logbooks (including tracking information on eating and physical activity behaviors) and 76% of their pedometer logs. Evaluator observation ratings (1 = needs improvement to 5 = excellent) of the coach across a variety of areas (e.g., presents topics with enthusiasm; prepared for presentation; maintains group focus; appropriately answers questions) ranged from 3.55 to 4.80 on average across all sessions.

**Acceptability.** Overall the qualitative data from the debriefing sessions and participant session surveys support the acceptability of the program. Participants when asked about their satisfaction with the session responded to be extremely satisfied. Participants were asked to rate (1=strongly disagree to 5= strongly agree) their satisfaction with the session content, whether they learned something new about healthy living, and whether they feel confident that they could use what they learned during the session. Ratings on these questions averaged 4.6 (content), 4.5 (learned something new), 4.5 (confidence).

Weekly participant session survey comments also served as a mechanism to determine program acceptability. Some examples of the mainly positive comments are—"Thank you for your interest in our community health and the education you have given us." "I am very grateful to the Healthy Living Program it has helped me very much." In addition, in-depth interviews with participants after the core program also demonstrated program acceptability. Some of the comments from participants include: "My life has changed very much." "I lost 25 lbs and feel great." "Many of my friends are now walking with me that aren't in the program. They see how I have changed my life." "I love this class. I'm going to maintain eating healthy for the rest of my life and for my kids as well."

Baseline anthropometric results are shown in Table 2.

Anthropometric Descriptive Statistics at Baseline

	N	Minimum	Maximum	Mean	Std. Dev.
Weight	12	159.0	216.8	181.1	19.3
Body fat %	12	28.0	48.2	41.7	5.3
BMI	12	28.4	39.7	33.3	3.2
Waist Circumference	12	37.5	50.0	42.6	3.9



Group members celebrate their achievements.



Healthy Life Coach presents on portion sizes

## Results

Results of the paired samples t-tests comparing baseline and end of core program for the anthropometric measures of weight, body fat %, BMI, and waist circumference were all significant. Results from these analyses indicate that there was a significant decrease in all 4 anthropometric measurements between baseline and the end of the core intervention (session 16). Participants, on average lost 8.46 pounds, decreased their body fat by 4.3%, decreased their BMI by 1.56 points, and lost an average of 3.345 inches from their waist.

Results of the paired samples t-tests comparing baseline and end of core program for eating habits also revealed significant changes. Results from these analyses indicate that there were significant increases in healthy eating on 3 of the 5 factors. Factors showing increased healthy eating were low-fat/non-fat substitution, modification of meat (trimming fat, choosing lean cuts), and avoidance of frying. Factors assessing fruit and vegetable substitution and avoidance of fat did not show significant increases in healthy eating.

Analysis of the IPAQ with paired sample t-tests did not show any significant differences in total 7 day physical activity or on walking days, walking minutes per day, or walking mets between baseline and end of core intervention. However, trends were observed over time such that mean number of days walked increased from 2.7 to 4.7 per week and mean minutes walked increased from 41.4 to 61.3 resulting in walking mets more than doubling between baseline and the end of core intervention. Total mets (sum of vigorous, moderate, and walking mets) per week also increased by an end of core intervention all participants reported being engaged in some level of physical activity as compared to baseline where there were reports of completely sedentary behavior.

## Conclusion

In general, this pilot study with Latino individuals supports the feasibility, acceptability, and preliminary impact of the group-format community tailored and delivered lifestyle intervention based on the DPP core lifestyle intervention program. These findings have informed the refinement of the community tailored and delivered lifestyle intervention that is currently being tested in a large-scale translation study.

## References

Booth, M.L. (2000). *Assessment of Physical Activity: An International Perspective*. Research Quarterly for Exercise and Sport, 71 (2): s114-20.

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