Comparison of Commercial and Self-Initiated Weight Loss Programs in People With Prediabetes: A Randomized Control Trial

Authors: Marrero DG; Palmer KN; Phillips EO; Miller-Kovach K; Foster GD; Saha CK
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By: Krystiana Munroe

Study Purpose

To determine if a widely available weight-management program (Weight Watchers) could achieve sufficient weight loss in people with prediabetes compared with a Diabetes Prevention Program-based individual counseling program supported by National Diabetes Education Program materials.

Study

Study type: Individual randomized intervention trial

Study groups: Population consisted of females 18 years old and older

- **Total:** n=225 randomized participants
- **Intervention group:** (WW) n=112 (n = 103 at 6 mo; n = 94 at 12 mo)
- **Control group:** n=113 (n = 82 at 6 mo; n = 81 at 12 mo)

Inclusion Criteria

- Female, 18 years or older
- BMI of 24 or higher (people of Asian descent BMI ‡ 23), complete the 7-item American Diabetes Association (ADA) Diabetes Risk Assessment with a score of 5 or greater.
- Prediabetic, which was determined by a hemoglobin A1c value between 5.7% and 6.5%.
- Women with a self-reported history of gestational diabetes with a hemoglobin A1c value less than 6.5% or causal capillary blood glucose (CCBG) less than 199 milligrams per deciliter were also included.

Exclusion Criteria

- No history of prediabetes
- Currently pregnant or planning to become pregnant during the study
- Any condition or use of any medication that could alter glucose metabolism
- Suffered heart attack, stroke, or transient ischemic attack in the past 6 months
- Uncontrolled hypertension (systolic blood pressure > 180 mm Hg or diastolic blood pressure > 105 mm Hg)
- Received cancer treatment (excluding surgery alone) within the past 2 years (excluding skin cancer)

Exclusion Criteria Contd.

- Reported chest pain, shortness of breath with minimal activity or at rest, or unexplained dizziness or fainting with physical activity
- Chronic lung disease (chronic obstructive pulmonary disease or asthma requiring home oxygen therapy)
- Current use of anti-diabetes medications for the treatment of diagnosed diabetes
- Were unable to communicate with research staff; were unable to read written English; and were unable or unwilling to provide consent.

Intervention

- Intervention participants attended an “activation” session, which was done within 1 week of the baseline assessment.
- The session was conducted by WW coaches who were trained for this study-specific session.
- The session focused on educating participants about the meaning of prediabetes, how the condition increases risk for developing type 2 diabetes, and the role of lifestyle modification to reduce their risk.
- Participants were free to choose a Weight Watchers group session time and location that was convenient for them, and encouraged to attend weekly meetings.
- They were given access to Weight Watchers e-tools, which includes digital tools to track weight, intake, and activity.

Intervention contd.

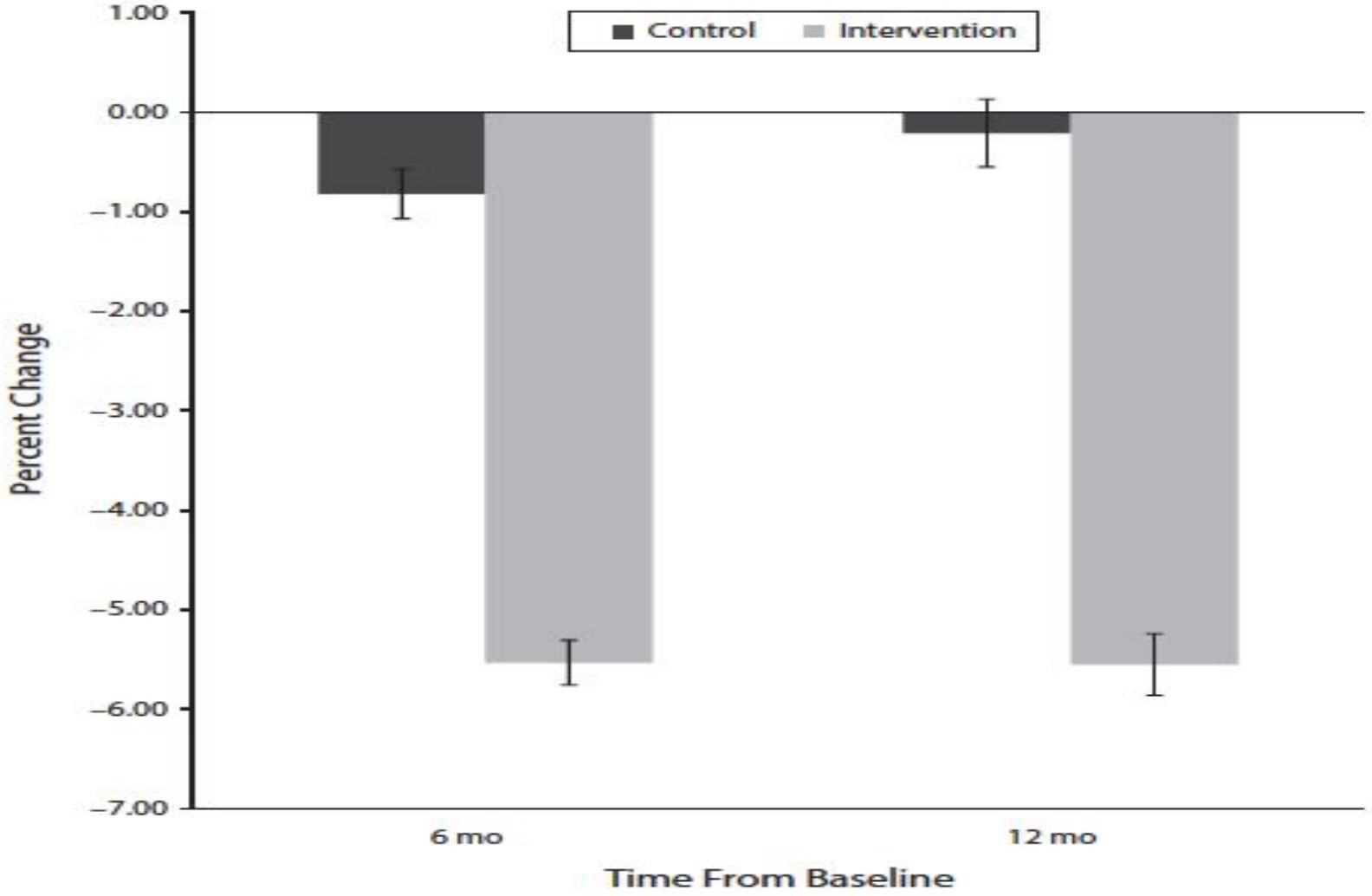
- Participants assigned to the control group were provided a review of how they could initiate a weight loss and activity program with Your Game Plan to Prevent Type 2 Diabetes educational materials developed by the National Diabetes Education Program.
- The meeting reviewed the meaning and implications of prediabetes, the results of the DPP study, an overview of how to initiate a risk-reducing lifestyle program, a reproducible tracker to help monitor their food intake, and a booklet with fat gram and calorie content for common foods.
- This individual counseling was provided by trained research staff which took place during the screening event after randomization.

Results

- Intervention participants lost significantly more weight than controls participants at 6 months (5.5% vs 0.8%) and 12 months (5.5% vs 0.2%; both $P < .001$).
- There were no significant differences between groups on baseline characteristics.
- On average, controls lost 0.8% at 6 months and 0.2% at 12 months and intervention participants lost 5.5% both at 6 and 12 months.
- Intervention participants had 4.6 kilograms more weight loss at 6 months and 5.3 kilograms more weight loss at 12 months than control participants.

Data table

	WW Intervention	Control	P Value
Baseline			
Weight in kg	100.9 (21.7)	100.0 (19.9)	0.74
BMI, kg/m^2	36.9 (7.3)	36.7 (7.0)	.89
At 6 months			
Percent weight change	–5.53 (0.45)	–0.82 (0.50)	<.001
Weight in kg	–5.49 (0.46)	–0.91 (0.51)	<.001
BMI, kg/m^2	–2.03 (0.17)	–0.30 (0.19)	<.001
At 12 months			
Percent weight change	–5.55 (0.62)	–0.21 (0.68)	<.001
Weight in kg	–5.51 (0.63)	–0.22 (0.69)	<.001
BMI, kg/m^2	–2.06 (0.23)	–0.07 (0.25)	<.001


Control
Intervention
1.00
0.00
−1.00
−2.00
−3.00
−4.00
−5.00
−6.00
−7.00
Percent Change
6 mo
12 mo
Time From Baseline

Biases/Limitations

- Funded by Weight Watchers International
- Loss of participants to follow up at 12 months (There was a 15% dropout rate at 6 months and 18% at 12 months).
- Intervention participants were encouraged to attend the weekly Weight Watchers meetings.
- Had access to Weight Watchers e-tools, including digital tools to track weight, intake, and activity.
- Control participants had an emphasis on strategies for tracking food intake and calculating fat grams by using the food tracker and calorie fat gram guide provided in the materials given to them.

Summary

Commercial weight-management programs such as Weight Watchers are effective for achieving lifestyle changes associated with the prevention of diabetes. These programs could help to significantly increase the availability of diabetes prevention programs in community settings. This could produce weight-loss levels that show considerable reductions in people at risk for diabetes, significantly impacting public health.