

Diabetes Educators Implementing Primary Prevention: The Group Lifestyle Balance Program

Kramer, MK, McWilliams, JR, Orchard TJ, Siminerio, LM

Diabetes Prevention Support Center of the University of Pittsburgh Diabetes Institute



Abstract

Objective: Diabetes educators (DE) report receiving increasing numbers of physician referrals for patients at risk for diabetes. The project aim is to determine if DEs can effectively deliver a modified Diabetes Prevention Program (DPP) lifestyle intervention at their community-based diabetes education sites.

Methods: The DPP lifestyle intervention has been adapted by the University of Pittsburgh Diabetes Prevention Support Center (DPSC) to Group Lifestyle Balance™, a 12-session group program. DEs from three diversely located out-patient hospital clinics (urban, suburban, and rural) received training and support for implementation from the DPSC. Adults with pre-diabetes and/or the metabolic syndrome were eligible to enroll with physician referral. Using existing DE referral networks, physician engagement was completed via onsite educational in-services, informative letters and e-mail contact. Newspaper advertisement was also employed. At present, baseline assessment is complete with year-long follow up planned.

Results: A total of 81 participants enrolled in the study, (71 female, 10 male). Participants were primarily white (95%), with a mean age of 53 years. Approximately 89% were obese with a mean BMI of 37.1 kg/m². Mean glucose, triglyceride, and blood pressure levels were 102 mg/dl, 173 mg/dl, and 128/82 mm/Hg respectively. Two-thirds (64%) reported taking medication for hypertension and one-third (37%) for cholesterol.

Conclusion: High-risk individuals were enrolled in GLB using established DE referral systems and newspaper advertisement. Outcomes of this project offer potential for additional prevention services delivered through DEs.

Background

- The Diabetes Prevention Program (DPP) lifestyle intervention was shown to reduce risk for diabetes and the metabolic syndrome, and also to reduce risk factors for cardiovascular disease (CVD).
- The Diabetes Prevention Support Center (DPSC) of the University of Pittsburgh Diabetes Institute provides training and support for health care professionals in delivery of the Group Lifestyle Balance (GLB) program, an adaptation of the DPP lifestyle intervention.
- The GLB is a 12-session group program with the same goals as the DPP intervention: weight loss of 7% and 150 minutes per week of physical activity.
- The GLB program, delivered by trained health care professionals, has been evaluated in several community settings and has been shown to be effective for weight loss and reduction in risk factors for diabetes and CVD.
- Although diabetes educators are trained for provision of education for individuals with diabetes, it has not been demonstrated that they can effectively deliver a lifestyle intervention for individuals at risk for diabetes within their community-based education sites.
- The objective of this project is to determine if diabetes educators can effectively deliver the GLB Program at their community-based diabetes education sites.

Eligibility Criteria

- Males and females age 25 years and older
- No previously reported diabetes
- BMI ≥ 25 kg/m2 AND
 - Pre-diabetes (FPG 100 mg/dl – 125 mg/dl) **OR**
 - At least 3 components of the metabolic syndrome (NCEP ATP III)
 1. Waist circumference > 102 cm in males or > 88 cm in females
 2. Fasting triglycerides ≥150 mg/dl
 3. Low high density lipoprotein (HDL) cholesterol <40 mg/dl for men and <50 mg/dl for women
 4. Blood pressure ≥130/85 mm/Hg or history of hypertension.
 5. Elevated fasting glucose ≥100 mg/dl, but less than 126 mg/dl
- Not pregnant
- Physician referral and ability to provide informed consent

Study population and Recruitment

- Study participants were recruited via:
 - 1) Existing diabetes educator referral networks using educational in-services for physicians and medical staff conducted by the diabetes educators, and letters and e-mail containing information about the GLB program and referral procedures
 - 2) Advertisement in local newspapers
- Physician referral and permission for moderate physical activity were required for participation
- 81 males and females age 26 to 80 in three out-patient hospital community settings (rural, urban, and sub-urban) took part

Methods

- Prospective, one-group non-randomized design .
- Primary outcome is weight loss and achievement of the program goals; secondary outcomes include change in fasting glucose and other risk factors for cardiovascular disease including lipids and waist circumference.
- All study participants attended a baseline assessment visit prior to beginning the intervention.
- DPSC trained diabetes educators deliver the 12 weekly 1-hour sessions over 12-15 weeks.
- Study participants receive a fat and calorie tracking book, a pedometer and booklets for self-monitoring weight, eating and physical activity.
- Participants are invited to attend monthly meetings at completion of core courses for measurement of weight and reporting of physical activity.
- Post intervention assessment visits at 4MO, 8MO, and 12MO are planned.

Baseline Results

- 89% of study participants were obese at baseline with an average BMI of 37.1% .
- 47% of study participants had fasting baseline glucose levels in the pre-diabetes range (100-125mg/dl); 63% had LDL cholesterol levels of 130 mg/dl or higher and/or triglyceride levels of 150 mg/dl or greater.
- Two-thirds of study participants (64%) reported taking medication for hypertension; 90% of male participants reporting taking hypertension medication.
- One-third of study participants (37%) reported taking medication for cholesterol; 70% of male participants reported taking cholesterol medication.

Participant Demographics

	Male (n=10)	Female (n=71)	Total (n=81)
Mean Age	52.4	52.9	52.8
Range	(39-67)	(26-80)	(26-80)
Caucasian	8 (80%)	66 (93%)	74 (91%)
Employed FT/PT	6 (60%)	52 (73%)	58 (72%)
Education:			
High School/GED	1 (10%)	17 (24%)	18 (22%)
Some College/Tech	5 (50%)	32 (45%)	37 (46%)
College Graduate	1 (10%)	17 (24%)	18 (22%)
Graduate Degree	3 (30%)	5 (6%)	8 (10%)

Baseline Characteristics

Parameter (means)	n	Baseline (sd)
Weight (lbs)	81	223.4 (47.25)
BMI (kg/m²)	81	37.1 (6.39)
Waist (inches)	81	44.7 (5.89)
Total Cholesterol (mg/dl)	79	198.9 (45.21)
HDL Cholesterol (mg/dl)	79	46.2 (10.99)
LDL Cholesterol (mg/dl)	75	118.4 (36.67)
Triglycerides (mg/dl)	75	171.6 (95.98)
Glucose (mg/dl)	75	101.9 (16.68)
SBP (mmHg)	79	128.5 (13.77)
DBP (mmHg)	79	82 (8.31)

Conclusion

Participants with pre-diabetes and/or the metabolic syndrome were enrolled in a 12-session lifestyle intervention program using existing diabetes educator referral networks as well as local newspaper advertisement. Baseline results demonstrated that the majority of participants were obese, with almost half having fasting blood glucose levels in the pre-diabetes range, and almost two-thirds with hyperlipidemia (elevated LDL and/or triglyceride level). Outcomes of this project may offer the potential for additional prevention services delivered by diabetes educators, particularly for patients with multiple risk factors. Post-intervention results and impact of the diabetes educator led GLB program will be reported elsewhere.

