

The Diabetes Prevention Program and Potential for Outreach Through the YMCA Model (USA-Research-based)

<http://diabetes.niddk.nih.gov/dm/pubs/preventionprogram/>

Section I: Summary

The Diabetes Prevention Program (DPP) was developed by researchers at George Washington University (Maryland, US) and the University of Pittsburgh Medical Center (Pennsylvania, US) as a clinical trial to determine if lifestyle intervention could prevent or delay the onset of Type 2 diabetes in individuals at risk for the disease. The DPP program showed that certain lifestyle changes, such as revised diet and exercise, can be successfully implemented through an individualized program to significantly reduce the incidence of diabetes. However, as a clinical trial, the DPP model was not specifically designed to translate to a large-scale community-based program. A recent study now shows promise for successful replication and large-scale outreach of the DPP program through the YMCA model.

Section II: Statement of Purpose

The DPP was designed as a 3-year randomized clinical trial involving 27 DPP centers and 1,079 participants of diverse ethnicities, ages, and education. The DPP had two major lifestyle intervention goals for participants: a minimum of 7% weight loss/weight maintenance and a minimum of 150 minutes per week of moderate physical activity such as brisk walking. Key features of the program are:

- Goal-based behavioral intervention
- Case managers or “lifestyle coaches” to deliver the intervention
- Frequent contact and ongoing intervention to help participants achieve and maintain goals
- “Toolbox” strategies to individually tailor the intervention
- Materials and strategies to address the needs of an ethnically diverse population
- Extensive local and national network to provide training, feedback, and clinical support for the interventionists

Goal-based Intervention

The weight loss goal was for participants to lose 7% of initial body weight and maintain the loss throughout the clinical trial. To achieve the goal, behavioral strategies to make long-term changes in fat and calorie intake were taught to participants.

The physical activity goal was for participants to achieve at least 150 minutes of moderate physical activity, such as brisk walking, each week. Participants

who wished to exceed either of the two goals were encouraged to do so, with monitoring.

Case Managers / Lifestyle Coaches

The DPP utilized case managers or “lifestyle coaches” to deliver an individual model of intervention rather than a group-based approach. Lifestyle coaches were responsible for delivering the core curriculum, conducting maintenance sessions, motivating participants to achieve the lifestyle goals, and assuring completion of required data collection. Lifestyle coaches were generally registered dietitians or Master’s level instructors with backgrounds in exercise physiology, behavioral psychology, or health education.

Frequent Contact and Ongoing Intervention

A 16-week core curriculum was given individually to each participant and covered topics such as nutrition, physical activity, and behavioral self-management. The core curriculum sessions also included a private weigh-in, identification of personal barriers to weight loss and activity, and development of an action plan/goals for the next session. Key strategies of the core curriculum included: self-monitoring of weight, dietary modification (with initial emphasis on reduction of total dietary fat rather than calories), self-monitoring of fat/calorie intake and physical activity (participants were given a food scale, measuring cups and spoons, and booklets to record data), adherence/maintenance intervention, and supervised activity sessions.

Individualization Through “Toolbox” Strategies

A “toolbox” of individualized strategies was developed to help each participant identify and overcome specific barriers to achieving and maintaining the lifestyle goals. Less expensive toolbox strategies were applied before more expensive strategies, and each participant was allowed \$100 per year to implement the strategies. Examples of possible toolbox strategies included helping a participant maintain the activity goal by loaning an exercise tape or enrolling in an exercise class. To help achieve the weight loss goal, participants might have received grocery store vouchers or portion-controlled foods such as Slim-Fast.

Strategies to Address the Needs of an Ethnically Diverse Population

Forty-five percent of DPP participants were from ethnic minorities, therefore lifestyle coaches were often chosen from the same ethnic group as the participant, core materials were available in Spanish and English, and ethnically-appropriate topics and activities were chosen for certain group maintenance sessions.

Extensive Network of Centralized Training, Feedback, and Support

Training, feedback, and support of DPP staff was provided through an extensive, centralized network and included standard training for all lifestyle coaches, access to local experts in nutrition and exercise, and monthly individual and regional conference calls with lifestyle staff to provide guidance and consultation. A remote data entry system also allowed for daily

access to progress reports on individual participants as well as summary data.

Section III: Outcomes

The Diabetes Prevention Program proved to be very successful in the clinical setting, with a 58% reduction in the incidence rate of diabetes for participants. This finding was true across all participating ethnic groups and for both men and women. Participants aged 60 and older particularly benefited from the lifestyle changes, reducing their risk by 71 percent. Approximately 5% of the lifestyle intervention group developed diabetes each year during the study period, compared with 11% of those in a control group.

An additional outcomes study of the DPP is currently underway to further investigate the impacts of the DPP model on the original set of participants. Researchers are investigating the durability of program outcomes, the clinical course of new onset cases of diabetes, and differences between men and women and minority populations.

DPP Outreach Through the YMCA

The DPP trial showed tremendous success in reducing the risk of Type 2 diabetes through behavioral and lifestyle changes, yet the researchers acknowledged that the clinical design of the program (strict enrollment criteria, major lifestyle changes, etc.) made it difficult to translate to broader community-based programs. However, a recent study by researchers at the Indiana University School of Medicine indicates that community organizations such as the YMCA may provide an appropriate model to implement the DPP at the community level.

The YMCA has a long history of implementing successful health promotion programs through its strong foundation in communities and existing infrastructure. There are over 2,600 YMCA facilities nationwide, which serve nearly 21 million members in over 10,000 communities.

The Indiana pilot involved 92 participants from two YMCA facilities in semi-urban neighborhoods in greater Indianapolis. Half of the participants received group-based DPP intervention based on the DPP core curriculum. The other half served as a control group and received brief counseling alone. After six months the DPP intervention group achieved a 6% decrease in body weight compared to 2% in the control group, a statistically significant difference. The DPP group also saw greater changes in total cholesterol. The outcomes were maintained in followup visits after 12-14 months.

The successful results of the YMCA pilot warrants further study of the YMCA as a community-based model for widespread dissemination of an evidence-based, low-cost, lifestyle approach to diabetes prevention.

Section IV: Additional Resources

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