Background

Limited participation in health promotion activities is noted in people with diabetes, even though lifestyle changes have been found to be essential in decreasing the risk of complications of the disease. Barriers to health promotion in people with diabetes have been identified through qualitative research and surveys and include:

- Lack of knowledge
- Lack of coordinated care
- Feelings of helplessness, depression, and lack of confidence
- Feeling tired

Participation in regular physical activity is strongly associated with lower risk for cardiovascular events in subjects with diabetes, and several small studies have demonstrated improved glycemic control following aerobic and resistance exercise in people with diabetes. However, exercise remains an underutilized therapy. Dietary recommendations have consistently been found to reduce weight and improve glucose control in people with diabetes. However, interventions that incorporate intense, supervised exercise with customized dietary interventions and education are absent from the literature. Further, exercise interventions at the frequency (3-5 days per week) recommended by ACSM for individuals with type 2 diabetes have not been studied.

Determining the feasibility of an intervention is an often-stated goal focusing specifically on the analysis of recruitment, retention, and adherence.

Methods

The feasibility of an intense, comprehensive health promotion program with aerobic and strength training, dietary counseling, and education were assessed in this study. During a 6-month period, our goal was to enroll 20 subjects in the 10-week health promotion intervention to identify recruitment, retention, and adherence issues that would be relevant to implement this intervention in a future large study.

Subjects: To be enrolled in the study, subjects had to be diagnosed with type 2 diabetes, age 40-70 years old, and receive documentation from their physician that they were medically stable to participate in a supervised exercise program. Exclusion criteria: (1) Serious, symptomatic medical problems (2) Current active involvement in regular exercise (3) Open wounds on the feet (4) Not able to ambulate independently (5) Stroke or other central nervous system pathology

Recruitment Strategies: Subjects were recruited for this study through flyers posted at local diabetes clinics & safety net clinics, distributed at health fairs, and via broadcast email at the medical center. We also contacted subjects who were known to us through previous studies.

Intervention: The 10-week program included education, exercise, and nutrition components (see Table 1). The program was implemented with small cohorts of subjects to promote the development of a supportive network. The weekly time commitment ranged from 3 – 5.5 hours per week. Subjects were offered a $50 stipend at the midpoint and $50 at the completion of the study (total of $100) to help with transportation expenses.

Statistical Approach:

Recruitment: Recruitment was assessed by tracking the number of potential subjects assessed for eligibility, those who were excluded because of subject inclusion criteria, and those who declined to participate.

Retention: Information on retention was acquired by tracking the number of subjects who discontinue the intervention during the study along with their reasons.

Adherence: For the subjects that complete the study, the % of total sessions attended were documented. We also conducted focus group “exit interviews” at the end of the intervention to gather feedback on recruitment, retention and adherence issues.

Results

Recruitment: We distributed hundreds of flyers in the community, but only 1 enrolled subject was recruited by this method. The other subjects were recruited via university broadcast email (n=5), previous study contacts (n=3), and word of mouth (n=2).

Retention: Of the 11 subjects entered into the study, 5 (45%) did not complete the 10-week intervention. Subjects: To be enrolled in the study, subjects had to be diagnosed with type 2 diabetes, age 40-70 years old, and receive documentation from their physician that they were medically stable to participate in a supervised exercise program. Exclusion criteria: (1) Serious, symptomatic medical problems (2) Current active involvement in regular exercise (3) Open wounds on the feet (4) Not able to ambulate independently (5) Stroke or other central nervous system pathology.

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Conclusions

This systematic approach to feasibility revealed significant issues with recruitment and retention that would need to be addressed for future studies. Future research should incorporate more aggressive recruitment strategies to connect directly with potential subjects rather than relying on distribution of flyers. Other suggestions are to modify the physician consent letter and offer flexible times for the sessions. The high levels of adherence indicate that the intervention was feasible for this subset of subjects.

Bibliography

9. meal with lean meats and vegetables.
10. Review goals with subjects at follow-up.

Table 1. Description of Intervention

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