Neighborhood Diabetes Education Program
The Effect of Exercise Implementation on BMI

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ABSTRACT

East Flatbush and Crown Heights has a very high prevalence of diabetes with about 1 out of every 8 residents having diagnosed type 2 diabetes. The present study examined the effect of an exercise regimen of moderate intensity on BMI. 15 consenting adults ranging mostly from overweight to class II obesity by national BMI standards participated in a compound exercise regimen composed of aerobic exercises and resistance training. Exercises were added biweekly and performed daily in the form of three sets and ten reps. Each new exercise that was added to the regimen after the first two weeks was compounded to the existing exercise regimen. This routine was implemented daily for the entire sample group for a duration of 12 weeks. All 15 participants completed the exercise regimen for the duration of the program despite occasional absences by some participants. 13 out of 15 participants experienced a slight decrease in BMI for the duration of the program. One individual experienced no change, while another experienced an increase in BMI during the implementation of the program. Overall there was a 1.92 % decrease in BMI and weight over the duration of 12 weeks. In comparison with previous research, this study strengthens the use of exercise as a tool to decrease adiposity and lower BMI.

BACKGROUND

- Diabetes has become a major cause of death within the United States and is on the rise especially within the Brooklyn area. Various studies have shown a positive correlation between the advent of exercise in an individual and the decreased progression of type 2 diabetes.

- The numerous mechanisms by which exercise accomplishes this include improved glucose control, decreased adiposity, and increased cardiovascular endurance. Specifically, aerobic exercise and resistance training produce this outcome by increased insulin sensitivity, cardiovascular endurance and muscle mass.

- Furthermore, it is shown that exercise along with moderate dietary changes have a significant impact on the reduction of diabetic progression.

OBJECTIVES

- Lower participant’s BMI through an exercise regimen of moderate intensity
- Learn form and proper technique for exercise regimen as to avoid injury
- Create a routine that can be sustained after duration of the program

METHODS

- A specific exercise was taught to the participants every two weeks. This exercise was practiced everyday until the start of the following two weeks in which a new exercise was taught and the cycle repeated. Once a new exercise was taught to the participants, it was added to their previous collection of routines and done in tandem.

- The exercises were performed in sets of three with 10-12 reps, with interfering 1-minute rests between sets. Lightweight dumbbells were used to increase intensity, but only according to participant’s preference.

- One exception to this routine was HIT (High Intensity Interval Training). This involved high intensity movements based on an individual’s potential, followed by periods of rest or lower intensity movement. The higher intensity movement lasted for a duration of 30 seconds while the lower intensity movements lasted for 1 minute. This alternating cycle lasted for a duration of 10 minutes.

RESULTS

- Mean BMI decreased by 1.92%
- Mean weight decreased by 1.92%

CONCLUSIONS

- A consistent exercise regimen of moderate intensity can lower BMI
- The exercise regimen be continued in conjunction with dietary modification to maximize program efficiency
- Periodic check-ins by a program director to track progress and change the occasional routine can contribute to program sustainability