

Assessment of Physical Fitness of Girls on the Go Program Participants

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Abstract

Background: Less than half of children and adults meet physical activity recommendations. Effective interventions are especially needed to improve physical activity in African American females because they report less physical activity than their Caucasian and male counterparts.

Objective: The aim of this study was to determine the effect of the Girls on the Go after-school program on the physical fitness of its participants.

Methods: Half-mile run times for “Girls on the Go” participants were collected at the beginning of the program and three months later at the conclusion of the program. Only three participants were present for both runs.

Results: Due to the small sample size, no statistical analysis was conducted, but there appears to be no significant differences between pre- and post-tests.

Discussion: Possible explanations for the lack of change from pre- to post-test are discussed. The results of this study could be used to inform further research.

The positive effects of physical activity (PA) are well documented. PA has been shown to reduce all-cause mortality by reducing the risk of hypertension, cardiovascular disease, type 2 diabetes mellitus, and some types of cancer (United States Department of Health and Human Services [USDHHS], 1996). It is also a preventative treatment for obesity, the prevalence of which has increased so greatly that the Centers for Disease Control and Prevention (CDC) states that there is an ‘epidemic’ of obesity in the United States (CDC, 1999). Both physical activity and obesity are identified by *Healthy People 2010* (USDHHS, 2000) as leading indicators of public health.

Despite these benefits, less than one third of adolescents and adults in the United States participate in the recommended amount of physical activity of 30 minutes on all or most days of the week (USDHHS, 2006). In both adults and adolescents, disparities exist in PA. Males consistently participate in more PA than females, Caucasians more than African Americans, and individuals of higher socioeconomic status (SES) more than those of lower SES (USDHHS, 2006). The disparity between males and females widens considerably around entry to middle school, and African American females have lower activity rates

than their Caucasian female and African American male peers in both adolescents and adults (Ogden et al., 2006). As is true of many disparities, the exact cause of these differences is not well understood. It has been suggested that the racial disparities may be explained by the higher likelihood of African Americans to live in communities with barriers to physical activity (Bradley, McMurray, Harrell, & Deng, 2000) such as lack of access to safe play spaces and to face financial and transportation barriers that prevent participation in organized sports and activities (Trost, Pate, Ward, Saunders, & Riner, 1999).

After-school programs have a unique ability to provide youth with opportunities to be physically active which minimize or eliminate safety, financial and transportation barriers. This allows students to develop factors positively correlated with PA, such as self-efficacy, positive beliefs regarding physical activity outcomes (Trost, 1999), intention to be active, perception of physical ability, and previous physical activity (Sallis, Prochaska, & Taylor, 1999). In light of the pressing need for effective programs to combat inactivity, our primary aim was to assess the effect of an after-school program for girls on physical fitness.

Methods

Program

'Girls on the Go' is a free after-school program that educates elementary school-aged females about physical, mental, and emotional health. The group meets once a week under the supervision of local college students who serve as group leaders. Each session begins with a walk/run in the school's gymnasium. The length of the walk/run increases incrementally throughout the semester. This is followed by a lesson on topics such as self-esteem, conflict resolution, or goal setting. Each session ends with a nutritious snack and discussion time. Outside of the sessions, participants use a workbook to complete activities designed to introduce or reinforce the lessons presented in the session. They also complete physical activity diaries to raise awareness of activity outside of the sessions.

Participants

Students are referred to Girls on the Go by teachers who identify them as likely to benefit from the program. Participants of this study were Girls on the Go members who were present at both baseline and post-intervention runs. Girls on the Go generally consists of 5-9 students but members do not necessarily attend consistently throughout the semester and new students are added as they are referred. This instability of attendance explains the small sample size of this study, as only three participants were present at both runs.

All students were in the third and fourth grades at the time of the run. The elementary school where the run took place consists of 84% African American and less than 1% non-Hispanic White students (School District of Philadelphia [SDP], 2006). Over 85% of students in the school are eligible to participate in the reduced-price lunch program (SDP, 2006).

Run Trials

We used a simple pre- and post-intervention method to assess for improvement in physical fitness. A half-mile run was administered at baseline (pre-intervention) and at three months (post-intervention) and the run times analyzed for improvement. The school's gymnasium was used to minimize logistical difficulties. The small size of the gym prevented a full mile run. For this reason the participants' half-mile times were collected.

Statistical Analysis

Due to the small sample size, only descriptive data will be presented.

Results

Only three participants completed both run trials (Table 1). Though statistical analyses cannot be conducted on such a small sample size, times were decreased from pre- to post-intervention by an average of 43 seconds.

Table 1. Participant Walk/Run Times in Minutes

Participant	Pre-intervention	Post-Intervention	Change
1	6:37	6:22	:15
2	6:51	6:13	:38
3	7:41	6:24	1:17

Note: Only descriptive statistics could be provided due to the small sample size

Discussion

The purpose of this study was to determine the effect of an after-school program on the physical fitness levels of its participants. The Girls on the Go program addresses many barriers that inhibit PA in urban pre-adolescent African American females. By providing a free physical activity program at the participants' school and scheduling it immediately after-school, the program avoids the cost, transportation, and safety barriers identified by Trost et al (1999). The elimination of these barriers allowed for the participation of students in the program and provided them with an opportunity to engage in structured PA that they may not have otherwise had.

The education portion of the program, in turn, strengthens the positive correlates of PA (Sallis, 1999). Classroom discussion increases awareness of the positive outcomes of PA, and the weekly increase in time spent running demonstrates to the participants their increasing PA efficacy. Furthermore, attendance indicates an intention to be active because PA is pursued in every session. However, it is outside of the scope of this study to determine how these improvements affect the PA choices of participants. It appears, however, that there was not sufficient short-term impact to affect the

outcome of the timed runs.

Given the need for interventions to address the growing problem of obesity in the African American female population, it is not surprising that Girls on the Go is not the only program of its kind. After developing a program similar to Girls on the Go, Klebanoff and Muramatsu (2002) developed a set of recommendations for programs aimed at increasing PA in urban African American preadolescent females. These researchers suggested use of existing infrastructure to recruit participants and obtain resources, the combination of mutually reinforcing PA and education, and the involvement of participants' families. Additionally, they suggested the use of posters that rewarded attendance with stickers or other small decorative markers, the use of workbooks decorated by participants to reinforce lessons and increase participant ownership of the program, and the choice of age-appropriate enjoyable activities that increased in length and difficulty as the program progressed. Girls on the Go met all of these suggestions, in some cases using the exact techniques (attendance posters and personalized workbooks) suggested. Unfortunately the program from which these suggestions were derived produced only descriptive data, so the effectiveness of these techniques cannot be assessed.

Robbins, Greteback, Kazanis, and Pender (2006) measured the effect of a PA intervention aimed at pre-adolescent females of low socioeconomic status. The program combined computer-based surveys that were used to deliver individually tailored suggestions and feedback with one-on-one counseling with a nurse practitioner. There was no PA component. Weekly surveys were used to measure number of days of PA each week and total minutes of vigorous and moderate PA over four days, including two weekdays and two weekend days. Although they received positive feedback from the participants indicating that the participants enjoyed the program and would recommend it to a friend, no statistically significant difference between the intervention group (n=45) and the control group (n=32) were found in any PA indicator measured.

The obvious limitation to the Girls on the Go study is the small sample size, which did not allow for any statistical analyses. In addition, it is possible that

the single weekly meeting and small portion of time devoted to PA was not sufficient to develop changes in fitness. It is also possible that the three-month time frame was too short to elicit effects on fitness. Finally, a half-mile test was not ideal, but was used due to logistics of the study site. A mile walk/run test would have been preferable for field data collection

The Girls on the Go study does suggest several avenues for future research. A study which measured the run times of Girls on the Go participants every week, rather than just twice, might avoid the small sample size encountered in this study. Alternately the final run trial could be held at the same time as the program's end of semester party, or another incentive could be offered, to improve participation.

It would also be informative to study the non-PA aspects of the Girls on the Go program, such as the self-esteem and conflict resolution. The methods to be used in such a study would be best chosen by a researcher familiar with such variables, but a survey could easily be administered pre- and post-intervention. Perhaps the most informative study possible would combine these suggestions to investigate correlation between the PA and non-PA components of the program.

Conclusion

A short-term after-school program appeared to slightly improve the physical fitness levels of elementary-school-aged girls, but the improvement was not statistically significant. Future research needs to be conducted that includes a larger sample size and a more appropriate fitness assessment.

Special Thanks to Dr. Stella Volpe for her guidance on this student inquiry.

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