

Adolescent health brief

“Energy Up”: A Novel Approach to the Weight Management of Inner-City Teens

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Abstract

There are few successful adolescent obesity prevention programs. We evaluated “Energy Up,” an innovative program for inner-city girls that focuses on addictive food avoidance, exercise, and self-esteem building. Over a 9-month period, obese participants lost 12.9 pounds and overweight participants lost 2.9 pounds, prompting expansion to other schools. © 2007 Society for Adolescent Medicine. All rights reserved.

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Adolescent obesity; Community intervention; Self-esteem; Food addiction; Exercise

The prevalence of American adolescent obesity tripled in the past 30 years; currently over 17% of adolescents are obese [1]. Most childhood obesity interventions are rooted in theories of social learning and the health belief model, and focus on enhancing health education, physical education, and food within the school environment. In a review of recent programs, only a few American interventions significantly impacted weight: (1) a 2-year intervention with ethnically diverse students in Boston decreased obesity by 3% compared to a 2% increase in a control group; (2) a 12-week dance program with minority children in California demonstrated a .8 loss of BMI units in girls compared to a gain of .3 BMI units in controls; and (3) a California intervention to reduce television watching demonstrated less gains in BMI [2].

Given the limited success of most childhood obesity interventions, alternate approaches need to be explored. Two such approaches include treating obesity as a food addiction and improving self-esteem [3,4]. Overeating behaviors and drug addiction share common neurological pathways and behavioral features [5]. Building self-esteem

is an established approach to treating many forms of addiction, and may be useful in treating obesity. While some school-based programs aim to improve self-esteem in regard to body image, few focus on self-esteem as its own entity [5,6].

This paper describes the experience of an innovative, school-based, nutrition and fitness program rooted in self-esteem building, that addresses obesity within the framework of food addiction.

Methods

Setting

This program took place at a 452-student, all-girl, parochial high school in New York City. Most students (98%) are girls of color, predominantly Latina, and the majority receives financial aid. Ninety percent of freshmen complete high school and 98% go on to college. All students receive physical education once per week, and 27% participate in extracurricular sports. Nationally, 33% of high school students receive daily physical education, and approximately half are involved in team sports [7].

The program

“Energy Up” was introduced to the school upon students’ requests as an 8-week pilot program during the 2002–

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Table 1
Principles and components of “Energy Up”

Principle	Theory	Activity
Do something nice for others	Being nice to others helps build self-esteem. Low self-esteem is a trigger for overeating.	Homework for daily acts of kindness to others.
Positive affirmations	A positive self-view is vital to good health. Affirmations help build self-esteem.	(1) Each program begins with group recitation of catch phrases such as “I am healthy, I am happy, I am energized.” (2) Homework for daily individual recitations.
Avoid foods containing flour, sugar, and salt	These foods are triggers for uncontrollable eating. Just as many alcoholics cannot stop after one drink, many people cannot limit themselves to a small portion of trigger foods.	(1) Samplings of healthy foods conclude each meeting. (2) Homework to avoid trigger foods. (3) Specific exercises to find healthy foods at local stores/restaurants. (4) Specific exercises to cook without trigger foods.
Regular exercise	Energy is like a muscle, it will waste away without use.	(1) Weekly hour of group aerobic activity. (2) Homework for daily individual exercise.

2003 academic year. The program’s popularity led to its expansion to a 29-week program during the 2003–2004 school year; in this report we describe the experience for the 2003–2004 school year. Evaluation of the program was approved by the Institutional Review Board of Columbia University Medical Center.

“Energy Up” was created by a celebrity lifestyle and fitness coach. In this program, overeating is perceived as the result of food addiction that can be prompted by negative self-views and behaviors, and triggered by certain foods (i.e. flour, sugar, and salt). Knowledge, regular exercise, positive self-views, and avoidance of “trigger foods” combat the unhealthy behaviors that can lead to obesity. Weight is not the focus of “Energy Up”; the program avoids using stigmatizing language, such as “obesity” [4]. Over the course of 9 months during the 2003–2004 school year, 29 weekly 2-hour sessions took place, led by the program’s creator and attended by school faculty and students. Specific activities are described in Table 1.

Recruitment

Participation was voluntary and open to all students with parental permission. Incentives for participation included weekly prize raffles and group television appearances on the “Today Show.”

Measurements

Height and weight were obtained by physicians at the start of the program in September 2003, and upon its conclusion in May 2004. Students weighed themselves every session. At baseline, girls were classified by body mass index (BMI) as: obese (BMI \geq 95th percentile), overweight (BMI between 85th and 95th percentile), and normal (BMI < 85th percentile) [8,9].

Outcomes and analysis

We describe changes in weight and BMI for students attending 2+ sessions. For obese and overweight girls, we used Pearson correlation to correlate attendance and weight loss. We compared changes in weight and BMI to expected

weight and BMI of standardized growth charts [10]. Analysis was completed with SPSS version 13.

Results

Forty-six girls participated in Energy Up. Their mean age was 14.4 years (range 12–18). Results are presented for the 39 girls who attended 2+ sessions, and for whom height was obtained and BMI was calculated. Based upon initial BMI, one quarter of participants (28%) were obese, half (49%) were overweight, and one quarter (23%) were normal. The weight change for the entire group was a loss of 3.37 pounds, and 50% of all participants lost weight. Obese girls (N = 11) lost an average of 12.9 pounds (Figure 1), (median -7.8 , range -35 to $+1$), and had a mean BMI change of -2.32 kg/m² (median -1.43 , range -7.4 to $+0.2$). Overweight girls (N = 19) lost an average of 1.92 pounds (median 0 pounds, range -45 to $+26$ pounds), and had a mean BMI change of -0.32 kg/m² (median 0, range -7.1 to $+4.0$). Girls with normal BMI (N = 9) gained 2.9 pounds (median $+2.4$, range -1.8 to $+7.8$) and 0.52 kg/m² BMI (median $+0.4$, range -0.4 to $+1.6$).

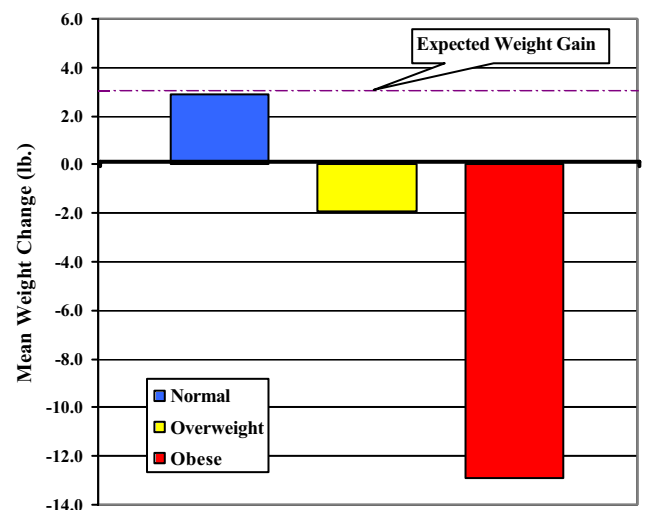


Figure 1. Average weight loss per weight category in comparison to expected 9-month weight gain for age (N = 39) [9].

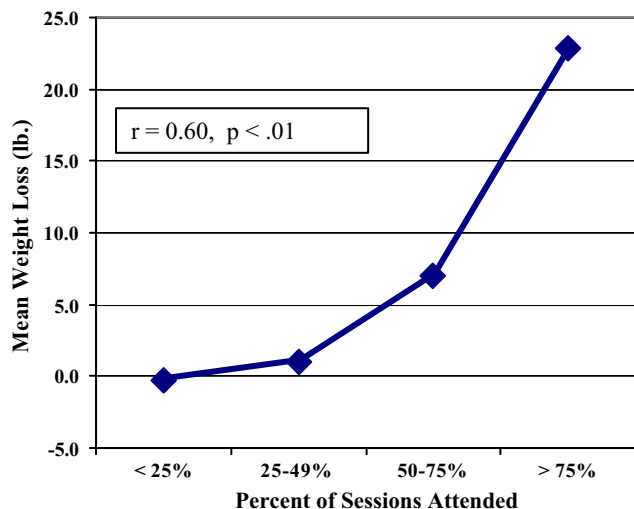


Figure 2. Correlation between amount of weight loss and program attendance for obese and overweight girls (N = 30).

For obese and overweight girls (N = 30), a positive Pearson's correlation of .60 ($p < .01$) was found between weight loss and extent of program participation (Figure 2).

Discussion

We describe the experience of an innovative lifestyle program in an inner city all-girl high school. The majority of "Energy Up" participants lost weight, and this was achieved during a period of expected weight gain [10]. Obese girls lost an average of 12.9 pounds. In comparison to reports in the literature, such weight loss is dramatic, and occurred in a minority, inner-city population at high-risk for adult obesity.

This program was innovative in its approach of focusing on food addiction and self-esteem building. Girls were coached to overcome barriers to healthy food consumption and regular exercise, as well as avoidance of trigger foods. Equal emphasis was given to building self-esteem through kind behavior to others and positive affirmations. This approach differs from the majority of interventions that focus mainly on health education and the school environment. Another unique feature was student involvement in program planning, which increases the likelihood of program success and further dissemination.

This pilot program was designed as a service, and has limitations as a unit for analysis. The sample size was small

and there was no comparison group. Influences of school environment, media attention, and the high level of motivation associated with a new program were not assessed. As participation was voluntary, the program may have attracted more motivated girls. Participants may not be representative of other inner-city adolescents.

"Energy Up" continues at the original school, and has expanded to other schools. Further research is needed to evaluate program effectiveness and to identify successful components that can be applied to different populations.

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