Active Generations: An Intergenerational Approach to Preventing Childhood Obesity

DANILEA WERNER, PhD, LCSWa JAMES TEUFEL, MPH, PhDb PETER L. HOLTGRAVE, MPH, MAc STEPHEN L. BROWN, PhDd

ABSTRACT

BACKGROUND: Over the last 3 decades, US obesity rates have increased dramatically as more children and more adults become obese. This study explores an innovative program, Active Generations, an intergenerational nutrition education and activity program implemented in out-of-school environments (after school and summer camps). It utilizes older adult volunteers to implement a version of the evidence-based childhood obesity prevention program, Coordinated Approach to Child Health, in 8 US cities.

METHODS: Approximately 760 children in third- to fifth-grade participated in Active Generations, a 10-lesson, intergenerational, childhood obesity prevention program. Children completed an age-appropriate survey instrument, the Active Generations survey (AGS). The AGS is a valid and reliable, self-administered, self-report, paper-and-pencil survey designed to assess knowledge, attitudes, and behaviors. It was administered by trained volunteers on the first day and last day of the program. Constructs assessed included physical activity, nutrition, and media use.

RESULTS: Students significantly increased their reported fruit and vegetable consumption post-program. For example, the percentage of students reporting eating 3 or more servings of vegetables per day was 16% greater post-program. Students were more likely to report reading food labels and greater confidence that they could participate in physical activity. They also significantly decreased their daily screen time.

CONCLUSIONS: Active Generations is a promising childhood obesity prevention program.

Keywords: childhood obesity; after-school programs; intergenerational programs.


Over the last 3 decades, obesity rates in the United States have increased dramatically as more children and adults become obese. According to the Centers for Disease Control and Prevention (CDC), the prevalence of adult obesity has increased in all states.1 A recent survey found that 65% of Americans are overweight and over 30% are obese,2 a percentage which has doubled since 1980.1 Among those ages 6 to 11 the obesity rate has more than tripled2 and the 2007 Youth Risk Behavior Survey (YRBS) found that 13% are obese.3 Many of these children will carry those extra pounds into adulthood.4-8 Whitaker and colleagues found that overweight children aged 6 years or older exceeded 50% probability of becoming obese adults compared with 10% for non-overweight children.8 As obesity rates increase, so do health risks. A study conducted by Freedman and colleagues found that 70% of a population-based sample of 5- to 17-year-olds, had at least 1 cardiovascular disease risk factor.9

A decrease in physical activity, whether due to increased screen time, a lack of exercise or play opportunities, or the absence of community policies that enable or promote active living, is a primary contributor to growing obesity rates among children. However, physically active children are more likely to remain physically active throughout adolescence and possibly into adulthood. For these reasons, the CDC recommends that all children participate in 60 minutes of activity that increases the heart rate for at least 5 days a week.4,9,10 To aid in the fight against obesity, almost every state requires some form of physical education in school. However, few meet the National Association for Sport and Physical Education recommendation of 150 minutes a week of instructed physical education for elementary school children.11

---

aAssistant Professor, (dww0004@auburn.edu), Auburn University, 7018 Haley Center, Auburn, AL 36849-5256.
bNational Health Director, (jteufel@oasisnet.org), The OASIS Institute, 7710 Carondelet, Suite 125, St. Louis, MO 63105.
cCATCH Healthy Habits National Coordinator, (pholtgrave@oasisnet.org), The OASIS Institute, 7710 Carondelet Avenue, Suite 125, St. Louis, MO 63105.
dAssociate Professor, (slbrown@siu.edu), Southern Illinois University at Carbondale, Mailcode 4632, Carbondale, IL 62901.

Address correspondence to: Danilea Werner, Assistant Professor, (dww0004@auburn.edu), Auburn University, 7018 Haley Center, Auburn, AL 36849-5256.
Over the past decade, children and adults have decreased their physical activity and increased their screen time.\textsuperscript{12} Screen time is defined as time spent in front of a screen playing videogames, working or playing on a computer, and watching television and movies. Increased screen time is associated with increased rates of obesity.\textsuperscript{7,12} The 2007 YBRS found that over 35\% of students reported spending 3 hours or more watching television on school days.\textsuperscript{3} For each additional hour spent in front of a screen, the odds of being overweight increase by 20\% to 30\%.\textsuperscript{7} Screen time is mostly sedentary\textsuperscript{7} and research has found that it is associated with increased consumption of high-fat, high-sugar, and high-caloric food.\textsuperscript{13}

In addition to decreased physical activity and increased screen time, nutrition plays a key role in the prevalence of obesity. Increases in the availability and consumption of high-caloric sweetened beverages and nutrient deficient, high-fat and -sodium fast food contribute to the obesity problem.\textsuperscript{14–16} At local levels, school districts and after-school providers offer a variety of programs to impact childhood obesity. Many are school based, given the ability of such programs to reach large numbers of children for long periods of time at relatively low cost, but many of the projects or initiatives are not research based or evidence based nor are they adequately evaluated.\textsuperscript{17–22}

Growing in number over the last 10 years are intergenerational programs that seek to address obesity among adults and children. These programs include Playworks, which provides, during school recess, structured physical activities to children that are facilitated by both young and older adult volunteers, including parents and other relatives;\textsuperscript{23} and projects funded by the Active for Life \textsuperscript{®}: Generations Working Together to Prevent Childhood Obesity (Generations) initiative, which have demonstrated increases in physical activity and the adoption of healthier eating habits among adults ages 50 and older and children ages 3 to 12 in low-income neighborhoods.\textsuperscript{24} Additional evidence is needed to determine the effectiveness and replicability of intergenerational projects, programs, and initiatives. The purpose of this study is to evaluate an intergenerational childhood obesity prevention project called Active Generations.

**METHODS**

**Participants**

Participants were children in third to fifth grades who completed the Active Generations program. Approximately 760 children, or about 75\% of the child participants, completed the survey. Approximately 38\% of participants were in third grade; 45\% were in fourth grade; and 17\% were in fifth grade. The median age was 9 years old. The percentage of male and female participants was about equal (53\% female). The plurality of participants was African American (43\%), Caucasian (25\%), Hispanic/Latino (13\%), and American Indian or Asian (5\%), with 14\% identifying their race as “other.”

**Instruments**

The Active Generations pre- and post-program evaluation used an age-appropriate survey. The survey was administered on the first and last days of the program for each group of children. The Active Generations survey (AGS) was an abridged version of the Coordinated Approach to Child Health (CATCH) Kids Club survey, also called the After-School Student Questionnaire (ASSQ), and was designed to be completed by children in grades 3–5 in about 20 minutes. The original CATCH Kids Club Questionnaire was based on the Health Behavior Questionnaire and School-Based Nutrition Monitoring Student Questionnaire, which included reliable and valid survey items.\textsuperscript{25–29} The AGS was comprised of 34 time 1 (pre-program) and 30 time 2 (post-program) items, with the 4 additional items at time 1 pertaining to demographic questions (ie, grade, age, gender, and race/ethnicity), which were excluded at time 2. Sample items from the AGS are displayed in Table 1. The AGS was 24 fewer items than the original ASSQ. The reduction in survey items was largely due to the decrease in the number of dichotomous forced choice food preference questions in the AGS (eg, choosing either wheat bread or white bread), from 18 in the ASSQ to 6 in the AGS, and other similar food preference questions, because preferential food choice was not a local area of this study. Similar to the ASSQ, the AGS assessed knowledge, attitudes, and behaviors by self-report and was a self-administered paper-and-pencil survey. The constructs assessed

<table>
<thead>
<tr>
<th>Table 1. Sample Questions From the Active Generations Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical Activity</strong></td>
</tr>
<tr>
<td>1. Yesterday, did you exercise or participate in sports activities that made your heart beat fast and made you breathe hard for at least 20 minutes? (eg, basketball, jogging, skating, fast dancing, swimming laps, tennis, fast bicycling, or aerobics)</td>
</tr>
<tr>
<td>2. How sure are you that you can keep up a steady pace without stopping for 15-20 minutes when you are physically active?</td>
</tr>
<tr>
<td><strong>Nutrition</strong></td>
</tr>
<tr>
<td>1. Yesterday, did you eat any vegetables? (vegetables are salads; boiled, baked and mashed potatoes; and all cooked and uncooked vegetables.) Do not count French fries or chips.</td>
</tr>
<tr>
<td>2. From which food group should you eat the most servings each day? (Choose only 1 group)</td>
</tr>
<tr>
<td><strong>Media Use</strong></td>
</tr>
<tr>
<td>1. How many TV shows or movies per day do you usually watch during the week?</td>
</tr>
<tr>
<td>2. During the week, how many hours per day do you usually play video games such as Nintendo, Sega, Playstation, XBox, games at the arcade, or use the computer to surf the Internet?</td>
</tr>
</tbody>
</table>
included physical activity, nutrition, and media use (ie, screen time). Trained volunteers oversaw survey administration.

Once completed, the surveys were compiled and batch mailed to a central location for program evaluation. Surveys were scanned into a database using Teleform, a survey reader computer program. After scanning, the data were periodically checked for the quality of electronic database entry (ie, proper transformation from paper survey to electronic database).

Procedure

In 2006, OASIS, a national nonprofit organization that specializes in civic engagement for adults over age 50, partnered with the creators of the evidence-based childhood obesity prevention program CATCH to introduce a new intergenerational approach to combat childhood and adult obesity. Originally created by research teams from the University of California at San Diego, University of Minnesota, Tulane University, and University of Texas Health Science Center at Houston, CATCH was first implemented during the regular school day by trained professionals. CATCH has consistently demonstrated that environments can be created that effect healthy behavioral changes in children. The original CATCH Main Trial (1991-1994) demonstrated that students can improve self-reported eating and physical activity behaviors.\(^{30,31}\) These results persisted over 3 years without continued intervention and have been consistently replicated throughout the United States.\(^{32-34}\) The approach was then modified as the CATCH Kid’s Club to be implemented in the out-of-school (after school and summer) time frames.

OASIS and the University of Texas collaborated to develop Active Generations by adapting CATCH to be facilitated by trained older adult volunteers and implemented in additional community settings, including community centers, parks and recreational facilities, and other locations. Teams of older adults teach children in third to fifth grades 10 lessons adapted from the CATCH program typically over a 4- to 10-week period. Each 90-minute session is comprised of an instructor-led nutrition lesson, including hands-on activities, the preparation and consumption of nutritious snacks, and 20 to 30 minutes of physical activities in the form of age-appropriate games designed to increase cardiovascular health. The interactive discussions include information on identifying and overcoming barriers to physical activity; health literacy, including how to read nutrition labels; and incorporating fruit and vegetables into meals. Each session concludes with the class reviewing the session’s main ideas in order to reinforce key concepts and encourage further involvement in the home.

The Active Generations program was originally piloted in 2006 in San Antonio, which implemented the modified CATCH curriculum within the established infrastructure of an older adult volunteer program. This site had existing relationships with local school systems and after-school programs and had prior experience implementing Active for Life, an evidence-based physical activity program for older adults. After a successful pilot, the program was expanded to 8 US cities in 5 states: Albany and Syracuse, New York; Escondido, Los Angeles (Lakewood and Baldwin Hills), and San Diego, California; Pittsburgh, Pennsylvania; Indianapolis, Indiana; and St. Louis, Missouri. Over 1000 children and 200 volunteers have been reached by this program.

Data Analysis

Descriptive and nonparametric inferential statistical analyses were conducted using SPSS 16.0 (SPSS Inc, Chicago, IL). Nonparametric analyses were used due to the level of measurement that was ordinal. The nonparametric Wilcoxon signed rank test, which is similar to parametric dependent \(t\)-test,\(^{35,36}\) was used to test changes in responses between time 1 (pre-program) and time 2 (post-program). The same sample of children responded at times 1 and 2. The level of analysis was the individual. The Wilcoxon signed rank test can account for both the directional change of a rank and the magnitude of the change (eg, the change of rank from poor to excellent is greater than from poor to good and is weighted accordingly, although both are examples directional increases). The Wilcoxon signed rank test has the advantage of being able to include both polychotomous (eg, excellent, good, fair, and poor) and dichotomous (eg, better and worse) ordinal data as well as dichotomous quasi-ordinal data (eg, yes and no), which is statistically indistinguishable from dichotomous ordinal data.

RESULTS

This study focuses on the evaluation of the Active Generations program. The research questions were designed to explore if children participating in the program experienced a change in nutrition and physical activity knowledge and behaviors. The first question seeks to identify if children changed fruit and vegetable consumption, whereas the second question seeks to identify if the child’s knowledge and understanding of nutrition changed over the course of the intervention. The third and fourth research questions aim to identify physical activity behaviors and confidence to maintain healthy behaviors.

Research Question 1

**Did Children Report an Increase in Fruit and Vegetable Consumption?** Comparing pre-program and post-program survey responses, children statically
increased their reported fruit (Wilcoxon Z = 2.04, p < .05) and vegetable consumption (Wilcoxon Z = 3.47, p < .05). The percentage of children who reported eating 3 or more servings of vegetables per day was 16% greater post-program (23.6% compared to 20.3%), and the percentage of children who consumed zero vegetables per day decreased by about 21% (from 31.2% to 25.6%). Similarly, the percentage of children who reported eating 2 or more servings of fruit increased by about 9% (from 40.6% to 44.4%) and those consuming no fruit decreased by 19% (from 27.8% to 23.4%).

Research Question 2

Did Children’s Health Literacy Related to Nutrition Improve? Children were more likely to report reading food labels after the program compared to before the program (Wilcoxon Z = 2.36, p < .05). For example, 23.9% of children reported at least sometimes reading food nutrition labels after the program compared to 20.5% before the program. Although children did not significantly improve their understanding of the food group from which they should eat the most servings (Wilcoxon Z = 1.35, ns), they did improve in their understanding of the food group from which they should eat the fewest servings (ie, fats, oils, and sweets) (Wilcoxon Z = 2.26, p < .05). As aligned with the 5-a-Day Initiative, children significantly improved in their knowledge of the minimum amount of servings of fruits and vegetables that they should eat each day (Wilcoxon Z = 8.31, p < .05). The percentage of children correctly understanding minimum fruit and vegetable consumption increased from 30.9% before the program to 50.4% after the program (a relative improvement of 63.1%). Participants also better understood the link between nutrition and disease (ie, heart disease and cancer) after the program (Wilcoxon Z = 4.91, p < .05); improving from 51.9% to 62.6%.

Research Question 3

Did Children’s Self-Efficacy to Participate in Physical Activity Increase? After the program children reported greater confidence that they could participate in physical activity 3-5 days per week (Wilcoxon Z = 2.89, p < .05), engage in running and biking for their physical fitness (Wilcoxon Z = 2.44, p < .05), and run at a steady pace for physical activity (Wilcoxon Z = 2.04, p < .05). The relative improvement from before to after the program for the response of very sure these 3 areas of physical activity was 6% for participating in physical activity 3-5 days per week, 6% for running or biking, and 7% for exercising at a steady pace. Children reported a higher level of confidence in being able to exercise and keep physically active in after-school programs (Wilcoxon Z = 2.04, p < .05).

When asked about engaging in structured exercise physical activities at a vigorous intensity level, children did not report a significant increase at post-program survey (Wilcoxon Z = 0.86, ns).

Research Question 4

Did Children Decrease the Amount of Television Watched? Children significantly decreased the number of television shows and movies watched per day (Wilcoxon Z = 2.40, p < .05) and the number of videogames played per day (Wilcoxon Z = 2.01, p < .05). For example, the percentage of children watching 3 or more hours of television per day was 64.8% before the program and 59.8% after the program, and the percentage of children who reported watching no television on a typical day increased from 3.9% to 5.4%. Similarly, reports of playing 4 or more hours of videogames on a typical day also decreased 18% to 15%, and the percentage of children typically not playing videogames increased from 17.8% before the program to 21% after the program.

DISCUSSION

Obesity is a growing national problem. In July 2009, President Obama decided to increase obesity prevention funding as part of his economic stimulus plan. In addition, national and private foundation funding for the control and prevention of obesity across the lifespan is increasing and states are beginning to implement nutrition and wellness policies to reduce the incidence of childhood obesity. Most of these efforts have been focused on in-school settings and national campaigns such as the First Lady’s Let’s Move! Initiative. However, the Active Generations program takes the obesity prevention effort a step further employing out-of-school programs to reinforce the lessons learned in school. This program uses older adult teams to implement a 3-pronged approach emphasizing physical activity, health education, and nutrition behavior practices to positively impact the health habits of children in third through fifth grades. Students participating in the program not only increased their knowledge and self-confidence concerning both physical activity and nutritional behavior but also positively changed behaviors related to each measure.

Active Generations further reinforces the lessons learned in school-based prevention programs and national campaigns by utilizing the National Health Education Standards (NHES) as a measure for success. The NHES are expectations of what students should know and be able to do by their given grade level. The NHES are expectations of what students should know and be able to do by their given grade level, and the percentage of children achieving these standards is increasing and states are beginning to implement nutrition and wellness policies to reduce the incidence of childhood obesity. Most of these efforts have been focused on in-school settings and national campaigns such as the First Lady’s Let’s Move! Initiative. However, the Active Generations program takes the obesity prevention effort a step further employing out-of-school programs to reinforce the lessons learned in school. This program uses older adult teams to implement a 3-pronged approach emphasizing physical activity, health education, and nutrition behavior practices to positively impact the health habits of children in third through fifth grades. Students participating in the program not only increased their knowledge and self-confidence concerning both physical activity and nutritional behavior but also positively changed behaviors related to each measure.

Active Generations further reinforces the lessons learned in school-based prevention programs and national campaigns by utilizing the National Health Education Standards (NHES) as a measure for success. The NHES are expectations of what students should know and be able to do by their given grade level. The NHES are expectations of what students should know and be able to do by their given grade level, and the percentage of children achieving these standards is increasing and states are beginning to implement nutrition and wellness policies to reduce the incidence of childhood obesity. Most of these efforts have been focused on in-school settings and national campaigns such as the First Lady’s Let’s Move! Initiative. However, the Active Generations program takes the obesity prevention effort a step further employing out-of-school programs to reinforce the lessons learned in school. This program uses older adult teams to implement a 3-pronged approach emphasizing physical activity, health education, and nutrition behavior practices to positively impact the health habits of children in third through fifth grades. Students participating in the program not only increased their knowledge and self-confidence concerning both physical activity and nutritional behavior but also positively changed behaviors related to each measure.

Active Generations further reinforces the lessons learned in school-based prevention programs and national campaigns by utilizing the National Health Education Standards (NHES) as a measure for success. The NHES are expectations of what students should know and be able to do by their given grade level. The NHES are expectations of what students should know and be able to do by their given grade level, and the percentage of children achieving these standards is increasing and states are beginning to implement nutrition and wellness policies to reduce the incidence of childhood obesity. Most of these efforts have been focused on in-school settings and national campaigns such as the First Lady’s Let’s Move! Initiative. However, the Active Generations program takes the obesity prevention effort a step further employing out-of-school programs to reinforce the lessons learned in school. This program uses older adult teams to implement a 3-pronged approach emphasizing physical activity, health education, and nutrition behavior practices to positively impact the health habits of children in third through fifth grades. Students participating in the program not only increased their knowledge and self-confidence concerning both physical activity and nutritional behavior but also positively changed behaviors related to each measure.

Active Generations further reinforces the lessons learned in school-based prevention programs and national campaigns by utilizing the National Health Education Standards (NHES) as a measure for success. The NHES are expectations of what students should know and be able to do by their given grade level. The NHES are expectations of what students should know and be able to do by their given grade level, and the percentage of children achieving these standards is increasing and states are beginning to implement nutrition and wellness policies to reduce the incidence of childhood obesity. Most of these efforts have been focused on in-school settings and national campaigns such as the First Lady’s Let’s Move! Initiative. However, the Active Generations program takes the obesity prevention effort a step further employing out-of-school programs to reinforce the lessons learned in school. This program uses older adult teams to implement a 3-pronged approach emphasizing physical activity, health education, and nutrition behavior practices to positively impact the health habits of children in third through fifth grades. Students participating in the program not only increased their knowledge and self-confidence concerning both physical activity and nutritional behavior but also positively changed behaviors related to each measure.

Active Generations further reinforces the lessons learned in school-based prevention programs and national campaigns by utilizing the National Health Education Standards (NHES) as a measure for success. The NHES are expectations of what students should know and be able to do by their given grade level. The NHES are expectations of what students should know and be able to do by their given grade level, and the percentage of children achieving these standards is increasing and states are beginning to implement nutrition and wellness policies to reduce the incidence of childhood obesity. Most of these efforts have been focused on in-school settings and national campaigns such as the First Lady’s Let’s Move! Initiative. However, the Active Generations program takes the obesity prevention effort a step further employing out-of-school programs to reinforce the lessons learned in school. This program uses older adult teams to implement a 3-pronged approach emphasizing physical activity, health education, and nutrition behavior practices to positively impact the health habits of children in third through fifth grades. Students participating in the program not only increased their knowledge and self-confidence concerning both physical activity and nutritional behavior but also positively changed behaviors related to each measure.

Active Generations further reinforces the lessons learned in school-based prevention programs and national campaigns by utilizing the National Health Education Standards (NHES) as a measure for success. The NHES are expectations of what students should know and be able to do by their given grade level. The NHES are expectations of what students should know and be able to do by their given grade level, and the percentage of children achieving these standards is increasing and states are beginning to implement nutrition and wellness policies to reduce the incidence of childhood obesity. Most of these efforts have been focused on in-school settings and national campaigns such as the First Lady’s Let’s Move! Initiative. However, the Active Generations program takes the obesity prevention effort a step further employing out-of-school programs to reinforce the lessons learned in school. This program uses older adult teams to implement a 3-pronged approach emphasizing physical activity, health education, and nutrition behavior practices to positively impact the health habits of children in third through fifth grades. Students participating in the program not only increased their knowledge and self-confidence concerning both physical activity and nutritional behavior but also positively changed behaviors related to each measure.
Students participating in Active Generations significantly increased their comprehension of the link between nutrition and disease understanding that positive nutrition behaviors can lead to a decrease in chronic diseases such as diabetes and cancer. This increase demonstrates how students participating in the program achieve NHES 1 and specifically, performance indicator 1.5.1 “describe the relationship between healthy behaviors and personal health.”37

Students also successfully achieved NHES 3 which states that students will “demonstrate the ability to access valid information, products and services to enhance health.”37 Performance indicator 3.5.1 requires that children in third to fifth grades be able to identify characteristics of valid health information, products, and services.37 Active Generations actively teaches students how to read nutrition labels and how to appropriately create nutritional portion-appropriate snacks. Students participating in the Active Generations program reported that they were more likely to read food labels after the program than before. The students also increased their understanding of the food groups and how many servings of each group should be consumed per day. In addition, students reported an increase in understanding from which food group they should eat the fewest servings.

Achieving standard seven and the identified performance indicators is where the success of the Active Generations program is most visible. Standard seven states that students will “demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks,” and the indicators state that students should be able to “identify responsible personal health behaviors” (7.5.1), “demonstrate a variety of healthy practices and behaviors to maintain or improve personal health” (7.5.2), and “demonstrate a variety of behaviors to avoid or reduce health risks” (7.5.3).37 Active Generations teaches students how to identify and implement responsible personal health behaviors including nutrition and physical activity practices such as consuming more fruits and vegetables which significantly increased post-program. For example, children who reported consuming no fruits or vegetables before the program increased their consumption by 21%. In addition, the students became more physically active after participating in the program and their confidence to participate in physical activity also increased. These students further reported feeling more confident in their ability to engage in running, biking, and exercising at a steady pace after participating in Active Generations providing more evidence in their ability to participate in and maintain healthy behaviors.

Increased screen time is one of the major barriers to physical activity in children.7,12 Because increased screen time has been linked with a reduction in physical activity and increased consumption of high-fat, sugar-laden foods and beverages, any reduction in this behavior is a positive step toward obesity prevention and is a demonstration of students avoiding or reducing health risks (performance indicator 7.5.3).37 Active Generations students reported significantly decreased time in front of the television, computer, and videogame consoles after participating in the program.

Not only were the Active Generation students able to identify responsible health behaviors, they were also able to put the behaviors into practice by increasing their physical activity and decreasing screen time. Their confidence to continue participating in healthy behaviors also improved adding to the evidence that Active Generations makes a significant difference in the fight against childhood obesity.

Limitations

It is beyond the scope of this study to evaluate the long-term results of the Active Generations program. These researchers encourage a long-term follow-up and additional school nutrition and physical education policy analysis. This program is a short 10-session program designed for out-of-school programs, both after-school and summer camp based. It is the belief of the researchers that a longer-term program will yield more significant results. Currently, the program is undergoing significant revisions including adding to the program length to increase the impact on students in kindergarten through sixth grade. The evaluation of the revised program will continue and be reported in future studies. In addition to the continued evaluation, the researchers suggest that future studies include a control or comparison group and examine the dose-response relationship specifically focusing on program delivery and resulting effects.

IMPLICATIONS FOR SCHOOL HEALTH

If obese young people are more likely than children of normal weight to become overweight or obese adults,4 then it is imperative that interventions begin with children. However, children cannot fight the obesity battle alone; they are part of the greater system in which adults, schools, and communities impact their ability to play and grow in a healthy environment. Therefore, comprehensive, multilevel interventions are needed to make long-term, significant changes. Active Generations can be an important component of such a multilevel approach by contributing successful healthy eating and active living strategies to out-of-school programs that support in-school curricula. This program not only achieves a number of NHES and performance indicators but it also reinforces nutrition and wellness concepts taught in well-established, evidenced-based school programs such as CATCH. In addition, this program adds the unique, intergenerational component of older adults as teachers and...
mentors. One study found that when children were partnered with older adults volunteers, not only did the youth demonstrate improved educational outcomes but also the older adults increased physical, cognitive, and social activity. 38 Active Generations is a key part of the obesity prevention puzzle. It is a successful out-of-school obesity prevention program that supports what the students learn in school-based physical and health education courses while keeping older adults civically engaged and active in shaping the health of children.

For schools interested in implementing Active Generations the first step is collaborating with a local partner who works with older adults. This partnership is key to creating a self-sustaining, cost-effective, and successful program. Examples of possible collaboration sites are community centers, churches, assisted living facilities, and retirement communities located in the same neighborhood or close to the school. A school representative can share the responsibility and create an ongoing source of intergenerational experiences by working with an activities director from the partner site. Curriculum and evaluation support for the program can be provided by The OASIS Institute located in St. Louis, MO. Any interested school district or partner site is encouraged to contact The OASIS Institute to explore the curriculum and discuss possible partnerships. Additional information can also be found on the OASIS Web site—www.oasisnet.org.

**Human Subjects Approval Statement**

This study was approved by the Institutional Review Board for the Protection of Human Subjects at Auburn University.

**REFERENCES**


