More Young Children in an Obesity Prevention Intervention in MS and LA Head Start Centers Improve/Maintain BMI Percentile and Waist Circumference Compared to Nonparticipants

Danielle Hollar, PhD, MS, MHA[1]; Caitlin Heitz, MS[2]; Weidan Zhou, MS[3]





INTRODUCTION

Although reports show obesity plateauing among some young children, it remains a significant health problem in the Deep South. Head Start Centers can be leaders in prevention because children spend the majority of the day there, and consume many meals each day in Centers, so interventions addressing food, education, and physical activity have potential since dosage is high.

HYPOTHESIS

We hypothesized that more children in the intervention would:

1) remain in the normal body mass index (BMI) percentile category (for age and gender in accordance with Centers for Disease Control and Prevention) and/or improve their status as compared to children not in the intervention; and
2) have healthier waist circumference (WC) measures at the end of each year, as compared to control children.


METHODS

The Thriving Communities, Thriving Children (TC2) intervention includes menu changes, nutrition and healthy education, and daily exercise. Our randomized design includes 6 MS Head Start Centers (3 Intervention/3 Control) and 6 LA Head Starts (3 Intervention/3 Control). Height, weight, and waist circumference are measured two times a year (fall and spring), for three years. Demographic data provided via administrative records. All children eat breakfast, lunch, and snacks at Centers.

Total	MS intervention	MS control	LA intervention	LA control
681	**210**	**132**	**186**	**153**

THRIVING COMMUNITIES, THRIVING CHILDREN (TC2) INTERVENTION

TC2 utilizes an evidence-based, multi-component intervention that includes modifications to meals provided at the Center (breakfast and lunch, and sometimes an additional snack, as part of the Child and Adult Care Feeding Program of the United States Department of Agriculture), nutrition and healthy living education, and daily physical activity.

Menu modifications: TC2 staff work with menu creators to model nutrition education activities taking place in the classrooms and in materials sent home. Two main activities are: 1) including, and highlighting, the Foods of the Month (described below) on menus; 2) reviewing foods-available lists to determine the most nutrient-rich items available, and modifying menus to include these items.

Nutrition and Healthy Living Education: All TC2 sites receive The OrganWise Guys® Early Childhood Kit that includes books, games, and multi-media educational tools that showcase cartoon versions of the organs of the body, such as Hardy Heart® and the Kidney Brothers®, to teach young children important health and nutrition messages in a fun way that sticks (www.OrganWiseGuys.com). The Foods of the Month education also is a component of this intervention strategy whereby each month two foods or food groups are highlighted in education, food, and parent outreach activities. Many Centers conduct monthly food tastings for experiential learning opportunities, and send home Foods of the Month newsletters to parents each month. All staff in each Center are trained, at the commencement of their participation, on how to integrate this kit into daily lessons, during math, language arts, science, and other required subjects.



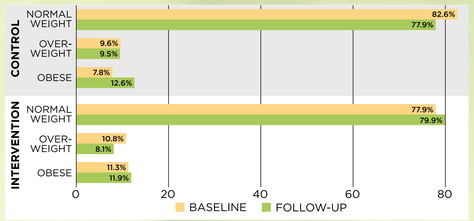
Daily Exercise: All TC2 classrooms receive WISERCISE!®, a desk-side physical activity program that includes 10 minute bouts of fun movement during math, spelling/language arts, nutrition, and other lessons. Teachers track their WISERCISE!® activity daily, using stickers on calendars provided by the study team. Teachers are trained on how to use WISERCISE!® at the beginning of their site's commencement.

RESULTS

The year-one sample presented here includes 681 low-income children ages 2-5 (396 intervention/285 control). The majority of children are African American (92.1%; 6.1% Hispanic, 1.2% White); 50.9% are male. There was no difference between groups regarding demographic characteristics nor baseline BMI percentile.

More children in the intervention group, as compared to controls, experienced health improvements as measured by BMI percentile and WC. The mean BMI percentile among intervention children decreased 0.7 (from 55.573 to 54.904), whereas the mean among control children increased 5.2 (from 49.735 to 54.904). Repeated measures ANOVA showed that this difference was significant, p<.001.

Similarly, the mean WC among intervention children increased less than among control children. Specifically, WC among intervention children increased 0.8 cm (from 53.628 to 54.422), whereas the mean among control children increased 2.0 cm (from 53.617 to 55.612). Repeated measures ANOVA showed that this difference was significant, p=.018



CONCLUSIONS

In this sample of children from a geographic area of the US with high (if not the highest) prevalence of obesity, an obesity intervention among children ages 2 to 5 shows significant health effects. Thus, continuation and expansion of this evidence-based model addressing foods served, integration of nutrition and health education into Head Start lessons, and encouragement of daily exercise, has much promise to improve obesity status of young children nationwide via the Head Start Program.

Thriving Communities, Thriving Children is funded through a $1.2 million grant from the W.K. Kellogg Foundation.

[1] Healthy Networks Design & Research–a nonprofit organization (www.HealthyNetworksDesignandResearch.org)
[2] The OrganWise Guys, Inc. (www.OrganWiseGuys.com)
[3] Elite Research, LLC. (www.EliteResearch.com)