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Addressing Childhood Wellness in the Rural South
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The Effect of a 1-year Physical Activity Intervention Program on School-Related Physical Activity Environment and Opportunities and Aerobic Capacity
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Caree J. Cotwright, PhD, RD, LD; Diane Bales, PhD
Addressing Childhood Wellness in the Rural South

Barbara B. Kawulich, PhD; Diana Mindrila, PhD; Gina Brandenburg, MS

Affiliations: University of West Georgia, Tanner Health System

Objective: In 2013-2014, Tanner Health System (THS) and community partners engaged in several initiatives addressing childhood wellness in rural west Georgia to decrease body mass index (BMI) and increase the percentage of youth in Healthy Fitness Zone (HFZ) as measured by FitnessGram. Methods: Initiatives addressing nutrition and physical activity (i.e., Cooking Matters classes, cooking demonstrations, Power of Produce programs, community gardens, nutrition education interventions in schools, and Take 10! Training) were implemented. FitnessGram data for 2012, 2013, and 2014 were compared to determine changes in BMI and percentages of students in the HFZ. Results: The average BMI for the Bremen City, Carroll County, Carrollton City, Haralson City, and Heard County school systems showed an increase of 0.5 points from the 2011-2012 to the 2012-2013 school year, and a decrease of 0.3 points from the 2012-2013 to the 2013-2014 school year. Nevertheless, a repeated measures analysis of variance using school level data did not show significant differences in school BMI averages across years. The percentage of students in the HFZ decreased by 4.6% from the 2011-2012 to the 2012-2013 school year, and increased by 1.3% from the 2012-2013 to the 2013-2014 school year. Conclusion: Thus far, the numerous approaches to improving childhood wellness in the rural West Georgia area have not made a significant impact on reducing BMI and increasing percentages of students in HFZ. Community leaders, like THS, are committed to continuing a multi-pronged approach to expand on interventions to improve the wellness of all children living in West Georgia.
Bridging Public Health and Education: Power Up for 30 Formative Evaluation Results

Shannon Williams, PhD; Padra Franks, MPH; Christi Kay, MEd; Adria Meyer, BA; Kelly Cornett, MS; Brian Mosier, PhD

Affiliations: HealthMPOwers, Georgia Department of Public Health, University of West Georgia

Objective: The Power Up for 30 initiative is a collaborative statewide effort in response to the growing obesity epidemic among elementary school-aged children in Georgia. The initiative aims to increase student physical activity (PA) opportunities to 30 minutes each school day.

Methods: Survey data (baseline and formative) from 160 randomly selected (80 Power Up for 30 and 80 non-Power Up for 30) Georgia elementary schools were included in the analysis. At each school, an administrator, physical educator, and K-5 grade level chairs were asked to complete the survey. The surveys were designed to assess schools’ PA practices including: before and after school programs, physical education, recess, classroom PA integration, professional development, staff wellness and school PA policies; and used during the training to provide individual school results. Participating schools received training, resources, and technical assistance.

Results: Power Up for 30 schools reported: an increase in before and after school PA programs, days of recess, minutes of PA integrated into the classroom, professional development related to PA, access to PA equipment, and access to PA resources for teachers. Additionally, more students attending Power Up for 30 schools achieved the healthy fitness zone (HFZ) for aerobic capacity.

Conclusion: Outcomes demonstrate the effectiveness of a statewide PA intervention on PA opportunities in elementary schools. Through collaboration of public and private entities, schools across Georgia increased PA time enough to begin to see improvements in health outcomes. As a school-based intervention, further examination of the link to education outcomes will be important to explore.
Collaborative Systems Modeling to Address Childhood Obesity in Georgia: Informing Policy and Practice

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A diverse set of interventions will be required to reverse childhood obesity in Georgia. Objective: This project’s objective is to provide policy- and decision-makers with a systemic perspective on childhood obesity and to base estimates of policy impacts on scientific research. The collaborative inquiry process brings together stakeholder groups, using a common “systems” language, and creates a simple-to-use model, resulting in a more rigorous conversation on policy alternatives to reverse the trends in childhood obesity. Methods: Georgia’s childhood obesity model relies, in part, on epidemiological data and structure from a similar tool developed by the Centers for Disease Control and Prevention. The original collaborative system modeling team included state legislators, legislative staff, and experts in nutrition, exercise physiology, epidemiology, pediatric medicine, and system dynamics from Georgia. This paper reflects an update to the 2008 obesity systems model using, where possible, Georgia data and adding or updating interventions. Seven policy areas are modeled, using a combination of published evidence and expert consensus on the impact of interventions on caloric expenditure: 1) safe routes to school, 2) school food options, 3) school physical education, 4) nutrition/physical activity education in preschool programs, 5) nutrition/physical activity education in after school programs, 6) breastfeeding initiation and duration, and 7) medical nutrition therapy reimbursement for obese children on Medicaid. A simple interface enables users to explore the interventions, alone or in combination and at varying intensities, and assess their impact on obesity and associated health care costs from 2014 to 2024. The model is designed for real-time, hands-on exploration in a learning lab environment. Participants articulate their predictions about the impact of an intervention and inquire into any differences between their expectations and the model’s simulations. Results: Although no single policy has a large impact on future obesity rates, some policy combinations lowered the prevalence of obese children to 10%. Time lags are observed for all interventions, but reductions could be seen within 5 years by maximizing a coherent set of policies, particularly those affecting schools. More importantly, the model and the collaborative model-building process provides an opportunity to learn about the consequences of our actions before policies are set in motion. Conclusion: Using a collaborative system modeling process enables decision-makers to develop a set of actionable policy options. The model provides a framework and a credible tool that enables legislators to engage in rigorous discussions about effective and feasible policy options for reducing childhood obesity.
Ethnic Differences in Obesity and the Home Environment Among 3rd and 4th Grade Children and Parents in Rural Georgia

Courtney Still, MS, RD; Marsha Davis, PhD; Richard Christiana, PhD; Richard Lewis, PhD; Rebecca Mullis, PhD, RD

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Objective: There are racial and ethnic disparities in childhood obesity prevalence. These disparities may be explained by differences in the home food and physical activity environment. Methods: Participants in this study were from the Action Pack Families Study, a group-randomized trial designed to test the effectiveness of a school- and home-based intervention for the primary prevention of obesity in rural children. All 3rd and 4th grade children’s height and weight (n= 671 3rd and 4th grade students) were collected by the research team. Diet, home food environment, and parental weight were self-reported by parents using a paper-pencil survey (81% response rate). We examined racial and ethnic differences in food consumption, home food environment factors, and weight status. Results: Over 30% of the children were obese. Black parents were more overweight and obese than white or Hispanic parents and families had more sugar sweetened beverages available in the home than Hispanic or white families, with Hispanic families having the least. Conclusion: Racial and ethnic disparities in dietary behaviors need to be acknowledged and addressed in interventions. Overweight and obese parents are more likely to have overweight and obese children. This emphasizes the importance of addressing the whole family and using the child as a change agent to influence parent eating and physical activity behavior and the home environment in this and other nutrition and physical activity intervention.
Feasibility and Acceptability of Smartphone as an Intervention Tool for Late Adolescent African American Females in an Experimental Physical Activity Study

Bridget Melton, EdD; Matthew Buman, PhD; Charles Wilson, PhD; Lauren Bigham, EdS

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While African-American females suffer from disproportionately high rates of inactivity and obesity, this underserved group also reports high rates of smartphone adoption and usage. Therefore, the smartphone medium may be a viable option to promote physical activity.

Objective: The current study examined the feasibility and acceptability of using the commercially-available Jawbone UP and associated smartphone “app” platform to promote physical activity and sleep among a sample of adolescent African-American females.

Methods: Data were drawn from a larger randomized controlled trial, and focused on a subsample of participants (N=28) who were randomly assigned to receive a physical activity intervention (i.e., Jawbone UP) with a mobile application. Results: At six weeks, retention (78.5%) and adherence (61.9%) to the smartphone app were high. Overall, 95.5% of the participants reported finding the Up Band helpful and the majority of participants agreed/strongly agreed that the physical activity (90.5%) and sleep (95.5%) features influenced awareness of health behaviors. Qualitative data supported both the feasibility and acceptability with five main themes: ease of use, product design, self-awareness, physical activity and sleep motivation, as well as social desirability.

Conclusion: As smartphones offer a low cost and useful tool for encouraging self-monitoring of physical activity and sleep behaviors, the cumulative data suggest that participant’s became more aware of their physical activity and sleep patterns. The present study supports mobile devices as a viable and feasible intervention to promote healthy behaviors among young African-American females.
**Fitness, sleep-disordered breathing, depression symptoms and cognitive outcomes in overweight sedentary children: A mediation model.**

Monika M.K. Stojek, PhD; Amanda Montoya, MS; Christopher Drescher, PhD; Andrew Newberry, MS; Zain Sultan, BS; Celestine F. Williams, MS; Norman K. Pollock, PhD; Catherine L. Davis, PhD

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**Objective:** Childhood obesity and inactivity adversely affect sleep, mood, and cognition. Poor physical fitness is linked with sleep-disordered breathing (SDB), and SDB with depression symptoms, but these relationships are understudied. This study tested a mediation model of fitness affecting depression via SDB, and evaluated further links with cognition. **Methods:** 397 inactive, overweight (≥85th percentile BMI) 7-11 year olds (59% female, 71% Black) underwent a fitness test, dual-energy x-ray absorptiometry for adiposity, cognitive and academic achievement batteries (Cognitive Assessment System (CAS), Woodcock-Johnson III) and reported depressive symptoms (Reynolds Child Depression Scale or Child Depression Inventory). Parents reported the Pediatric Sleep Questionnaire and their education. Correlations and bootstrapped mediation models adjusted for adiposity and parent education (α=.05). **Results:** Fitness predicted depression and SDB, SDB predicted depression, and the relationship between fitness and depression was mediated by SDB (ab = -.0047, 95% CI = [-.0118, -.0008]). Fitness was correlated with the Simultaneous and Attention scales of the CAS, but not achievement. A serial multiple mediation did not support that poor fitness works through SDB promoting depression to impede attention. However, SDB and depression separately mediated the relationship between fitness and attention. **Conclusion:** These results are consistent with childhood fitness influencing sleep, mood, and cognition. Inactive, poorly fit children’s sleep difficulties may affect mood. Sleep and mood effects may in turn contribute to poorer cognitive performance among children with low fitness. Experimental and longitudinal studies are needed to develop practical population-wide interventions to optimize child health and functioning.
POSTER

Imagining Health: Using Photovoice to promote dialogue and action in support of healthy communities.

Jeannette Diaz, PhD

Affiliations: University of West Georgia

The central purpose of this project is to bring about policy change in support of healthy communities through the use of Photovoice. Photovoice is a community-based participatory research process wherein community members express their point of view through photographs and narratives that are then presented to policy makers to help ensure that policy changes match community needs. The central theme for this Photovoice project is community visions of, and barriers to, health. Six Photovoice teams, two youth and four adult, are engaged in this project. These teams, co-facilitated by community facilitators and members of the research team, represent four African American churches in Carroll, Haralson and Heard Counties, Georgia, as well as a Safe Routes to School task force from the Carrollton City School. Photovoice projects will be part of church-based and broader community-based conversations regarding behavioral and policy interventions to promote health and wellness. This project is a collaborative effort between the University of West Georgia and Tanner Health Systems.
Improving Health Outcomes for Children: The Efficacy of a Peer-led, Parenting Intervention

Cassandra L. Bolar, PhD; Natalie Hernandez, PhD, MPH; Tabia H. Akintobi, PhD, MPH; David Satcher, MD, PhD; Aneeqah S. Ferguson, MS; Latrice Rollins, PhD; Glenda Wrenn, MD; Martha Okafor, PhD; David Collins; Thomas Clem

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The Using Quality Parenting (UPQ) pilot program is a peer-led, parenting education intervention that was developed in collaboration with community residents in Atlanta, Georgia. A community-based participatory research design was utilized to develop the UQP curriculum, which included a series of 20 focus groups and community meetings that informed the content areas, design, and implementation of the curriculum. The UQP program targets parents of children ages 6-14, and the overarching aim is to increase quality parenting as a means to address community identified health inequities in early and middle childhood. Additionally, UQP intends to mitigate the negative impact of poverty and related environmental risk factors on children’s health and general well-being. The following topics that pertain to parenting and children’s health and well-being are addressed by UQP: nutrition, physical activity, socio-emotional development, positive parenting, coping skills for parents and children, child advocacy, and community development. Participants meet on a weekly basis with their peers in a supportive network of 6-10 individuals for 8 weeks to complete the evaluation components and 6 educational sessions. The program design of the UQP curriculum is unique; in that, facilitators (parent leaders) are residents in the target population, and they are supported by a parent mentor who also resides in the target population. The analytic sample was composed of 86 African American parents (68 females and 16 males; 46 of whom completed the program – 37 females and 9 males), and over 50% of the sample had an annual household income of $25,000 or less. Based on a repeated measures analysis of variance (RMANOVA), participating parents reported significantly higher levels of water consumption for their children post-program in comparison to pre-test reports, and this increase across time did not vary by a parent’s gender. Additionally, based on t-test analyses, parents reported that their children consumed higher levels of proteins, grains, fruits and vegetables at each meal post program; and parents indicated higher levels of physical activity for their children after program participation. These findings highlight the potential efficacy of peer-led interventions in improving health outcomes for children.
Lessons learned in the adoption of state-level policy to support physical activity: A case study on the SHAPE Act in Georgia
Rodney Lyn, PhD, MS; Erica Sheldon, MPH; Michael Eriksen, ScD

Affiliations: School of Public Health, Georgia State University

Physical inactivity among children and youth has been identified as a public health problem and is associated with obesity, low levels of fitness and higher risk of chronic diseases. Public health experts have identified policies targeting physical activity as a promising strategy to address this challenge. Understanding the process by which such policies are adopted may help to facilitate progress nationally. This study sought to examine lessons learned from the passage of House Bill 229, the SHAPE Act, in Georgia. Fourteen semi-structured interviews were conducted with individuals who were engaged in the adoption of the SHAPE Act. Interview data were analyzed in NVivo10 using thematic analysis. Findings suggest that several factors were vital to policy adoption, including a shifting social and political climate, the organization and mobilization of diverse partners behind a common agenda, and the development of strategies to overcome impediments to legislative progress. Study implications are that engagement and cooperation with partners, the establishment of mutual interests as a basis for collaboration, and the identification of realistic and evidence-based solutions hold promise for facilitating progress towards adoption of policies that promote physical activity.
Longitudinal Youth Fitness Trends and Disparity in State of Georgia
Yang Bai, MS; Pedro F. Saint-Maurice, PhD; Gregory J. Welk, PhD

Affiliations: Iowa State University, Ames, IA

The Georgia Student Health and Physical Education (S.H.A.P.E.) Act requires each local school district to conduct annual fitness assessment with FITNESSGRAM but studies to date have not examined patterns or trends in the data. Objective: The purpose of the study is to evaluate longitudinal changes in youth fitness across the state of Georgia as well as disparities in fitness across different demographic factors. Methods: Aerobic capacity (AC) and Body Mass Index (BMI) were assessed by trained teachers across the state using standard FITNESSGRAM protocols. Both AC and BMI raw score were evaluated with criterion-reference health-related standards to classify the performance into Healthy Fitness Zone (HFZ) or Needs Improvement Zone. The grade level HFZ achievement was calculated to obtain the percentage of students in the HFZ for both boys and girls. School demographic information including enrollment, minority rate, and the percentage of students eligible for free and reduced lunch (FRL). Growth curve models were applied to estimate the average annual change in AC and BMI HFZ after controlling for school demographic factors. Results: A total of 4258 (7156) and 4273 (7131) aggregated grade level AC (BMI) data from over 1,700 schools were included for boys and girls, respectively. The mean HFZ achievements for AC across the 3 years were 56.7%, 56.8% and 56.9% for boys and 41.8%, 42.6%, and 43.5% for girls. The related values for BMI were 57.2%, 59.0%, and 58.9% for boys and 57.9%, 59.3%, and 59.2% for girls. After controlling for enrollment and FRL, there were small but notable increases in average annual AC achievement (boys: 0.10%, girls: 0.90%) and average annual BMI achievement (boys: 0.83%, girls: 0.61%). A 1% higher in FRL was associated with lower achievement in AC (boys: 0.27%, girls: 0.38%) and BMI (boys: 0.14%, girls: 0.20%). Elementary schools tended to have higher increase in both AC (1.27% for boys and 1.45% for girls) and BMI (1.02% for boys and 0.95% for girls). Mixed results were found for middle and high school. The change in AC and BMI was more evident in high FRL schools for boys and girls compared to low FRL schools. Conclusion: Positive changes were found in BMI HFZ achievement for both gender but AC achievement only increased among girls. Higher FRL status was associated with lower fitness achievement. Elementary schools had larger increases AC and BMI HFZ achievement compared to middle and high schools. Overall patterns reflect increased fitness achievement in Georgia youth.
Motivational Interviewing and Patient-Centered Goal Setting for Behavior Change: Knowledge and Practices Among WIC Nutritionists

Wendy Palmer, MS, RD, LD, CHES; Trisha Hardy, MPH, RD; Shannon Earl, MPH; Jean A. Welsh, PhD, MPH, RN

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WIC is a federally funded program offering support for food purchasing and nutritional counseling to low-income families. WIC nutritionists are required to set a behavioral change SMART goal with the parent/caregiver of every enrolled child and are required to assess and counsel using Motivational Interviewing (MI). The Strong4Life WIC Nutritionists training program was created to help enhance these skills and increase their utilization. Objective: The purpose of this evaluation was to assess the knowledge, comfort, confidence, and utilization of these techniques among WIC nutritionists before and after training.

Methods: Between September 2014 and March 2015, 531 WIC nutritionists attended a 2-hour training on evidence based obesity prevention counseling techniques including motivational interviewing, patient centered counseling and behavior change goal setting. Participating nutritionists received the following clinic tools to facilitate effective counseling practices: Healthy Habits Assessment, color coded BMI poster, Goal Sheet and healthy habits take home handout. In addition, a program Champion was selected and trained from each district (n=18) to provide ongoing mentoring and quality monitoring through post training counseling observations. The program evaluation plan includes: 1) pre- and post-training surveys to assess change in participant knowledge and confidence, 2) 3-month follow up surveys to assess implementation of counseling techniques and usage of tools provided 3) post-training observation by Champions using a standardized assessment tool, and 4) a review of charts to assess quality improvement and follow up on goals set by WIC nutritionists with clients.

Results: Among those completing both pre and post training surveys (n=503), the proportion of WIC nutritionists correctly identifying each component of a quality (SMART) goal increased from 67%-88% pre-training to 82%-94% post. With training, nutritionists’ confidence in using patient-centered goal setting increased from 80% to 91%. Comfort in counseling overweight/obese clients increased from 77% to 89%. Post-training monitoring by Champions demonstrated that many nutritionists regularly used open-ended questions (68%) when counseling through less than half regularly used reflective listening (39%) or asked permission to share concerns (41%). Conclusion: WIC nutritionists’ knowledge of SMART goal setting was moderate at baseline and increased with training. Comfort and confidence using MI techniques also increased, though post-training monitoring suggests that some are not consistently utilizing these techniques in their counseling interactions. Completion of the evaluation plan as outlined will provide a more complete picture of improved counseling practices of WIC nutritionists and the impact of the Strong4Life training.
**Strong4Life School Nutrition Program**

Wendy Palmer, MS, RD, LD, CHES; Ashley Skorcz, MA, RD, LD; Trisha Hardy, MPH, RD; Jean A. Welsh, PhD, MPH, RN; Farrah Keong, MPH

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The 2010 Healthy, Hunger-Free Kids Act requires that lunches served through the National School Lunch Program (NSLP) offer all components of a balanced plate (fruit, vegetable, lean protein, whole grains and dairy). Research has shown that lunches brought from home often do not include one or more of these components. **Objective:** As NSLP participation has declined recently, the Strong4Life (S4L) School Nutrition program was developed by Children’s Healthcare of Atlanta, in partnership with Georgia Shape and the Department of Education, to empower Georgia’s school nutrition staff to develop and maintain a cafeteria environment that encourages healthy choices and promotes NSLP participation. **Methods:** In October 2014, a series of 8 focus group discussions (FGDs) were held with school nutrition staff, parents and students to identify factors influencing NSLP participation. This information, combined with knowledge gained through implementation of a pilot training program based on Cornell’s Smarter Lunchrooms Movement, was used to develop the S4L program. The 90-minute training for nutrition managers and staff focuses on use of five Smart Serving Strategies (sell, taste, visibility, convenience and price) and the use of an innovative toolkit (menu labels, stickers, floor decals, ceiling danglers) to support use of these strategies. To facilitate broad participation, the training was made available via on-line platform in April 2015. A marketing plan involving the distribution of program information to parents and the development of a school nutrition specific section on the S4L website was developed to keep training participants engaged long-term. The program evaluation plan includes: 1) pre- and post-training surveys to assess change in participant knowledge, 2) 6-month follow-up surveys (on-line) to assess toolkit usage and changes in the cafeteria environment, and 3) review of cafeteria records to assess change in NSLP participation rates. **Results:** In February-March 2015, 236 school nutrition managers and staff were trained. With training, awareness of specific strategies that support healthy eating in school increased from 38%-84% pre to 80% -96% post training. The proportion of nutrition staff confident in their ability to encourage healthy choices increased from 67% to 96%. **Conclusion:** Preliminary results suggest that the Strong4Life School Nutrition Program is effective in reaching school nutrition staff and increasing their knowledge about strategies for improving the cafeteria environment and their confidence in promoting healthy choices. Further study is needed to assess program impact on NSLP participation.
Technical Assistance to Schools to Address Policy, Systems, and Environmental Changes in Physical Activity and Nutrition: A Framework for Georgia

Debra Kibbe, MS; Rachel Campos, MPH; Christi Kay, MEd; Padra Franks, MPH; Chris Stewart, MA, CHES

Affiliations: 1Georgia Health Policy Center; 2HealthMPowers

Little information exists on the technical assistance (TA) best practices and needs in the school setting related to achieving improved policy, systems, and environmental (PSE) changes in physical activity and nutrition (PAN). This is true despite the fact that the number of organizations providing health-related TA to schools in Georgia has increased rapidly.

Objective: A framework for providing technical assistance to schools is crafted with a goal of ensuring strategic investment and sustainability of efforts. Methods: Qualitative methods and inductive reasoning approaches will be used to conceptualize a school PAN TA framework. Stakeholder interviews, examination of existing assessments and tools, and analysis of TA needs requested by existing schools served by the author group organizations are analyzed. Results: The analysis of TA services and impact to inform a TA framework is ongoing by the author group. The resulting framework will be informed by the outcomes from the 2014-2015 school year. With the exception of school nutrition staff’s grasp of USDA guidelines for school breakfast and lunch, in general, school personnel working or interested in health lack an understanding of the federal and state policies and best practices models (i.e. Healthy Hunger Free Kids Act; Coordinated School Health; Comprehensive School Physical Activity Program) that govern or support PAN programming and PSE changes. This suggests a school TA framework must include an assessment phase in which readiness, experiences to date, and policy knowledge is examined to guide individualized TA plan creation. Over three years, results indicate a successful TA framework must include customized support in response to school-specific requests to address questions or challenges. The highest rated services include annual training events, peer-to-peer learning opportunities, and consultation site visits. Lowest rated TA services are webinars and individual coaching calls. An important component of the TA framework will be ongoing, consistent communication and a structure that includes a “dedicated relationship” between TA consultants and schools. Further analysis may reveal a scope and sequence for TA services along with outcome measures of interest to school leadership vs. funding organizations. Conclusion: Schools that are receiving TA from a dedicated and experienced TA provider have better knowledge of nutrition and physical activity policies. A TA framework that can inform quality PAN and PSE change in schools can be structured and adopted by organizations working in this setting.
The Effect of a 1-year Physical Activity Intervention Program on School-Related Physical Activity Environment and Opportunities and Aerobic Capacity.

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Affiliations: 1Rollins School of Public Health, Emory University; 2HealthMPowers, Atlanta, Georgia; 3Georgia State University, Atlanta, Georgia

Objectives: The overall goal of this study was to determine the impact of a one-year physical activity (PA) intervention on changes in the school opportunities and aerobic capacity. Specific objectives were: 1) determine changes in school opportunities in schools receiving the intervention program, and 2) assess the relationship between the school opportunities and aerobic capacity.

Methods: The intervention, which focused on creating a school health team, training school personnel, providing resources, and helping schools evaluate their opportunities for change, was provided to 39 schools with an average 73% free and reduced lunch rate in five Georgia counties. Pre and post intervention Progressive Aerobic Cardiovascular Endurance Run (PACER) data (a measure of aerobic capacity) was collected for 4th grade students (n=2,342). An on-line survey was administered pre and post intervention to grade-level and physical education (PE) teachers and administrators to measure changes in PA opportunities. Changes in opportunities including categorized classroom PA time, recess PA time, before and after school programs, and access to PA equipment were collected. Replicated linear regressions were run on randomly unrounded changes in time in school PA to measure the linear correlation with aerobic capacity and provide a 95% empirical interval around the estimate using bootstrapping techniques.

Results: The average number of PACER laps completed increased after the intervention by 2.8 laps, with 73% of children improving or maintaining their number of laps completed. Assessment of changes in school opportunities showed 33% of schools increased days per week of recess and minutes per day of recess and 52% of schools increased how often they had access to PA equipment during recess. Slightly more than one-third (36%) of schools adopted a before school program. For classroom physical activity, 14% of teachers reported changing from no PA to incorporating some PA into the classroom. Overall, 38% of schools increased class time PA by some degree. Linear regression showed a significant relationship between change in time in school PA and aerobic capacity ($r = 0.39$, 95% Empirical Interval: 0.31-0.47).

Conclusion: There is suggestion that the intervention may be responsible for changes in school opportunities, which is directly associated with aerobic capacity increases. These positive results demonstrates the need for further research including a large-scale cluster-randomized control trial to assess the full impact of the intervention in a more rigorous setting.
The Healthy Fitness Zone Continuum as a measure of change in youth BMI: An example using 2012-2014 data from Georgia
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Several states in the US have incorporated standardized fitness assessment in their agenda however, little is known on how to efficiently use this data to characterize changes in fitness over time. Objective: This study uses longitudinal data from the state of Georgia (GA), to describe the “Healthy Fitness Zone Continuum” (HFZc), a robust measure of individual’s change in health-related fitness indicators, such as BMI. Methods: The study includes BMI data from 313,867 students (53.5% boys) (1st through 12th grades) from 2,001 schools spread throughout the state of GA. The study provides descriptive information on BMI changes during the last three consecutive years (2012 through 2014). Changes in BMI were first examined by the distributions of youth in the different FITNESSGRAM zones (Healthy Fitness Zone (HFZ), Needs Improvement Zone (NIZ), and Needs Improvement – Health Risk (NIHR). These descriptives were followed by the computation of the HFZc score according to two steps: 1) HFZc is expressed in percent and was calculated as: [(age and gender specific BMI cut off values for HFZ - BMI)/ age and gender specific BMI cut off values for HFZ] x 100 and for all three years; 2) the HFZc obtained at each of the years 2013 and 2014 was subtracted from the HFZc in 2012 (e.g., HFZc in 2014 – HFZc in 2012). Students that had a positive change in the mean HFZc score were flagged to reflect progress in their BMI values (i.e., “better” BMI) and vice-versa (“worse” BMI). Results: The overall proportion of youth in the HFZ, NIZ, and NIHR, remained relatively stable between 2012 and 2013, and had small drops in the HFZ during 2014 (57.2%, 57.1%, and 55.0% for HFZ; 10.7%, 11.0%, and 11.8% for NIZ, and 32.1%, 31.9%, and 33.2% for NIHR). The mean difference in HFZc scores revealed that approximately 51.8% of the students moved in the right direction (“better” BMI) while 48.1% lowered their position in the continuum (“worse” BMI) from 2012-2013. From 2012-2014, fitness levels decreased to a greater extent. The proportion of students that improved their HFZc score was now reduced to 48.7% while the opposite was verified in 51.3%. Conclusion: BMI classification trends remained relatively stable over the last three years, however, the HFZc showed that BMI values for health are continuously changing. The HFZc score should be highly considered since it provides a sensitive measure to small variations in BMI that might otherwise not result in a transition between fitness zones.
UGA Supplemental Nutrition Assistance Program (SNAP)-Ed: Healthy Child Care Georgia Project

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Childhood obesity rates are high among Georgia’s low income children. The goal of the UGA SNAP-Ed program is to help low-income Georgians establish healthy habits through nutrition education. Our study uses a combined policy, systems, and environmental (PSE) approach and nutrition education intervention, Eat Healthy, Be Active (EHBA), to improve the wellness environment of early care and education (ECE) programs. Objective: The objective of Healthy Child Care Georgia are to: Increase ECE professionals' knowledge of wellness best practices for obesity prevention in ECE settings; Assess the current status of wellness best practice implementation of ECE programs; Create an action plan for the adoption at least one nutrition and one physical activity best practice in each ECE program; Evaluate the effectiveness of EHBA, a six week nutrition intervention in ECE programs. Methods: The study design is a group-randomized trial with 12 ECE programs located in Athens, GA, randomly assigned to one of two conditions. Six programs will participate in an immediate intervention, and 6 will serve as a control group, and participate in a delayed intervention after the initial 6-week pilot project is complete. In addition to direct education in classrooms, all ECE programs will attend two trainings, one before the intervention, and one at the midpoint of the intervention. Trainings will teach current obesity prevention best practices and provide an overview EHBA. Researchers will also conduct a 12-week follow up with participants and ECE program director in-depth interviews post-intervention. Results: The results of this study will highlight the lessons learned from implementing a PSE and direct education intervention in ECE programs. Conclusion: A combined PSE and direct education intervention may be a promising approach to improve the wellness environment in ECE programs.