Healthy, happy, active, fit

Principal Investigator Anne Lindsay, and Drs Madeleine Sigman-Grant and Teresa Byington discuss their initiative, which aims to lower child obesity rates through healthy eating and physical activity.

To begin with, can you provide an overview of the problems associated with childhood obesity?

AL: According to the US Department of Health and Human Services, there has been a significant increase in the number of overweight preschool children in the US. Research data on child obesity from 1976-80 was compared with data from 2009-10 by the National Health and Nutrition Examination Survey (NHANES). It showed that, for children aged between two and five years, the prevalence of obesity had increased from 5 to 12.1 per cent according to their Body Mass Index (BMI). Children with BMI values at or above the 95th percentile of the sex-specific BMI growth charts are categorised as obese, and those with values between the 85th and 95th percentile are considered overweight. Currently, one in every seven preschool children from a low income background is obese.

Can you explain the 'Ecological Model' that the All 4 Kids© programme is implementing to address childhood obesity? What are its main components?

MSG: Each child is born with a particular set of psychological and physiological characteristics, such as gender, potential size and temperament, or 'nature'. The Ecological Model, postulated by Urie Bonfrenbrenner, describes how a child’s nature is impacted by its environment, or ‘nurture’. Nurture includes the culture, economics and values of caregivers as well as the immediate (homes, preschool, neighbourhoods) and distal (access to food, governmental policies, safe parks) environments. All 4 Kids© assumes that preschoolers live within an obesogenic environment. By directly teaching them, we can influence their understanding, preference and skills. In addition, the involvement of caregivers helps to impact their own knowledge of healthy eating and active living, which in turn encourages them to make better choices for the children and themselves.

TB: At every All 4 Kids© lesson we emphasise that anyone can eat healthily and be active. We teach the importance of being healthy, happy, active and fit. We encourage the children to make learning connections through repetition and fun activities. Visual imagery and movement-based activities are used to promote attention and engagement. We teach children that ‘GO’ (healthy) foods help to promote strong muscle, bone and heart development.

Do you get feedback from parents and teachers with respect to the aims and strategies of your project?

TB: Many parents have left positive feedback, commenting that the All 4 Kids© programme has changed their children’s eating habits. Several have told us that their child has asked them to purchase specific ‘GO’ foods at the grocery store and told them not to buy ‘WHOA’ (unhealthy) foods. Additionally, parents explained their families have increased their physical activity levels and are eating healthier meals at home. The response from teachers has also been positive: they noted that children in their classrooms are active and love dancing to the All 4 Kids© music. Finally, the preschoolers themselves have become interested in identifying and consuming healthy ‘GO’ foods during meals and as snacks.

What are the long-term plans for the All 4 Kids© project? What do you hope to achieve in the near future?

AL: The programme is freely available for teaching in the classroom. We hope to see an expansion of the project and we hope that the programme will be taught in preschools everywhere.

MSG: The All 4 Kids© programme is very adaptable. The entire curriculum for preschoolers, teachers and parents (complete with videos and resources) can be accessed at extension.org. Accounts must first be set up at http://campus.extension.org, whereupon access to the course page will become available. In addition, online seminars about the project will be held in Autumn 2013 and Spring 2014.
Targeting childhood obesity

All 4 Kids© was developed in 2008 to combat childhood obesity issues within the US, and to encourage preschool children to make positive nutritional choices and enjoy physical activities on a regular basis as part of a healthy lifestyle. Since its inception, the project has expanded considerably and is now receiving nationwide recognition.

IN THE US, the prevalence of childhood obesity has dramatically increased over the last 30 years. There are many underlying causes, which range from genetic propensity to socioeconomic, cultural and environmental influences. A large proportion of these causes are related to situations which promote overeating and inactivity, termed ‘obesogenic environments’. Such settings may contain marketing messages that promote unhealthy eating and encourage access to inexpensive, high-energy foods. They may also promote sedentary behaviour and reduce the energy demands of daily activities, as well as limiting opportunities for recreational physical activity.

The All 4 Kids© programme has been designed to address the underlying causes of childhood obesity across the US. It works to encourage healthy eating habits and physical activity in children from a very early age. Since it was created in 2008, the programme has expanded significantly, received awards from many notable health organisations and succeeded in reaching a wide audience through its use of contemporary media. Project collaborators include Acelero Learning Head Start, the Cooperative Extension faculty at the University of Connecticut, Oklahoma State University and The Rutgers State University of New Jersey.

IMPLEMENTING THE ECOLOGICAL MODEL

Using Urie Bronfenbrenner’s Ecological Model of Child Development, the All 4 Kids© programme aims to prevent and counteract childhood obesity. The Model takes into account all possible external influences upon young children. It posits that a child’s immediate family provides the strongest emotional and psychological impact, though a number of other settings are influential. These settings include an extended family, educational programme, healthcare and other community-based environments such as a neighbourhood, library and playground. The programme’s multidisciplinary course structure is designed to work with these contexts in order to ensure that children are supported at all levels.

THE PROGRAMME STRUCTURE

The children are taught three 30-minute classes per week over a period of eight weeks. These classes include dance, physical activity and nutrition concepts, and acceptance principles. The dance element teaches children specific movements which are outlined in state prekindergarten standards. The physical activity and nutrition aspects enhance the children’s understanding of energy expenditure, muscles, bones and heart, and also encourage them to build healthy eating habits and listen to internal body hunger and fullness cues. Finally, the acceptance principles promote healthy living at any shape or body size.

COMMUNITY ENGAGEMENT THROUGH MEDIA OUTREACH

All 4 Kids© has received tremendous support from volunteers within local communities. These have included songwriters, musicians, choreographers, recording artists, musical arrangers, script writers, production crews and actors. The recording artists continue to donate their time each year for the annual Healthy Kids Festival, where they perform and dance with children who gather from all over the community.

The All 4 Kids© CD and DVD pack has been disseminated throughout the country, and serves as the programme’s stand-alone media. The material has also been used to complement other established health and nutrition programmes. Thousands of packs have been purchased and viewed on YouTube for use in classrooms for children from kindergarten through to grade 6. They have been shown during health and PE classes, nutrition events and school assemblies.

Anne Lindsay, Principal Investigator, has also published a comprehensive article on the All 4 Kids© media project. Entitled ‘A Media Effort Addressing Preschool Inactivity through Family, Community and Extension Collaboration’, it is available in the 2010 Journal of the National Extension Association of Family and Consumer Sciences (NEAFCS). In 2010, the All 4 Kids© CD and DVD Media Project was given the 1st Place Western Region and 3rd Place National Awards by the NEAFCS. The use of media resources has allowed the project to reach and impact a much wider audience through contemporary marketing and dissemination techniques, a success which would not necessarily have been achieved with traditional classroom material.
EVALUATING REACH AND IMPACT

Since 2008, the All 4 Kids© programme has reached close to 5,000 preschool children, teachers and families in Nevada, Oklahoma, Connecticut and New Jersey. In 2010, a quasi-experimental control and intervention research study determined the effectiveness of the programme. Preschool children at six pre- and post-intervention Head Start sites and six control Head Start sites in Clark County were assessed on their healthy snack selections and movement skills. The children who had completed the programme exhibited a significant improvement in their nutritional understanding, dietary choices and physical capabilities.

To assess their understanding of nutrition, each child was shown pictures of healthy and unhealthy food both before and after attending the All 4 Kids© course. They were asked which food they preferred as well as which ones they considered to be healthy. A comparison of their responses showed that the children had improved their nutritional knowledge and were making healthier food choices.

In terms of movement, preschool children demonstrated significant improvements in individual physical skills, such as balancing, hopping on one foot and crossing the midline of their bodies. Research has shown that children who become proficient in and confident with motor skills from an early age are more likely to engage in intense physical activities as adolescents. Children who do not develop their motor skills sufficiently are likely to gravitate towards sedentary hobbies, which may lead to obesity and related health problems in later life.

Finally, another study was conducted with the parents and guardians. Intervention families were compared to other families which had not been exposed to the programme. The intervention families exhibited fewer barriers to eating healthy food, increases in the purchasing of fruits and vegetables and greater participation in physical activities.

ACHIEVEMENTS AND FORTHCOMING EVENTS

The programme has gained increasing recognition within the US over the last few years. In 2012, it received the National Institute of Food and Agriculture Partnership Award from the US Department of Agriculture (USDA) for Mission Integration of Research, Education and Extension. Last year it also received the Western Extension Director’s Award for Excellence, the USDA/Priester Health Award and several other awards from the National Extension Association of Family and Consumer Sciences.

This year, the All 4 Kids© programme was exhibited at the Society for Nutrition Education and the Galaxy Conference for Extension Professionals in August and September, respectively. The coordinators are also submitting a series of journal articles which aim to deliver information about the programme and its impact to a wider audience, namely the early childhood and nutrition communities.

All 4 Kids© is currently seeking funding in order to produce, develop and disseminate more music and dance media projects. It is also seeking funding to validate and share tools for preschool teachers to easily assess the progress of healthy behaviours in children in preparation for kindergarten to tackle, once and for all, the health of the nation.

INTELIGENCE

ALL 4 KIDS©

OBJECTIVES

The prevalence of childhood obesity has dramatically increased nationwide. The underlying causes range from genetic propensity to socioeconomic, cultural and environmental influences resulting in unhealthful eating and physical activity practices. The All 4 Kids© programme employs the Ecological Model to address childhood obesity in both the home and childcare environments.

KEY COLLABORATORS

Rory Sipp, EdD, Acelero Learning Head Start • Deana Hildebrand, PhD, Oklahoma State University • Amy Mobley, PhD, University of Connecticut • Nurgul Fitzgerald, PhD, Rutgers The State University of New Jersey • Alex Cotton, Rap Artist, Ginisus, USA

PARTNERS

University of Nevada, Reno • Clark County, Nevada • US Department of Agriculture (USDA) • USDA Supplemental Nutrition Assistance Program Nutrition Education • Latin Band, Vol 1 • Las Vegas Song Writers, Musicians and Choreographers • United State Department of Agriculture (USDA) National Institute of Food and Agriculture

FUNDING

USDA, National Institute of Food and Agriculture

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ANNE LINDSAY is an Associate Professor and doctoral student in public health. An exercise physiologist and certified ACSM Health & Fitness Specialist, she has published research and developed evidence-based health programmes for community, corporate and government agencies. Lindsay is a frequent speaker and serves on local, state and national committees.

MADELEINE SIGMAN-GRANT is primarily interested in child nutrition feeding guidelines and community breastfeeding education. She educates families and health professionals in operationalising evidence-based research. Sigman-Grant is a frequent speaker at professional meetings and her publications appear in diverse scientific journals. She serves on national and international committees.

TERESA BYINGTON is an Associate Professor and Early Childhood Education Specialist. Her current focus is on enhancing young children’s language, literacy and social emotional skills through coaching and training early childhood teachers. Byington is currently researching the effectiveness of different types of professional development on teaching practices and child outcomes.