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## Implementation of early childhood physical activity curriculum (SPARK) in the Central Valley of California (USA)

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### Abstract

The aim of this paper is to describe the methodology applied to develop and launch the implementation of physical activity curriculum (SPARK) at several schools in the Central Valley of California. The SPARK Early Childhood Program is one of eight within the SPARK Coordinated School Health (CSH) model. This research try to create environments that promote healthful behaviors at school and in the community for both children and adults. Overweight and obese children are likely to develop serious health problems. Among children in the U.S., Latino children are affected disproportionately by the obesity epidemic. Niños Sanos, Familia Sana (Healthy Children, Healthy Family) is a five-year, multi-faceted intervention study to decrease the rate of BMI growth in Mexican origin children in California’s Central Valley. This study is funded by the National Institute of Food and Agriculture of the United States Department of Agriculture, grant number 2011-68001-30167. The NSFS project consists of four major component interventions in the areas of nutrition, physical activity, economic and art-community engagement to induce behavioral change in our target population in order to achieve obesity prevention. SPARK Physical Education (PE) represents a paradigm shift in the traditional PE world. The SPARK programs are designed to involve all children, be more active, incorporate social skills, and emphasize both health-related fitness and sill development.

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### 1. Introduction

The prevalence of obesity disproportionately affects certain U.S. ethnic groups, including Latino-Americans. Among children and adolescent populations, obesity affects 21.2% of Latinos compared to 14% White non-Latinos (Ogden et al., 2012). Such differences suggest that more information is needed to assess childhood obesity risk and preventive factors in order to create culturally appropriate and sustainable behavioral interventions for high-risk populations (De la Torre et al., 2013).

In attempt to address the dearth of literature in the field of childhood obesity prevention for the growing Latino community and data suggesting that underlying community factors may impact these rates, we develop Niños Sanos, Familia Sana (NSFS), a five-year multifaceted intervention study targeting California’s Mexican-origin communities. The research goals include (a) identifying individual and environmental factors that influence food consumption patterns; and (b) generating new knowledge about community- and school- based interventions to reduce the rate of growth of BMI within Mexican-origin children. The behavioral intervention includes curriculum-based interventions in the community (preschool) and schools (K-2). A companion parent education and market-based (fruit and vegetable vouchers) intervention addresses the reality that parents make food choices for young children but may not have the resources to make healthy choices (De la Torre et al., 2013).

A major goal of *Niños Sanos, Familia Sana* is to reduce the rate of growth of childhood obesity among Mexican-origin children between the ages of three and eight by improving the economic capacity of low-income, Mexican-origin families, enhancing the nutritional skills of families, supporting the capacity of schools to more effectively provide Physical Education (PE) opportunities for children in preschool and K-2 settings, and providing community art programs that allow for nutrition and positive behavioral health messaging. Biannual anthropometric data, annual physical activity data and annual household survey data are collected of our sample population, which allow us to determine the impact of behavioral and community intervention factors on rate of growth of childhood obesity within our study (De la Torre et al., 2013) population. These data are compared to our comparison community that receives a nonnutrition community-based intervention.

Childhood obesity leads to lifelong struggles with weight, higher risks for cancer, cardiovascular disease, stroke, Type 2 diabetes, and can affect social and emotional factors .

Childhood obesity is such a national concern that the first lady, Michelle Obama, in 2010, led a push to change young children’s eating and exercise habits; stating that: “One in 5 children is overweight or obese by age 6”. She launched a huge campaign called Let’s Move to change the way a generation of children think about food and exercise and recommending 1 - 2 hours of physical activity throughout the day (Davis, 2007). ([www.Healthykidshealthyfuture.org](http://www.Healthykidshealthyfuture.org)).

Despite recent evidence suggesting slight declines in low-income, child obesity rates in the United States, these trends are not shared equally across subpopulations and high rates of childhood obesity are still prevalent across the United States (Pan et al., 2012).

Based on the most recent National Health and Nutrition Examination Survey (NHANES), approximately one in six children and adolescents in the U.S., aged 2–19 y, are obese (Ogden et al., 2012).

Baseline weight data from the NSFS study (Fall 2012) are shown on the table below. Findings revealed that baseline BMI measures of NSFS children are well above the national averages.

Table 1. BMI measures of NSFS children

Firebaugh and Golden Plains	Underweight	Normal	Overweight	Obese
Children 2-4 years old N= 435	N=7 (1.6%)	N= 219 (50.2%)	N= 89 (20.6%)	N= 120(27.6%)
National Average Children 2-5 years old			14.4%	8.4%
African American Children 2-5 years			10.6%	11.3%
Hispanic Children2-5			13.1%	13.1%

Firebaugh pre-schools and K-2<sup>nd</sup> grade teachers received SPARK physical education intervention from a SPARK trained physical education teacher. The project purchased K-2<sup>nd</sup> grade SPARK binders for teachers to help them integrate SPARK activities into the classroom. To familiarize the PE teacher to the materials, he attended a 2-day SPARK K- 2<sup>nd</sup> Grade training session in San Diego CA (De la Torre et al., 2013)

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