Abstract
Objectives: The long-term goal of this project is to evaluate the efficacy and feasibility of an integrated approach to reduce pediatric obesity in low-income Spanish speaking families with preschool-age children by validating two obesity risk assessment tools and one diet quality tool and determining the feasibility of EFNEP embedded in a medical clinic.

Description: Participant recruitment and data collection (parental surveys; 24-hour dietary intake, activity logs; anthropometric and biomarker measures; & mealtime video recordings) was completed by 1,425 participants and 210 children across four time points over a period of 6 weeks. In addition, significant effort was devoted to validation of biomarkers, technical planning for the upcoming biomarker analyses and statistical analyses of previously collected biomarkers.

One hundred parent-child pairs from 12 Head Start and WIC sites were enrolled (74% completion rate) in Y3 for a total of 210 participants enrolled. More than 30% of the children were overweight. Children with higher BMI percentiles-for-age had significantly higher plasma cholesterol, LDL-C and non-HDL-C levels compared to children with lower BMI percentiles for age. Twenty-one new videotapes were collected to assist with the validation of the parenting tool. Content and face validity of the Spanish diet quality tool were achieved after applying a multistage, iterative process that included 4 rounds of cognitive interviews. Twelve iPad kiosk pilot testing sessions were completed demonstrating longer clinic wait times and handing iPad directly to the parent enhanced usage. Physicians (n=11) generated 425 patient referrals, of which 237 were in Y3. Thirty-nine parent-child pairs were enrolled in the EFNEP intervention in Y3 for a total of 129 parents with 63% completing 5 or more classes. Parents (84%) identified physician referral as an important reason for enrolling.

Conclusion and Implications: Obesity risk assessment and diet quality tools for Spanish speaking families are being validated and an iPad kiosk and EFNEP intervention are being implemented in several medical clinics. These outcomes are intended to promote clinical intervention before children become overweight to establish a new trajectory of weight gain.

Objectives
The objectives of this research, education and extension plan are to:
1) Produce final versions of two validated Healthy Kids (HK) obesity risk assessment tools for low-income Hispanic speaking parents;
2) Develop and validate a visual diet quality tool for low-literacy English and Spanish-speaking parents;
3) Assess feasibility of embedded medical clinic EFNEP site with pediatric dietitian/nutritionist;
4) Assess feasibility and relevance of HK tools for pediatric dietitians;
5) Conduct additional analyses of obesity biomarkers on pediatric blood specimens.

Validation of Spanish Obesity Risk Assessment Tools
Participant recruitment and data collection continued to be the focus for year 3 (Y3) to validate the Spanish HK and MCMT tools. The data, consisting of self-report questionnaires and surveys, anthropometric measurements, samples of children’s blood, and family meal video taping were collected at 6- to 8-week intervals over a period of 6 weeks. In addition, significant effort was devoted to validation of biomarkers, technical planning for the upcoming biomarker analyses and statistical analyses of previously collected biomarkers.

In Y3, we continued the analyses of previous data (English speaking cohort) to examine the long-term association between children (biomarkers as various indices) HK subscales in a longitudinal model. Results from the preliminary statistical analyses indicate that 1) Different HK scales are associated with different biomarker indices, 2) Parent’s with higher HK scores (better behavior) have children that have overall healthier metabolic profile, 3) Results show an important time*HK interaction effect for pro-inflammatory indices. We have initiated meetings and the selection strategy for analysis of this body’s time.

Additional Analyses of Biomarkers
In Y3, we continued the analyses of previous data (English speaking cohort) to examine the long-term association between children (biomarkers as various indices) HK subscales in a longitudinal model. Results from the preliminary statistical analyses indicate that 1) Different HK scales are associated with different biomarker indices, 2) Parent’s with higher HK scores (better behavior) have children that have overall healthier metabolic profile, 3) Results show an important time*HK interaction effect for pro-inflammatory indices. We have initiated meetings and the selection strategy for analysis of this body’s time.

Feasibility of Medical Clinic EFNEP Intervention
In Y3, focus continued to be on recruitment of parents and expansion of medical clinic sites where referrals (LM Outputs) are obtained and classes are offered. Pediatric residents at 6 clinics identified new evidence-based curriculum for parent referrals to nutrition classes offered in English and Spanish. Physicians (n=11) from eight pediatric/ family practice medical clinics have generated 585 parent referrals. To date, approximately 60% of referrals and 15 phone calls are needed to get one parent enrolled.

Medical Center Kiosk
The kiosk provides parents with tailored family nutrition tips based on 22 items from the HK and MCMT tools. Average time to complete the kiosk survey was 3 minutes 15 seconds to 4 minutes 15 seconds under the 5 minute target. All parents (n=5) reported that it was “easy” to complete the survey and they would share the results with their child’s pediatrician.

Conclusions
The outcomes of this research may contribute to the identification of young children more likely to become overweight and obese. Important here is that clinical intervention can then be implemented before the children become overweight and obese to establish a new trajectory of weight gain.

In addition, we are producing many valid and reliable assessment tools for quality obesity risk identification and/or program evaluation for use by participants of USDA food assistance and education programs. We are using the Healthy Kids My Child at Meal Time, My Veggies (adults), Focus on Veggies (youth) and Focus on Breakfast, Focus on Sweet Drinks, Mi Niño a la Hora de Comer, Miitos Sanos, and Mis Vegetales in our projects.

Publications & Presentations


Presentations

Publications & Presentations

Funding
Supported by Agriculture and Food Research Initiative 2001-56001-22380 Food and Human Nutrition Research Unit, Project 2017-68001-68010-002-00D, University of California System, and the Departments of Pediatrics and Family Medicine, University of California, Davis.

References


