Food Responsiveness, Parental Food Control and Anthropometric Outcomes among Young American Indian Children: Cross-sectional and Prospective Findings

Objective: Assess cross-sectional and prospective associations between food responsiveness and parental food control and anthropometric outcomes among American Indian children.

Design: Parents/caregivers completed psychosocial surveys and trained staff measured children's anthropometry at baseline (kindergarten) and at follow-up (1st grade) as part of a school-based obesity prevention trial (Bright Start).

Setting: On/near the Pine Ridge Indian Reservation.

Participants: 422 child (51% female, mean age=5.8 years, 30% overweight/obese) and parent/caregiver (89% mothers) dyads.

Main Outcome Measures: Two independent variables (child’s Food Responsiveness and Parental Control scales) and six child anthropometric dependent variables (overweight status, body mass index z-score, % body fat, waist circumference, triceps skinfold, subscapular skinfold). Linear regression analyses, stratified by sex and adjusted for age and treatment condition.

Results: Baseline Food Responsiveness scale scores were positively associated with all six baseline anthropometric outcomes among boys (P's all <.01), but not girls. Parental Control scale scores were not significantly associated with outcomes and no prospective associations were statistically significant.

Conclusions: Responsiveness to food may be associated with excess adiposity in young American Indian boys, however, the effects may benefit by addressing eating without access to foods, particularly with highly palatable foods, is positively associated with children's weight.

INTRODUCTION

Although several decades ago problems with being underweight and malnourished were major issues for American Indian youth, today obesity is highly prevalent. In the 1990’s, obesity rates among American Indian children and adolescents exceeded rates of children with other racial/ethnic backgrounds in the general US population. Data from 2001–2007 indicate that the odds of obesity among American Indian youth nationally is about 2–3 times greater than other children their age.

The development of obesity is complex, affected by genetic, environmental and personal influences. In obesity prevention research, the goal is to identify and change key malleable influences. In this regard, environmental changes are important, particularly for young children who do not typically have much control over the foods and activity resources available to them in their daily lives. Parents/caregivers are the primary providers of foods and beverages during the early school-age years and they greatly influence their children’s eating patterns.

In the last decade, particular attention has focused on the influence of parental feeding practices on children’s weight status and other obesity indicators. Birch and colleagues have shown that parental restriction of children’s eating (parent restricts child’s access to foods), particularly with highly palatable foods, is positively associated with children’s weight. Parental food restriction is a form of parental food control and scales developed to measure these concepts often include items that measure parental attempts to limit their children’s access and intake of particular foods. This early work hypothesized that too much parental food control interferes with children’s ability to regulate their own intake. However, much of the research has focused on homogenous samples and results have been inconclusive.

A few studies have examined parental feeding practices, including parental food restriction and parental control, among lower income and racially-diverse youth. Taveras et al identified greater use of restrictive feeding practices among Black and Hispanic mothers compared to White mothers as a risk factor for obesity. Powers et al found a positive association between maternal food control and children’s body mass index (BMI) z-score, however, this finding was limited to obese mothers. In contrast, feeding practices were unrelated to a child’s sex or weight in a study with children from the United Kingdom. A study of African American girls and boys found significant cross-sectional associations between parental food restriction and total fat mass, however, these associations did not hold when examined over time. These studies indicate that food restriction or some form of parental food control appears to be related to children’s weight status cross-sectionally. Few prospective studies have investigated these relationships, although a recent study showed that parental food control may be protective of weight gain among young children.