

Abstract category: Nutrition education and Behavioral Sciences: 57: Nutrition, Physical Activity, and Behavior change.

Title: BMI of parents of 4th graders aligns with psychosocial and demographic factors but is stable over a year: Considerations for healthy weight intervention design and assessment

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Objective: Examine weight status of parents of 4th graders when both participated in a randomized controlled trial of a school-based intervention focused on culinary and physical activity experiences in northern Colorado.

Methods: Fuel for Fun (FFF) is a year-long school-based, culinary-driven program for 4th graders that includes cafeteria, physical and family-based activities as well as parent participation in online nutrition education. Student cohorts were designated as either control or FFF intervention. Parents had youth attending schools assigned to 1 of 4 treatments that varied in type and intensity of parent involvement. Data were collected via a Qualtrics online survey completed by intervention and control parents at baseline (BL), end of first year (FU1) and beginning of 5th grade (FU2). The survey included self-report height, weight, sociodemographic factors and eating behaviors, attitudes, and psychosocial attributes using validated measures e.g., sense of coherence (SOC), eating competence, stress and physical activity. Low-income was defined as either worrying about money for food or using nutrition assistance. Sociodemographic differences in baseline BMI were examined using chi-square, and means testing. BMI stability was examined using GLM with repeated measures controlling for BL sociodemographic factors.

Results: Parents (n=410 BL, 220 FU1, 219 FU2) were predominantly female (87%), white (88%), and well educated (62% undergraduate, 32% graduate degree). BL mean BMI was 25.9 ± 5.6 ; 52% normal BMI, 28% overweight and 18.0% obese. Mean age was 39.2 ± 5.9 y. BL BMI was $>$ in males, an educational level \leq high school, a lower-income, lower EC, and higher stress, (all $P < 0.05$). BL BMI was similar among parent treatment groups and student cohorts. BMI remained stable over the study period; even after controlling for student cohort, parent treatment group, sociodemographic and psychosocial behaviors.

Conclusions: Parents of 4th graders have relative BMI stability. However, numerous sociodemographic and psychological factors are associated with BMI status. Healthy weight nutrition and physical activity interventions for parents of school-age youth will benefit by including activities and components that address these factors and consider them in intervention assessment.

Keywords: weight stability, school-age youth, stress, eating competence