

Evaluation of Behavioral and Anthropometric Outcomes 1 Year after FitKids 360: a Community Based Pediatric Obesity Program

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Background: Childhood obesity is among America's greatest public health concerns. FitKids360 (FK360) is a 7-week, community-based, pediatric weight management program available for free to families with children ages 5 to 16 with a BMI greater than the 85th percentile. The curriculum is family-centered, meets two hours per week, and combines health behavior education with exercise and mentored goal setting.

Purpose: To assess long-term changes in lifestyle and anthropometric characteristics in youth who have participated in the FitKids360 program.

Methods: This is a prospective cohort analysis of 77 children who participated in FK360 between 2010 and 2013 and had post-intervention data available to complete the objective. Measures included height, weight, and date of birth, from which BMI Z-score (BMIz) and BMI percentile (BMI%) were calculated to compare BMI changes across different ages and genders. Additionally, the Family Nutrition and Physical Activity (FNPA) survey was completed to assess obesity-related behaviors. All measures were assessed before (Pre) and after (Post) the 7-week FK360 class. In addition, follow up (FU) data were obtained 3 to 41 months after the FK360 program through one or more of the following sources: a FK360 reunion event, a sister program called FK On The Move or from PCPs. Changes in outcomes of interest were analyzed across the Pre-FU and Post-FU interval using within-subjects repeated measures analysis of variance (RM-ANOVA) and covariance (RM-ANCOVA) in order to adjust for potential confounders, including gender and age.

Results: From Pre-FU, there was a significant decline in BMIz (F=10.8; p=0.002) and a similar trend in BMI% (F=3.9; p=0.054), while FNPA scores significantly improved (F=22.2; p<0.001) (Table 1). No differences were seen in BMIz or BMI% changes across age groups or genders, though there was a trend toward greater improvement in FNPA for children <10 yrs (F=3.8; p=0.059) compared to older children.

Conclusion: Approximately 1 year after starting a FK360 class, participants showed improvement in their health habits (i.e., FNPA), BMI% and BMIz. In general, these improvements occurred during the 7-week FK360 class, after which changes were largely maintained through one year of follow-up. In conclusion, these data indicate that youth who participated in FK360 significantly improved their weight status and related health behaviors one year after completing treatment.

Table 1: Mean (\pm SD) FitKids 360 Outcomes before (Pre), after (Post), and 1 year after (1-Yr FU) the Class

Variable	Pre	Post	1-Yr FU	1-Yr FU – Pre
Age	9.6 (2.7)	9.7 (2.7)	10.7 (2.9)	1.1
BMI	26.6 (5.0)	26.5 (5.0)	27.5 (5.0)	0.9
BMI Percentile	97.2 (3.7)	97.0 (4.4)	96.1 (6.4)	-1.1**
BMI Z-score	2.14 (0.49)	2.12 (0.49)	2.04 (0.54)	-0.1*
FNPA	55.9 (7.2)	62.7 (7.6)	61.9 (6.6)	6.0*

*Significant change from pre to 1-year follow-up ($p < 0.05$)

**Borderline significant change from pre to long-term follow-up ($p = 0.0536$)

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