

Weight loss outcomes in two-year multidisciplinary lifestyle intervention program involving obese children and their parents



Krnic N, Spehar Uroic A, Bogdanic A, Dumic Kubat K, Pavic E, Rojnic Putarek N

University of Zagreb Medical School, Zagreb, Croatia; Department of Pediatric Endocrinology and Diabetes, Clinical Hospital Centre Zagreb, Zagreb, Croatia

BACKGROUND

Increasing prevalence of obesity requires improvement in current therapeutic approaches.

Multidisciplinary lifestyle intervention programs involving both children and their parents are showing promising results.

Our aim was to compare the efficacy of family-based multidisciplinary program with standard weight loss counseling program in obese children.

METHODS

The **intervention group** consisted of **119 obese children** with body mass index (BMI) > 85th percentile for age and sex, recruited from the outpatient pediatric endocrinology clinic who were introduced to structured educational courses delivered by pediatric endocrinologist, registered nurse, psychologist, nutritionist and social pedagogue.

Total of 79 of them (45 girls, 34 boys, age 6-18 yrs) have finished the two year educational-interventional program during which both children and their parents learned about metabolic complications of obesity, healthy eating habits and importance of physical activity.

Improvement in self-confidence, motivation and lifestyle changes were encouraged.

Participants were divided in small age-homogenous groups (6-10 participants). Intense one-week course was followed by regular follow-up visits each month during the first 6 months, and every two months thereafter. Multidisciplinary team participated in all follow-up visits.

The **control group** consisted of **81 obese children** (39 girls, 42 boys, age 6-17 yrs), followed for two years through regular outpatient visits with individual physician counseling.

Main outcome was **weight reduction** measured through **change** in **BMI z-score** (zBMI).

RESULTS

Weight loss was achieved in 90% of participants in intervention group and 60% of controls.

• Significantly reduced zBMI was found in both groups 1yr and 2 yrs after the baseline (1st year: $\Delta zBMI_{int} = 0.5$, $t = 9.26$, $p < 0.001$; $\Delta zBMI_{contr} = 0.2$, $t = 3.23$, $p < 0.01$, 2nd year: $\Delta zBMI_{int} = 0.6$, $t = 6.43$, $p < 0.001$; $\Delta zBMI_{contr} = 0.2$, $t = 4.2$, $p < 0.001$).

• Drop-out rate in intervention group was 33.6%.

• Children younger than 12 yrs had better success ($t = 2.15$, $p = 0.035$; $t_{interv} = 2.6$, $p = 0.015$; $t_{contr} = 2.2$, $p = 0.034$).

• There was no significant difference in weight reduction rate between girls and boys in both groups.

• Children who were more regular during follow up had better success rate in both groups ($r = 0.433$, $p < 0.001$).

• At 2-yr-follow up 86% of participants in intervention group and 70% of controls maintained weight loss.

• Intervention group achieved higher zBMI reduction than control group both 1yr ($t = 4.266$, $p < 0.001$) and 2 yrs after the baseline ($t = 3.268$, $p = 0.002$). Table 1.

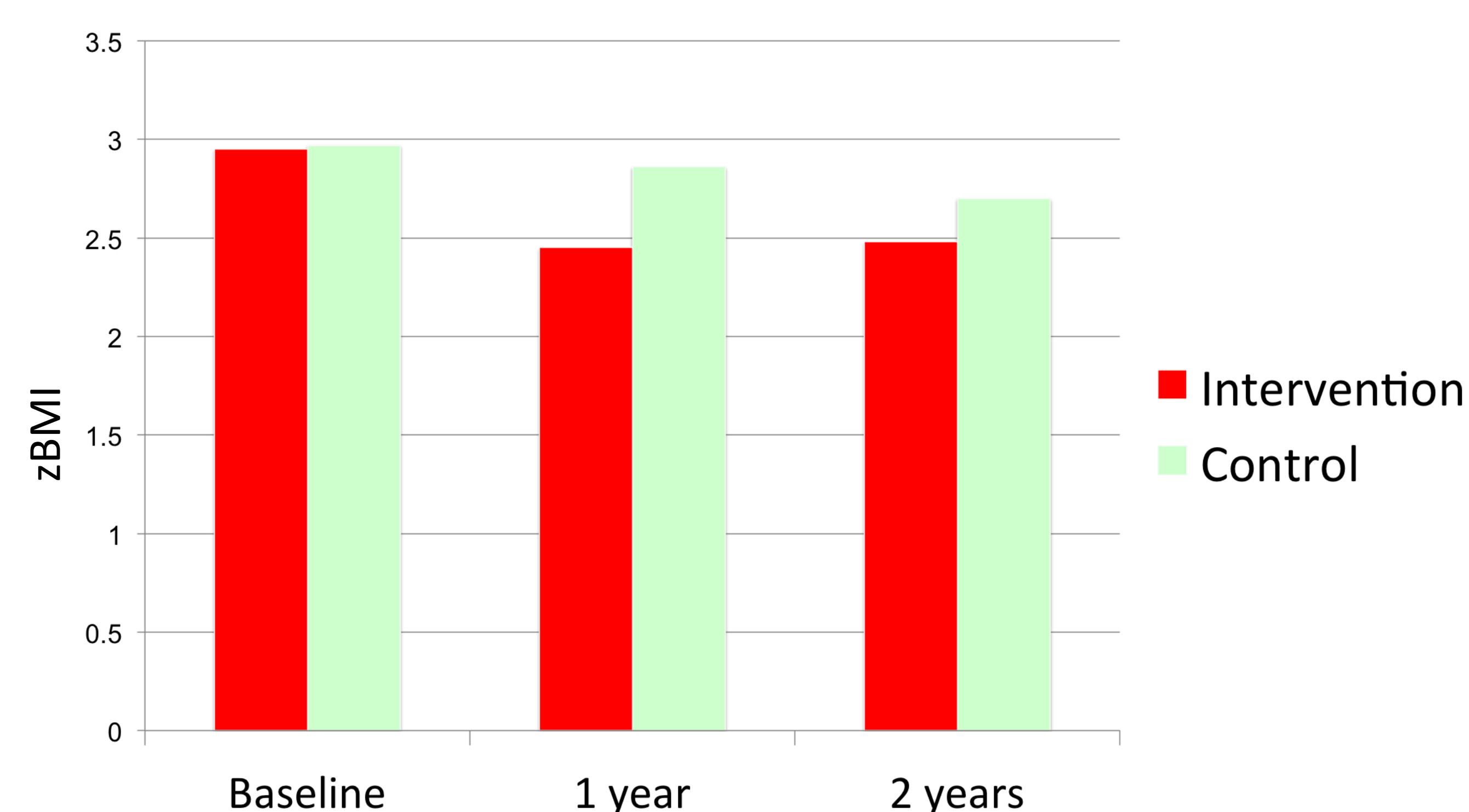


Table 1. Difference in zBMI between intervention and control group at baseline and after 1 and 2 years

CONCLUSIONS

- Multidisciplinary approach, structured education and family-oriented program for weight loss have favorable outcome.
- Dedication to program measured through regularity of participation and better parental control of younger children lead to better results.
- Improvement in weight reduction is modest, and new intervention modalities for both children and their parents are necessary.

