

Assessment of the efficacy of a family-based intervention for the treatment and prevention of childhood obesity

Meyerovitch Joseph^{1,2,3}, Dafna Wolf², Irit Poraz^{2,4}, Galia Gat-Yablonski^{1,2}, Biana Shtaf^{1,2}, Moshe Phillip^{1,2}, Shlomit Shalitin^{1,2}, Nagelberg N^{1,2}, Michal Yackobovitch-Gavan^{1,2}

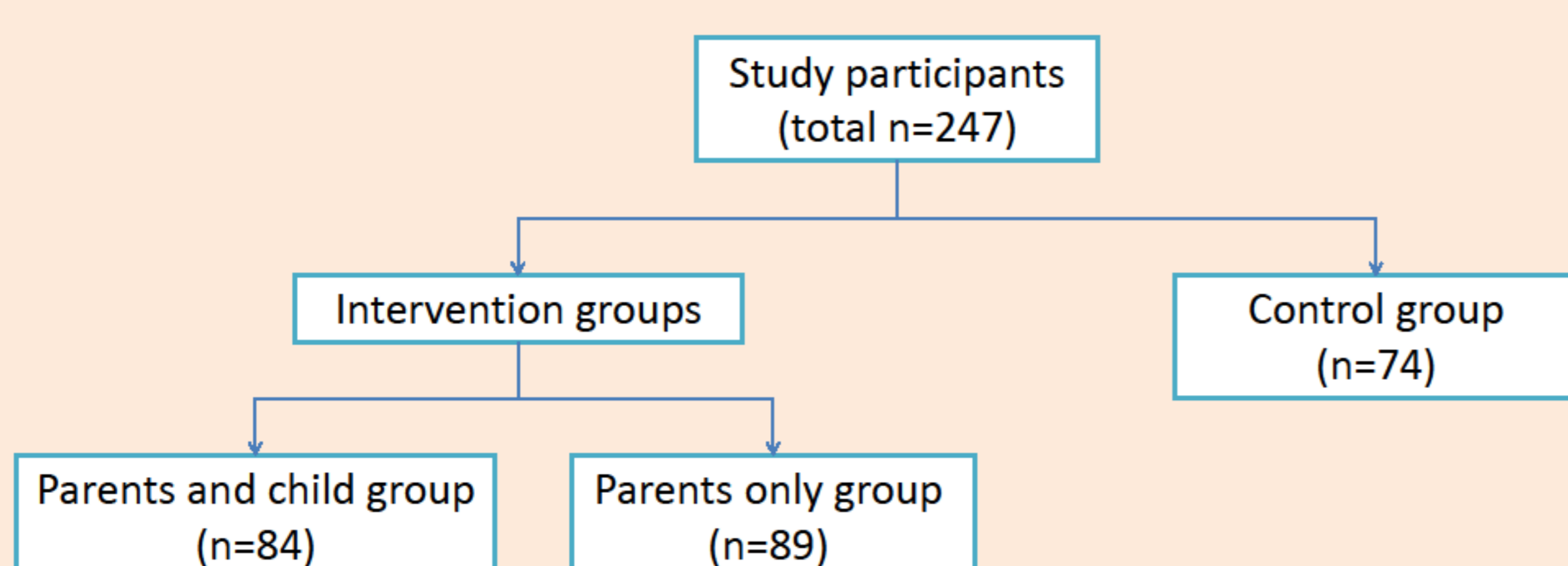
¹The Jesse Z. and Sara Lea Shafer Institute for Endocrinology and Diabetes, National Center for Childhood Diabetes, Schneider Children's Medical Center of Israel, Petah Tikva 49202, Israel (M.J., P.M., S.S.); ²Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv 69978, Israel (M.J., P.M., S.S.); and ³Chief Pediatrician, Community division, Clalit Health Services. Tel Aviv 6209813, Israel, ⁴ Pediatric Nutrition Unit

• Study Objectives:

- To assess a **family-based obesity prevention and treatment program** for children **ages 5-11 Y** by comparing the efficacy of two **intervention strategies**, involving **Parents only** versus **Parents and child**, to a **control group**.
- To Identify **clinical, demographical and biochemical predictors** for a decrease in the obesity rate (BMI-SDS).

• Study methods

Prospective randomized study among 5-11 yrs w/ 85-99 BMI percentiles.



- ✓ Two intervention groups: **Parents only group** and **Parents and child group** participated in 12 weekly meetings with dieticians and psychologists; and a **Control group**.
- ✓ Changes in anthropometric and biochemical variables and clinical outcome were assessed.
- ✓ **Follow-up continued for 2 years.**

• Compliance to the program % visit attendance:

Study Visit	Parents and child group	Parents only group	Control group	Total participants
Baseline (0 mo)	84 (100%)	89 (100%)	74 (100%)	247 (100%)
After intensive intervention (3 mo)	62 (73.8%)	59 (66.2%)	51 (68.9%)	172 (69.6%)
End of follow up (24 mo)	45 (53.8%)	47 (52.8%)	37 (50.0%)	129 (52.2%)

- There was no significant difference in attendance between the study groups ($p=0.092$).

- A positive correlation was found in the Parents and child group between intervention meetings' attendance and BMI-SDS decrease at the end of the intervention ($r=0.382$, $p=0.005$, $n=52$).

• Study groups -Baseline characteristics

	Parents and child group (n=84)	Parents only group (n=89)	Control group (n=74)	P
Age (mean±SD)	8.49±1.53	8.69±1.53	8.12±1.3	0.052
Male gender (%)	29.8	34.8	33.8	0.735
BMI-SDS V1 (mean±SD)	1.78±0.34	1.80±0.30	1.78±0.31	0.844

• Change in BMI (SDS) after intensive intervention (3 months)

	Parents and child group (n=61)	Parents only group (n=58)	Control group (n=49)
BMI-SDS at baseline (Kg/m ²)	1.83±0.33	1.74±0.31	1.73±0.32
BMI-SDS after intervention (Kg/m ²)	1.76±0.36	1.66±0.36	1.70±0.31
P	0.012	<0.001	0.301

At 12 weeks, the decrease in BMI-SDS was significant only in the intervention groups

• Change in BMI (SDS) at the end of follow-up (24 months)

	Parents and child group (n=45)	Parents only group (n=45)	Control group (n=37)
BMI-SDS at baseline (Kg/m ²)	1.73±0.31	1.75±0.31	1.68±0.31
BMI-SDS after intervention (Kg/m ²)	1.56±0.46	1.67±0.33	1.61±0.38
P	0.006	0.079	0.137

After 2-years, decrease in BMI-SDS was significant only in the Parents and child group.

Stepwise linear regression analysis

A greater decline in BMI-SDS at the end of the intervention was associated with:

- Older age at baseline ($\beta=0.282$, $p=0.012$)
- Lower baseline TSH level ($\beta=-0.214$, $p=0.049$)
- Higher Adiponectin level at the end of the intervention ($\beta=0.345$, $p=0.002$)

Study Results - continued

During the **12-weeks of intervention**:

- In all participants, the decrease in BMI-SDS was positively correlated with:
 - **Child's initial BMI-SDS** ($r=0.183$, $p=0.017$)
 - **Adiponectin level at the end of the intervention** ($r=0.222$, $p=0.014$)
 - **The change in CRP level** ($r=0.185$, $p=0.03$)
- In all participants, the decrease in BMI-SDS was negatively correlated with:
 - **Initial TSH level** ($r=-0.159$, $p=0.043$)
 - **TSH level at the end of the intervention** ($r=-0.177$, $p=0.035$)
 - **The change in Adiponectin level** ($r=-0.206$, $p=0.026$)

After **2-years of follow-up**:

- In all participants, the decrease in BMI-SDS was positively correlated with:
 - **Child's initial BMI-SDS** ($r=0.266$, $p=0.002$)
 - **Adiponectin level at the end of the intervention** ($r=0.210$, $p=0.051$)
 - **Fasting insulin level at the end of the intervention** ($r=0.214$, $p=0.032$)

Main conclusion:

a behavioral intervention program for the prevention and treatment of childhood obesity that focuses on parents and children was found to have significant positive short and long term effects on BMI-SDS.



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