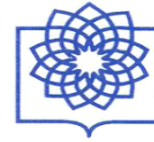




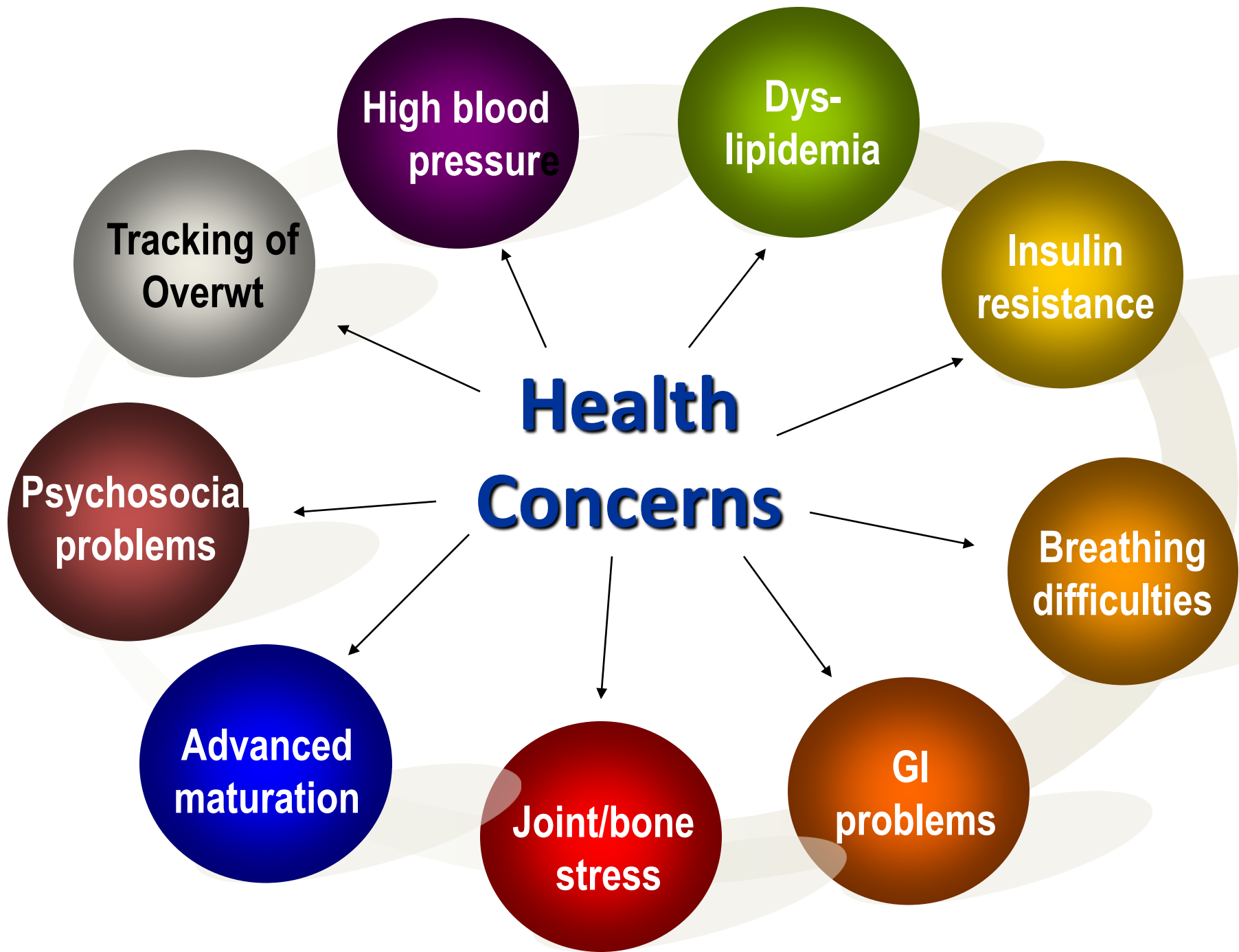
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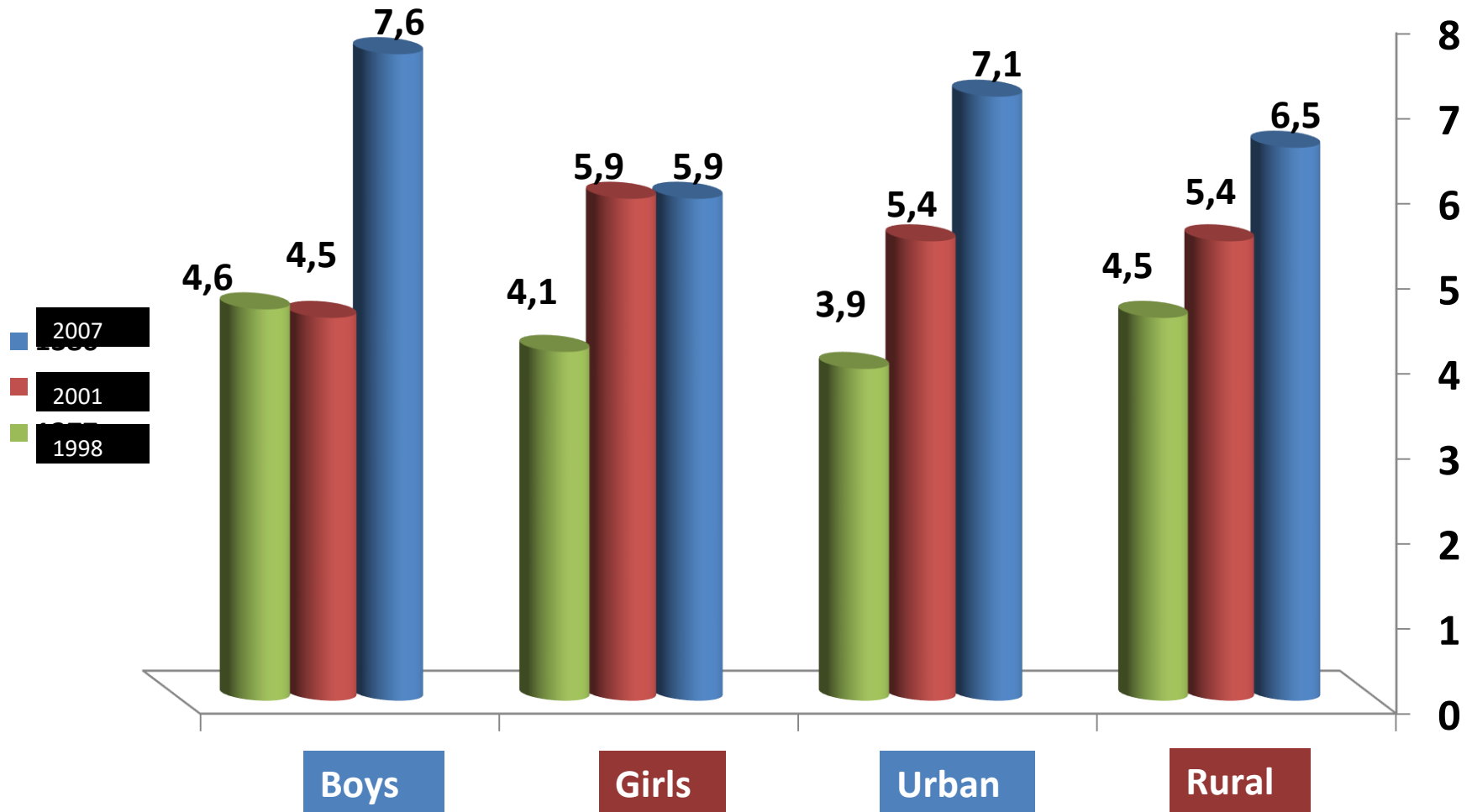
Shahid Beheshti University Of  
Medical Sciences And Health  
Services

# Effectiveness of a primary health care- based intervention on management of overweight/obesity in school age children: **A pilot study**

**N Omidvar, S Narmcheshm, P Amiri, N Kalantari, Z Amiri, F salehi, R Sobhani.**



# The prevalence of overweight and Obesity in Iranian children : A new trend

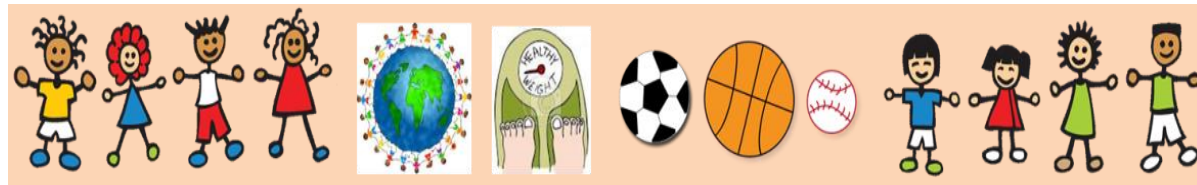


# Background

- No previous national program or protocol for obesity control and prevention in Iran.
- **2011:** The first National Guidelines for Diagnosis and Management of Overweight / Obesity among Children & Adolescents

# Study Goal

To design and evaluate effectiveness of a primary health care-based intervention in the framework of the national guideline to control overweight and obesity in school age children.



# Study Design

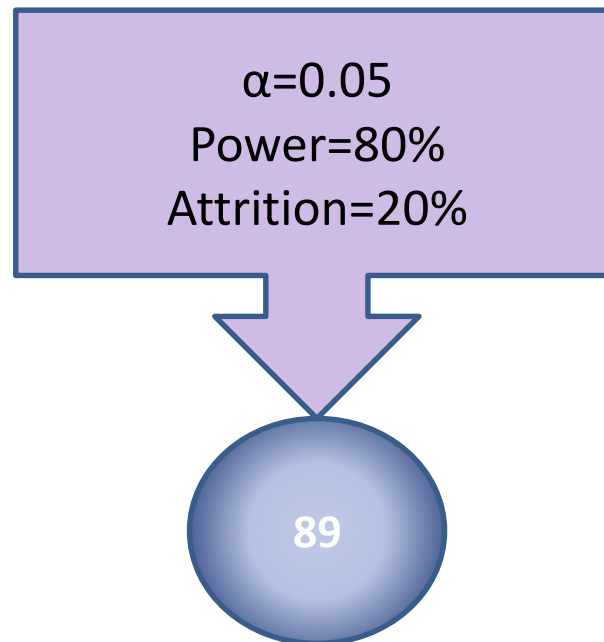
- **HSR (Health System Research)**
- **RCT**
- **Secondary prevention program**



# Sample Size

Sample included School children in grade 1 (6-7 year old) from district 7 and 8 in the city of Tehran.

$$N = \frac{[(2.29)^2 + (2.05)^2](0.84 + 1.96)^2}{(1)^2} = 74$$



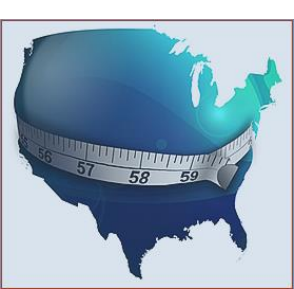
# Inclusion/exclusion criteria :

- **Inclusion criteria:**

- Overweight or obese first grade (6-7year) children based on 2007 World Health Organization criteria.
- Not on any medication affecting glucose and lipid profile homeostasis and weight.
- Not being diagnosed with hypothyroidism, diabetes, cardiovascular disease, epilepsy.
- Not following a particular diet or participating in other trials

- **Exclusion criteria:**

- Having fracture during study





# Assessment tools for nutrition and health status of children

- **Demographics and medical history**
- **Anthropometry:** Ht, Wt, BMI/ A, Waist cr
- **1 day food diary**
- **Physical Activity**(CASPIAN questionnaire)
- **Biochemical factors:** FBS, TG, TC, LDL\_C and HDL\_C
- All measurements at the beginning, 3<sup>rd</sup> , 6<sup>th</sup> and 12<sup>th</sup> month



# Control of confounders

## Sex and Weight Status of the studied children

Variable		Intervention group	Control group	*P
Sex	Girl 86	42(56%)	45(54.2%)	0.82
	boy 74	33(44%)	38(45.8%)	
Overweight/ obesity	overweight	26.7%	15.7%	0.08
	obesity	73.3%	84.3%	

# Control of confounders

## Comparison of study groups

Variable		Intervention N(%)	Control N(%)	*P value
History of GDM	+	9(12.2)	9(10.8)	0.79
	-	65(87.8)	74(89.2)	
History of familial obesity	+	71(95.5)	72(86.7)	0.17
	-	3(4.1)	11(13.3)	

# Control of confounders

**No statistically significant** differences between the two groups in terms of:

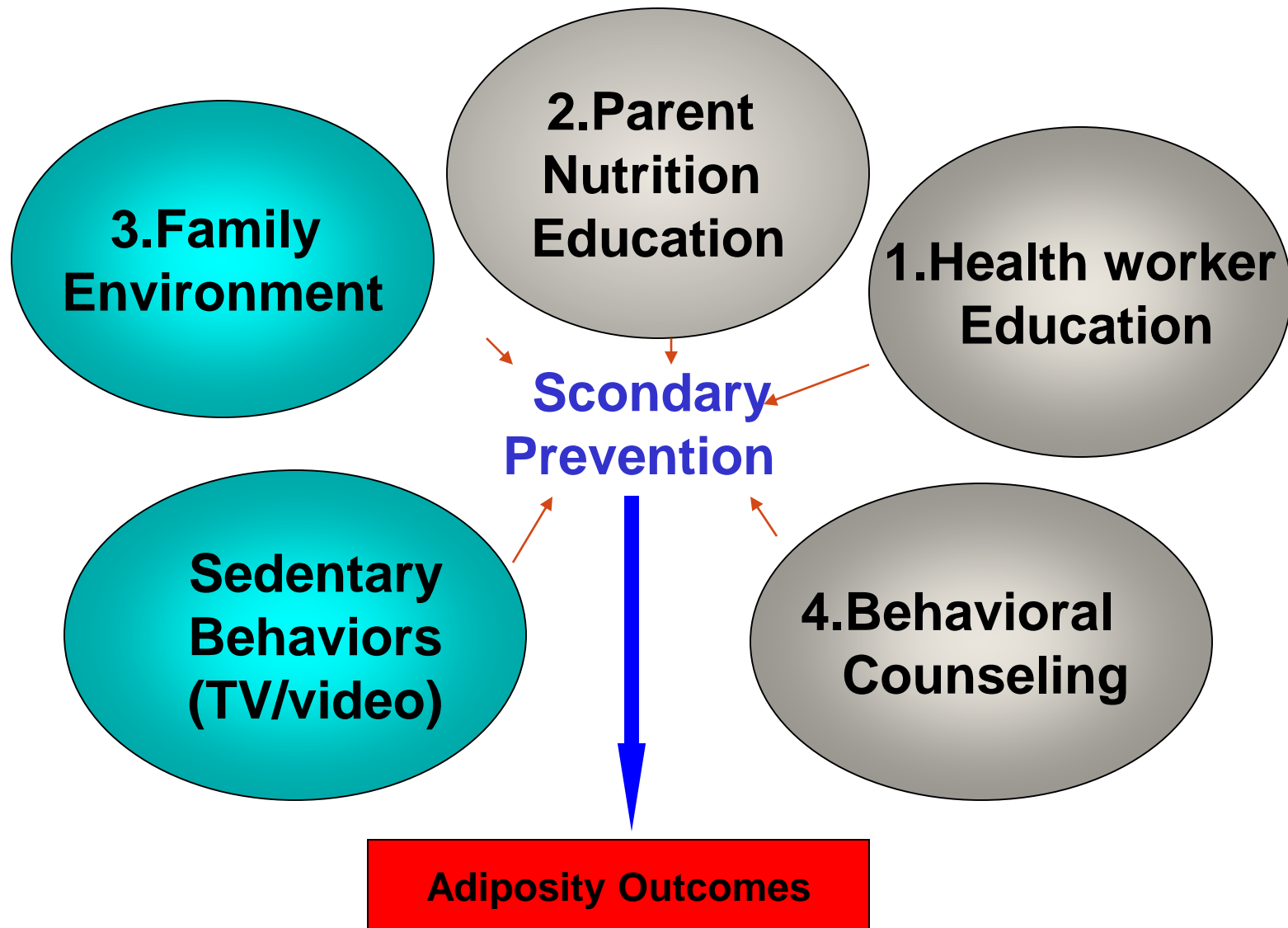
- **parents education level,**
- **Parents Occupation**
- **family structure/size**

# The intervention

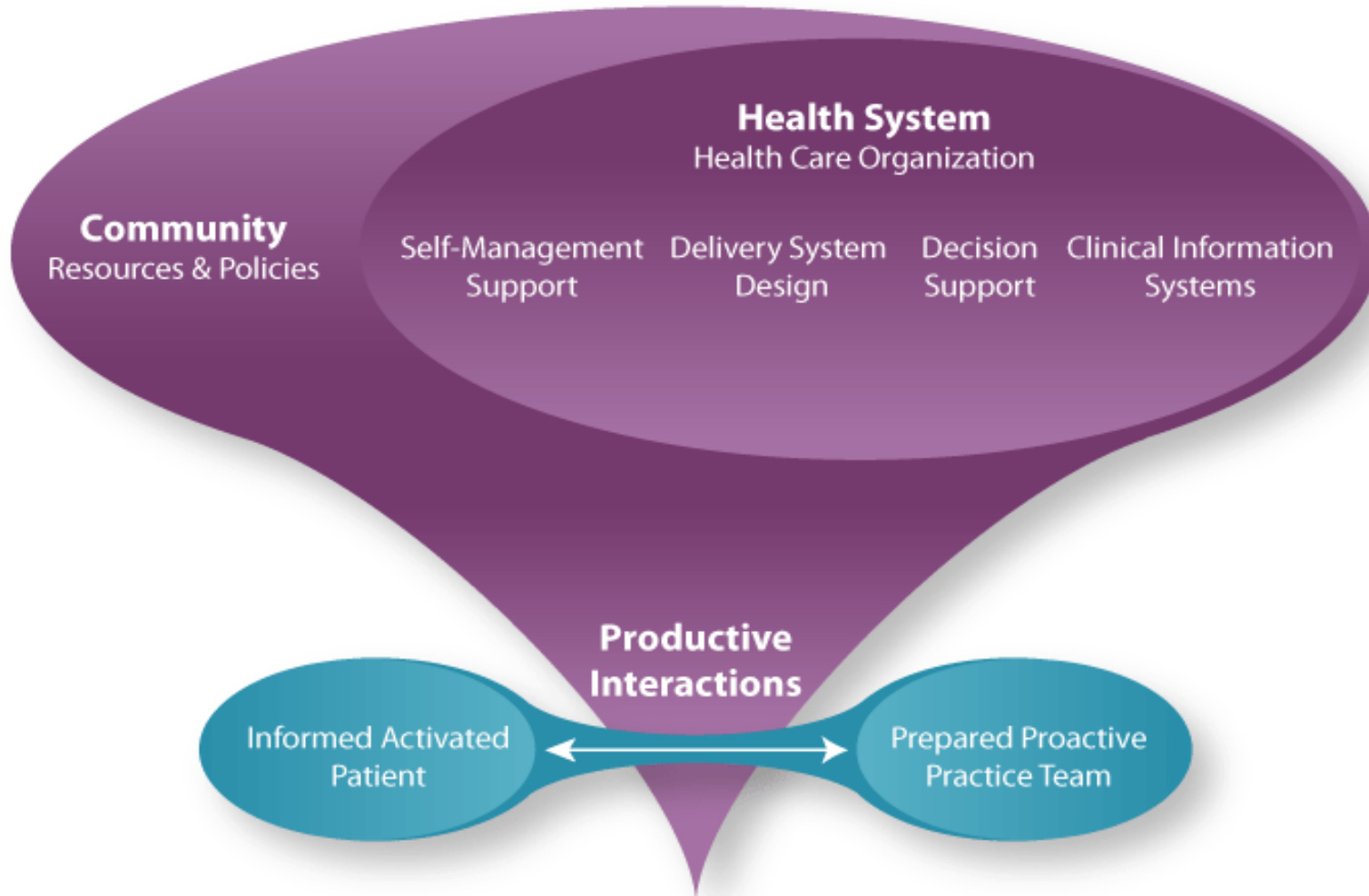
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# Components of the Interventions



# Theoretical Framework: Chronic Care Model



# Components of CCM

## Self Management Support

*Mothers nutrition and health education to improve their capacity to manage their family food environment*

## Delivery System Redesign

*Development of clear protocols for the physicians and health workers*

## Decision Support for Providers

*Training of the health workers and physicians based on the defined protocols*

## Clinical Information System: CIS

*Development of recording sheets*



# Capacity development of health workers

- Workshops for health workers and physicians



- Meetings with schools' alumni
- Providing the health centers with the required instruments: including stadiometer, sphyngomanometer, and scales

Child initial assessment

Mothers education

Ist  
mo.

week1

First session

week2

Second session

week3

Third session

week4

2nd mo

week6

Fourth session

week8

Fifth session

3rd mo

- Anthropometric measures + physical activity + dietary assessment  
(Intense phase)

6th mo

- Anthropometric measures + physical activity + dietary and biochemical assessment (follow-up phase)

12th mo.

- Anthropometric measures + physical activity + dietary assessment  
(Maintenance phase)

# Content of the mother education package

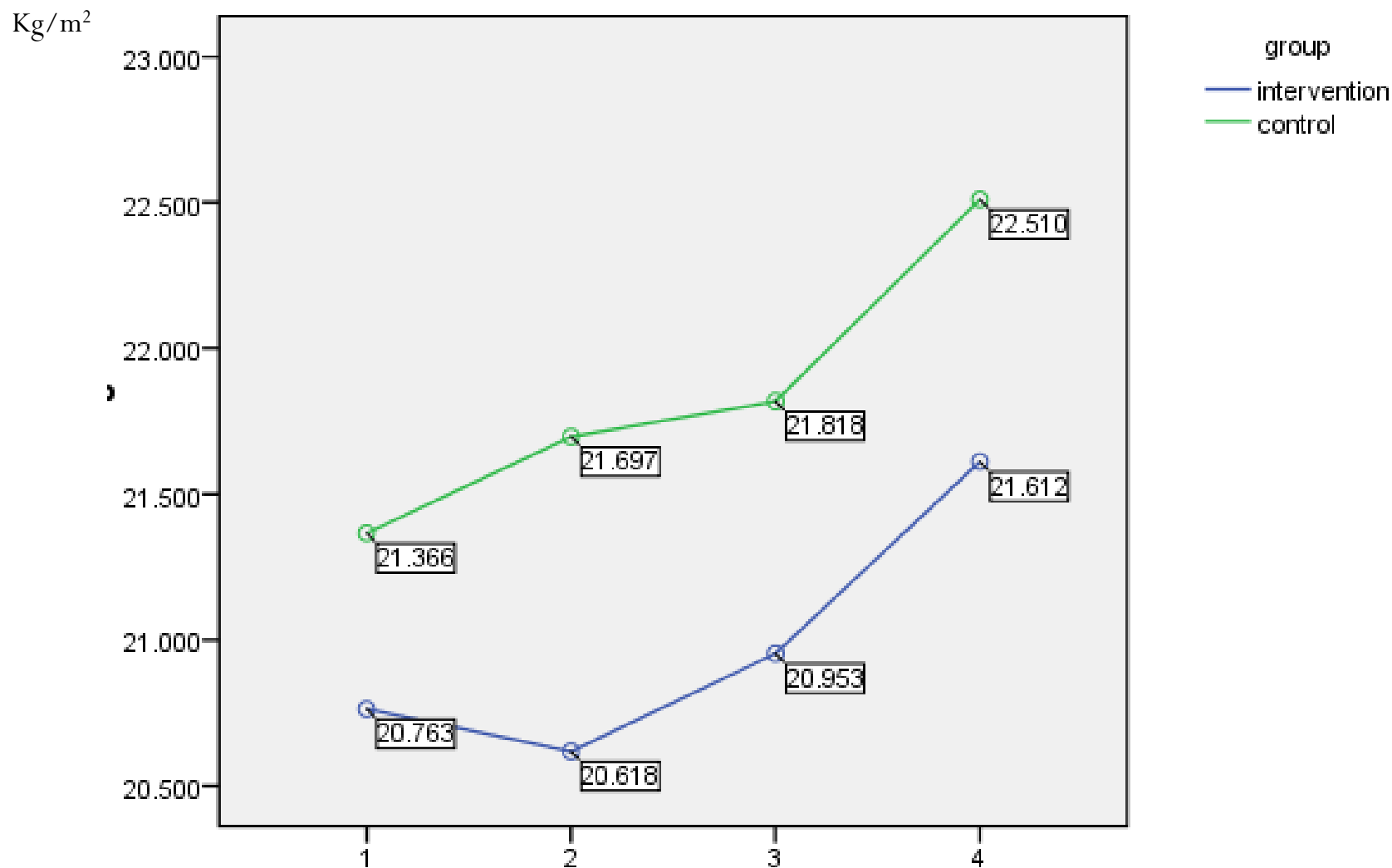
- Focus on 7 Behaviors:
  1. Regular Meals
  2. Reducing nibbling, specially calorie-dense choices
  3. Increasing fruit and vegetable intake
  4. Increasing water intake
  5. Increasing physical activity
  6. Decreasing sedentary behaviors and screen time
  7. Regular sleep time
- Individual Goal setting
- Parenting style
- Follow-ups

# Evaluation of Mothers' Education Sessions

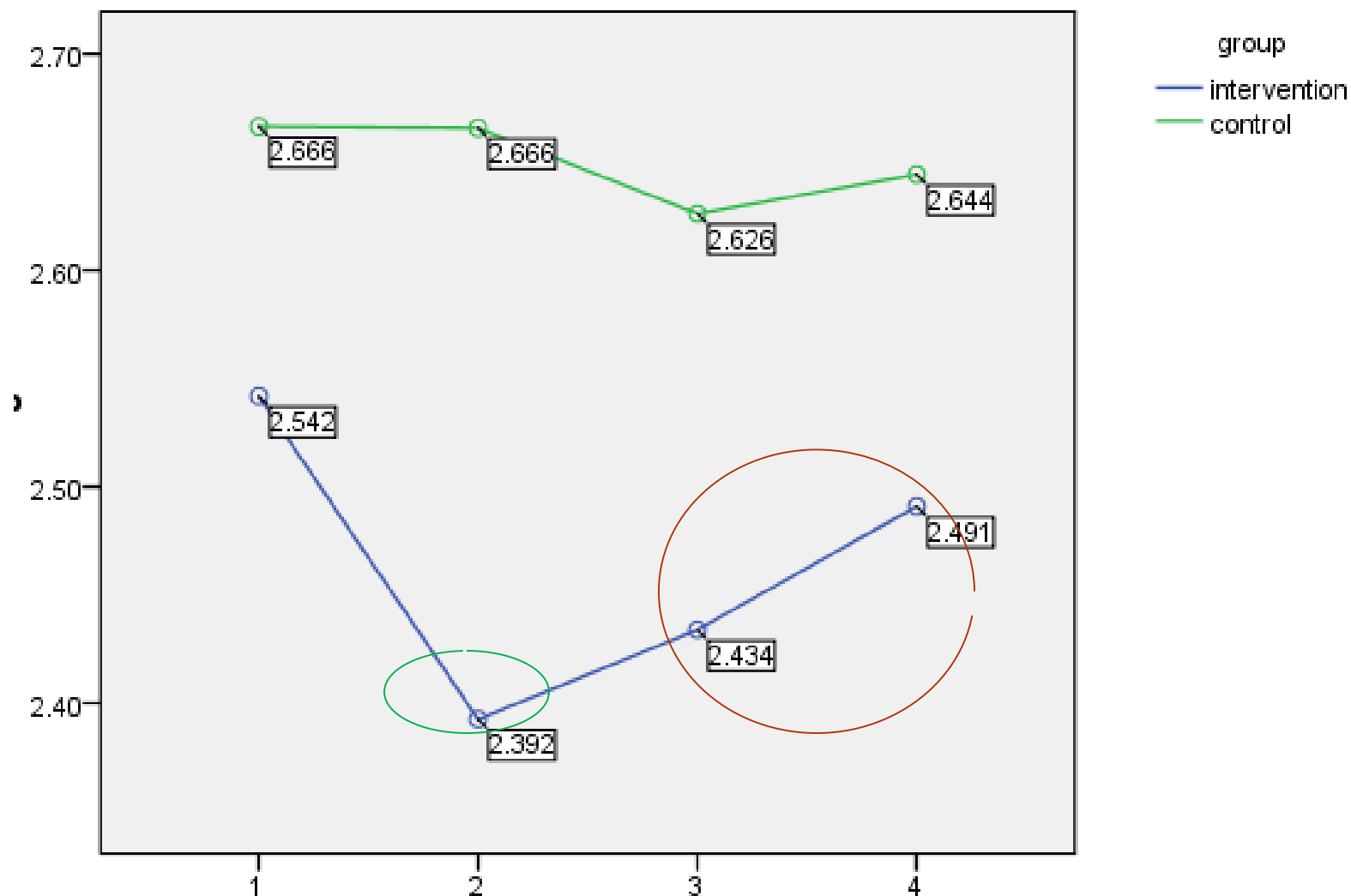


Variable	Mothers response	
Booklet's Pictures quality	Clear	75%
	Average	25%
	Weak	0
Applicability of booklet information in real life	Completely App.	65.6%
	Some were App.	34.4%
Was the number of sessions adequate?	Adequate	71.4%
	Too many	3.6%
	Inadequate	21.4%
How do you rate teaching?	Good	83.9%
	Moderate	16.1%
	Weak	0
Overall how do you rate the 5 sessions 1 (weak) to 10(excellent)	8.8	

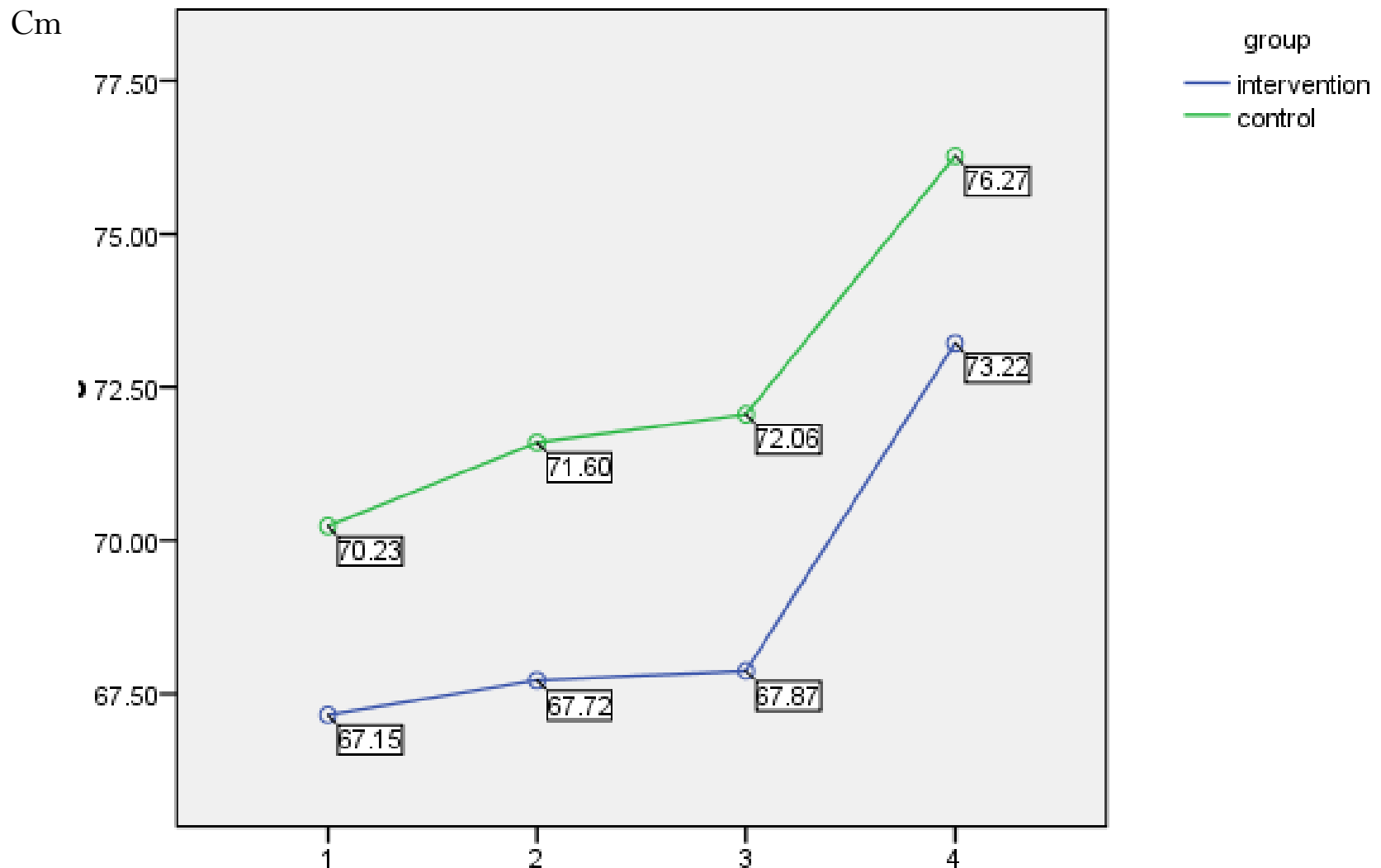
# BMI changes over 12 month follow up in both groups



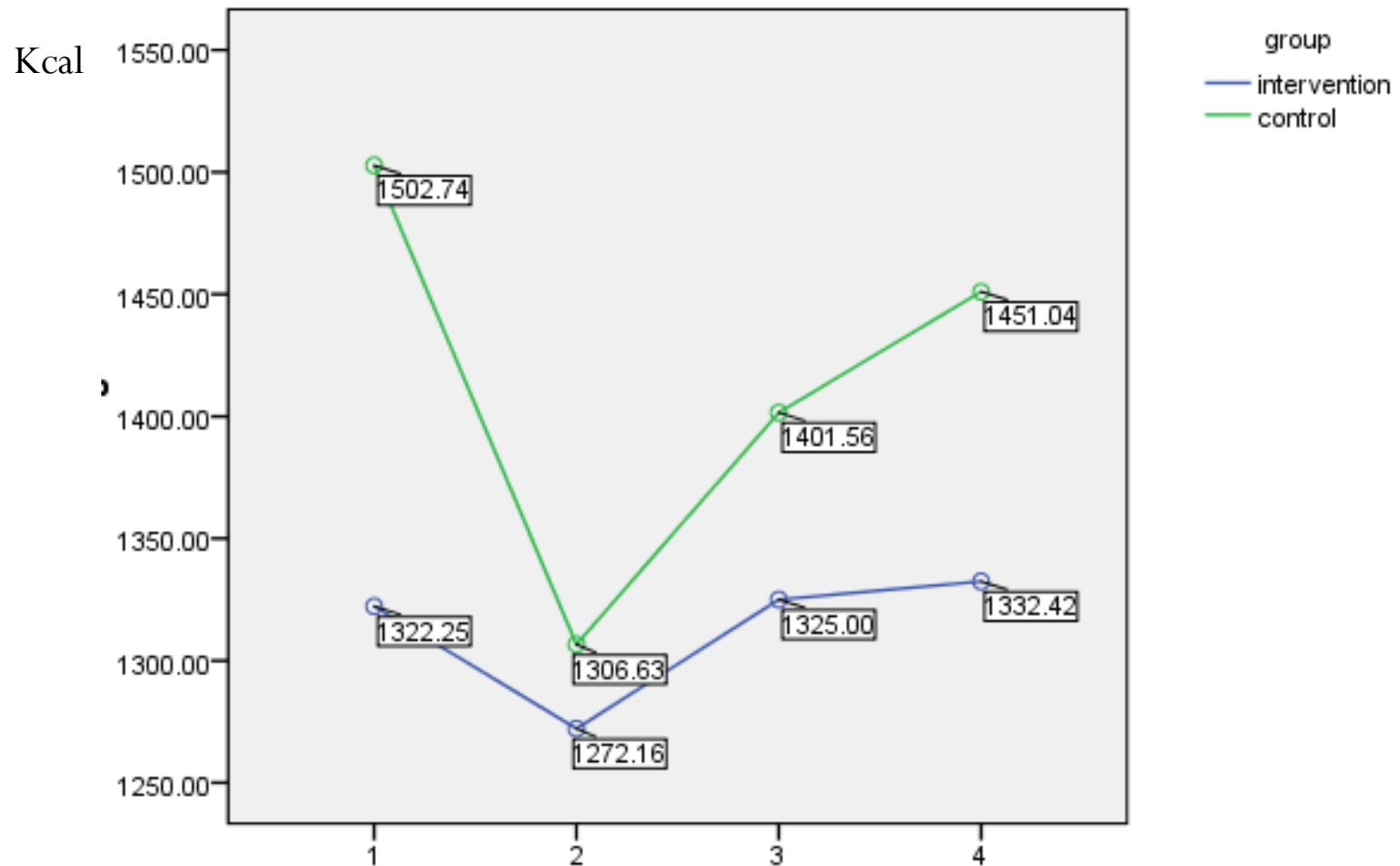
# BMI z-score changes over 1 year follow up in both groups



# Waist circumference changes over one year follow up in both groups

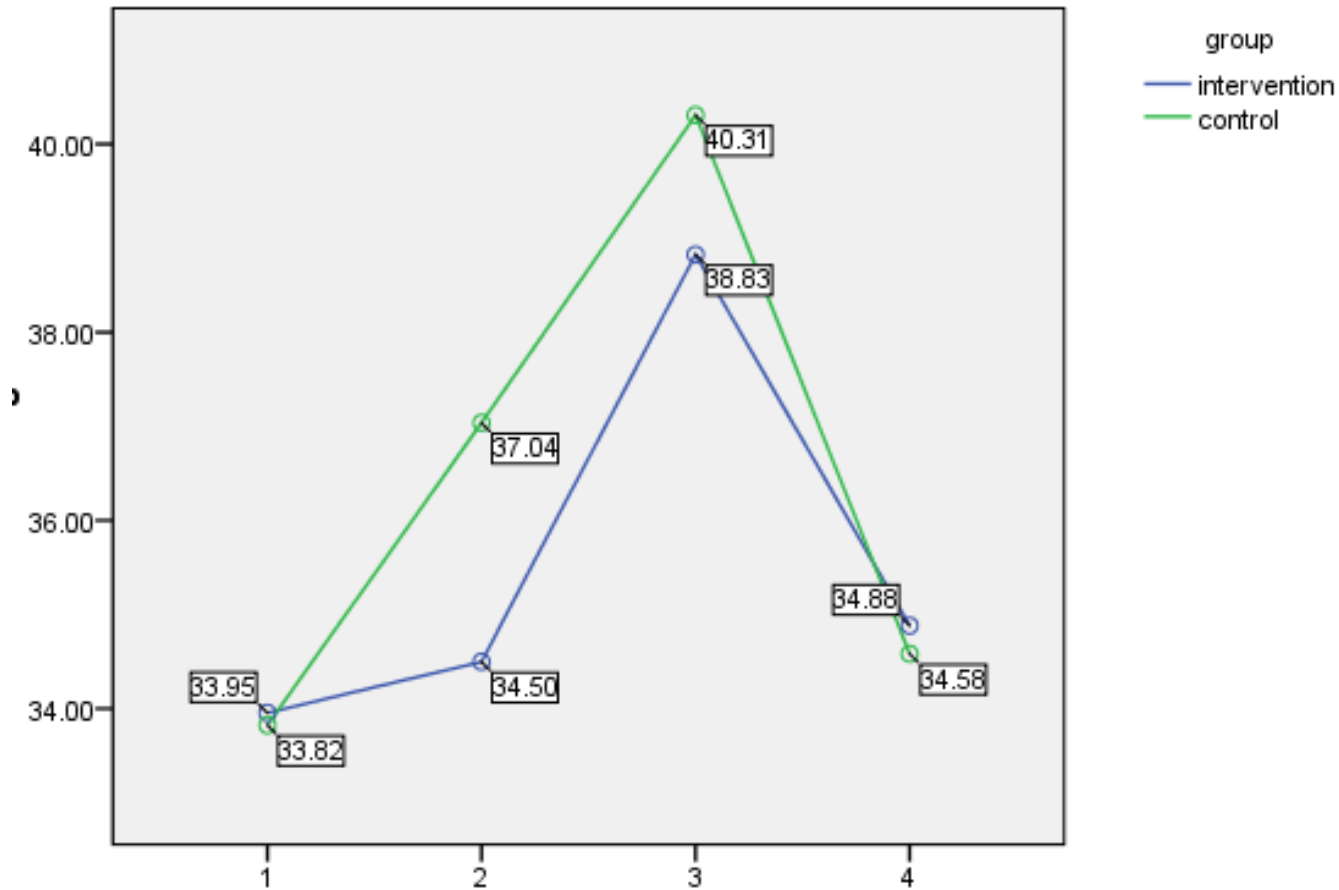


# Energy intake changes over one year follow up in both groups

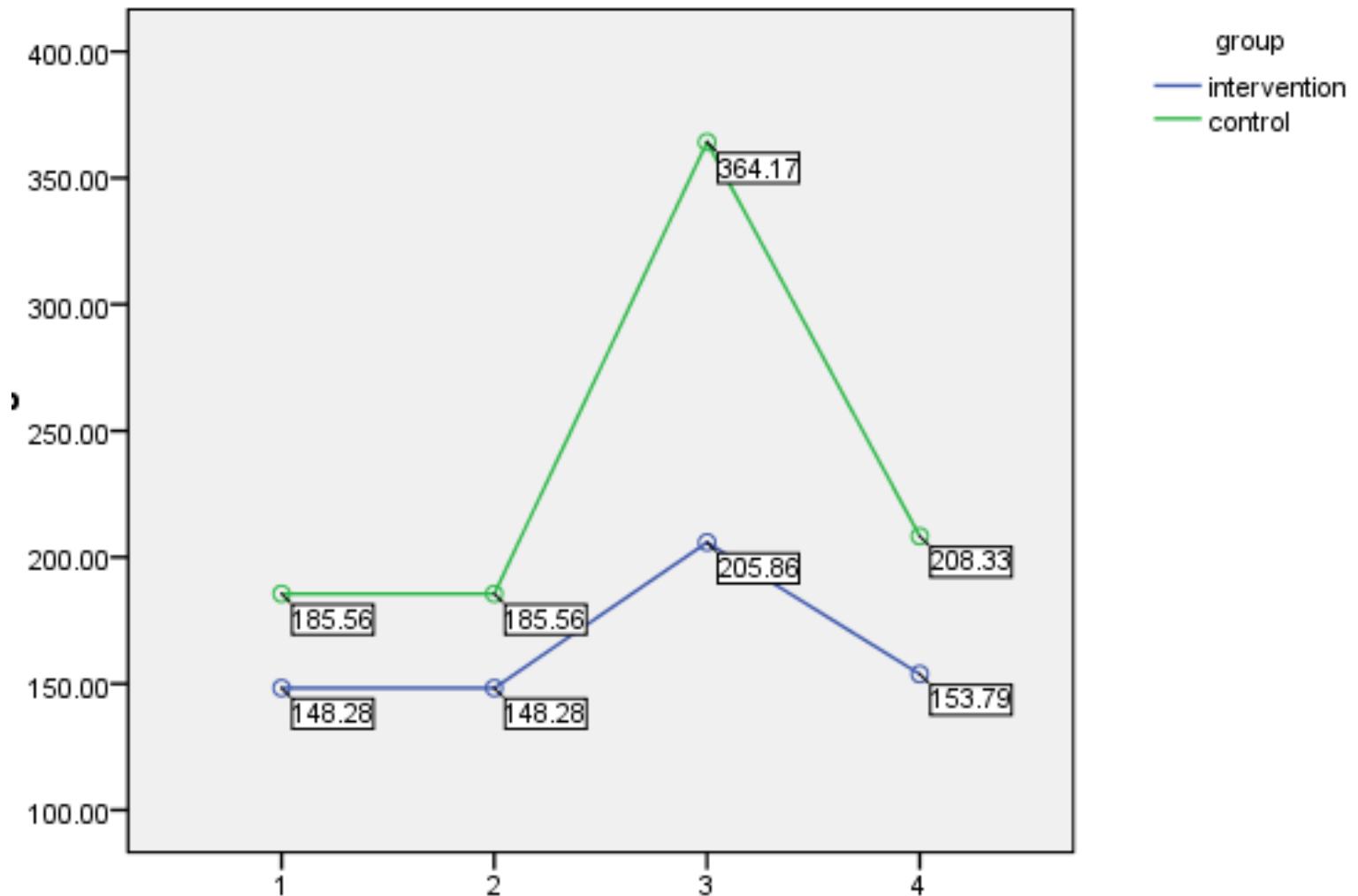









# Physical activity changes over one year follow up in both groups









# Changes in sedentary activities over one year follow up in both groups



Anthropometric var.	Case	Control
BMI	↑	↑
BMI Z score	↓	
Waist circumference	↑	↑

Target Behaviors	Case	Control
Physical activity		
Screen times		
Fast food consumption		
Regular Breakfast		

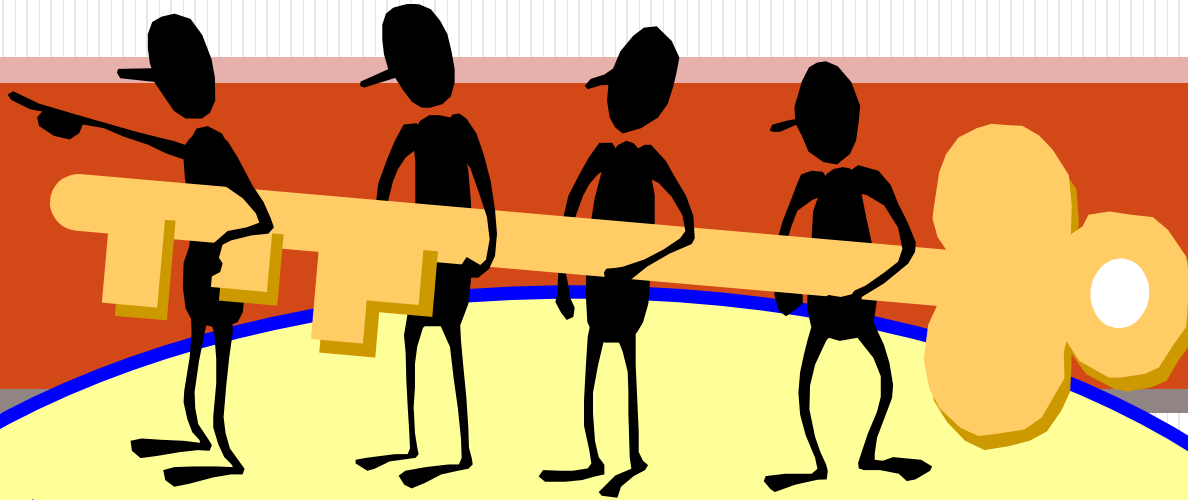
Biochemical Indicators	Case	Control
FBS		
TG		
TChol		
LDL_C		
HDL_C		

# Summary and Recommendations

- Secondary prevention within a primary prevention program for all children is beneficial.
- Involving several sectors, including schools and municipalities is crucial to improve effectiveness of obesity control and prevention.

# Conclusions

## Critical to Future Interventions



- Early & often
- Family involved
- Specific behaviors targeted
- Comprehensive & multi-component
- Community-wide
- Environmental emphasis
- Long-term

با تشکر



Thank you