Hospital Infantil Universitario Niño Jesús — SaludMadrid — Comunidad de Madrid — INSTITUTO DE INVESTIGACIÓN SANITARIA — excelencia UAM CSIC — Campus Internacional — ciberobn Centro de Investigación Biomédica en Red Fisiopatología de la Obesidad y Nutrición

CHARACTERIZATION OF ADHERENCE TO FOLLOW-UP AND THERAPEUTICAL OUTCOMES IN A LARGE COHORT OF 1300 PATIENTS WITH OBESITY VISITED IN A SPECIALIZED TERTIARY CARE CENTER

Martínez-Villanueva J[1], González-Leal R[1], Argente J [1,2,3,4], Martos-Moreno GÁ [1,2,3]

[1]Department of Endocrinology, Hospital Infantil Universitario Niño Jesús, IIS La Princesa, [2]Universidad Autónoma de Madrid, [3]CIBEROBN, Instituto de Salud Carlos III, Madrid, Spain; [4]IMDEA Food Institute. Madrid, Spain.

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Introduction:

- Adherence to follow-up in children and adolescents with obesity is insufficiently characterized, but is a key factor for successful therapeutic outcome in these patients. Limited data on this facet of obesity management are available in the literature.

Objectives:

- To analyze the **adherence** to scheduled visits, the **drop-out** rate and **the anthropometric, metabolic and behavioural** outcomes after therapeutic intervention in a large cohort of children and adolescents with obesity in a specialized tertiary care unit.

Patients and Methods:

- A retrospective, observational study was conducted on **1300 children and adolescents** with obesity (47.2% females; 53.3% prepubertal; 75.8% Caucasian; mean age: 10.46 ± 3.28 years, **BMI: +4.01 ± 1.49 SDS**) undergoing an intervention program based on nutritional counselling, physical activity and behavioral therapy.

- **Drop-out rate** and **time** from start to drop-out, as well as changes in **feeding pattern and physical activity** were recorded.

- Paired comparison of **BMI-SDS, blood glucose, uric acid, lipoprotein, triglyceride levels and HOMA index** from baseline (**B**) to the end of follow-up (**E**) were performed, considering ethnicity, sex and pubertal status.

Results:

- Mean follow-up time was **1.59 ± 1.60** years, with a **high drop-out rate** (11.2% after first evaluation and 32.5% after getting the results of complementary examinations [second visit]) (**Figure 1**).

- Drop-out rate was higher in **male** (X^2:14.70; p<0.05), **prepubertal** (X^2:6.39; p<0.05) and **Latino** patients (X^2:28.94; p<0.001) and highest during the **first 6 months**.

- Among those who abandoned follow-up, **84.1%** showed **no fulfillment of clinical recommendations** in their previous visit, whereas 10.5% had clinical improvement.

- **Unscheduled eating, compulsive eating pace and lack of physical activity significanty decreased** (p<0.001 each) from **B** (prevalence 81.9%, 74.0% and 74.7%, respectively) to **E** (57.2%, 47.3% and 49.8%) (**Figure 2**).

- **BMI-SDS** at **E** was +3.59 ± 1.87 SDS, showing a **decrease** in -0.37 ± 1.25 SDS from **B** (p<0.001), mainly **in the first year**, with a partial recovery in the second year and further stabilization. The decrease in BMI-SDS was greater in **males** and **prepubertals** (p<0.01 and p<0.001 *vs.* females and pubertals, respectively) (**Figure 3**).

- **Metabolic profile** both at **B** and **E** was available in 451 patients:
  - **Impaired glucose tolerance prevalence decreased** from 9.3% at **B** to 3.5% at **E** (p<0.001).
  - **HDL levels increased,** whereas **HOMA index, LDL, uric acid and triglyceride levels decreased** from **B** to **E** (p<0.01 for all).
  - There was a significant **correlation** between the **degree of BMI-SDS reduction and every metabolic change** (p<0.01).

- **Figure 1:** Follow-up characterization.

(X-axis categories: < 6 months (n=1262), 6-12 months (n=898), 1-2 years (n=636), 2-3 years (n=365), 3-4 years (n=207), 4-5 years (n=132), 5-6 years (n=69), 6-7 years (n=27), > 7 years (n=20). Legend: Drop-out, Discharge, Reconsultation, Remain under follow-up)

- **Figure 2:** Behavioural features at baseline (**B**) and at the end of follow-up (**E**).

(B: Unscheduled eating 81.9%, Compulsive eating pace 74.0%, Regular physical activity 74.7%. E: Unscheduled eating 57.2%, Compulsive eating pace 47.3%, Regular physical activity 49.8%. Legend: No, Yes)

- **Figure 3:** Mean BMI-SDS in the cohort throughout the follow-up period.

(X-axis: Baseline (n=1300), 6 months (n=930), 1 year (n=708), 2 years (n=411), 3 years (n=250), 4 years (n=159), 5 years (n=107), 6 years (n=55), 7 years (n=21))

Conclusions:

- Therapeutic outcomes in childhood and adolescent obesity are determined by follow-up adherence; showing a high drop-out rate, particularly in the first 6 months.

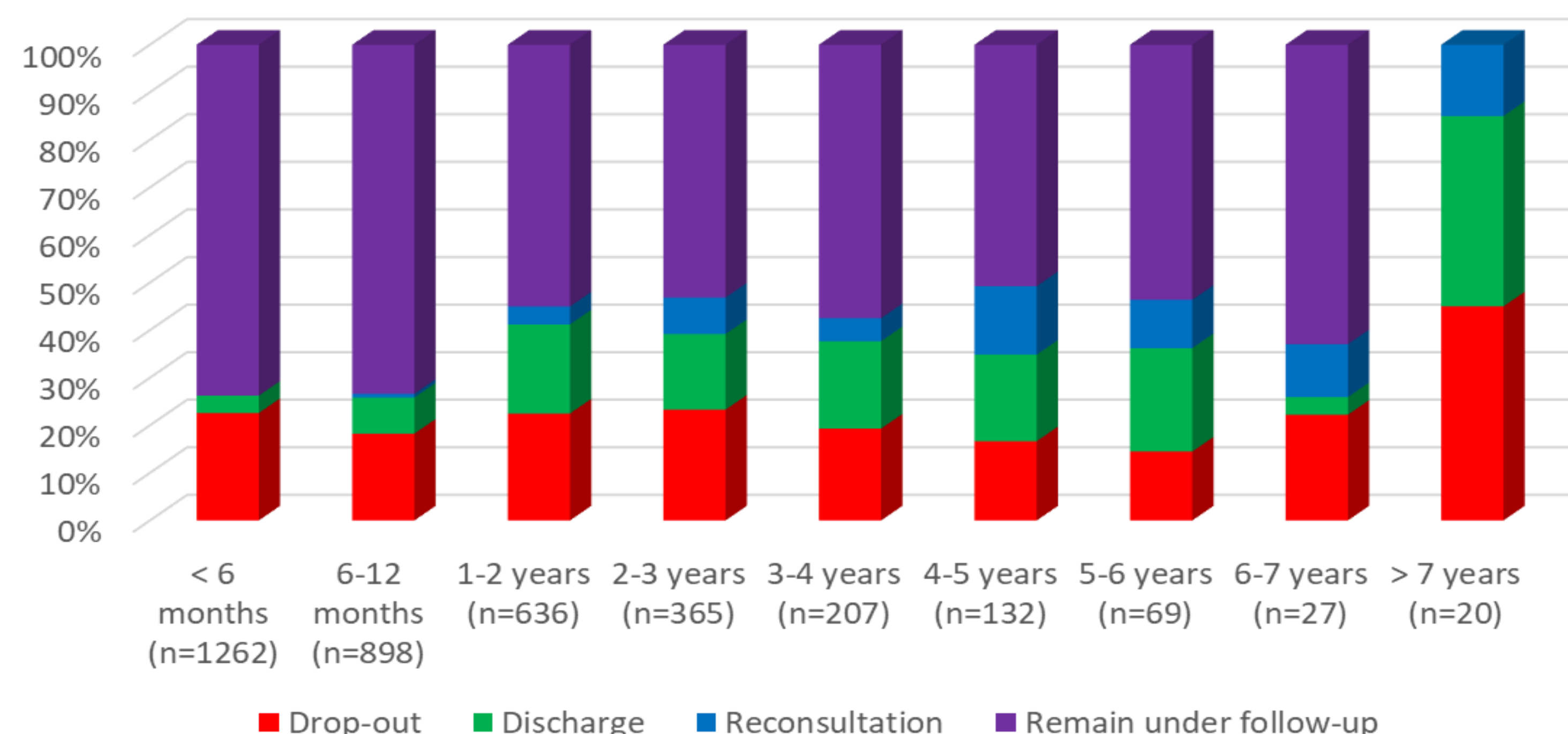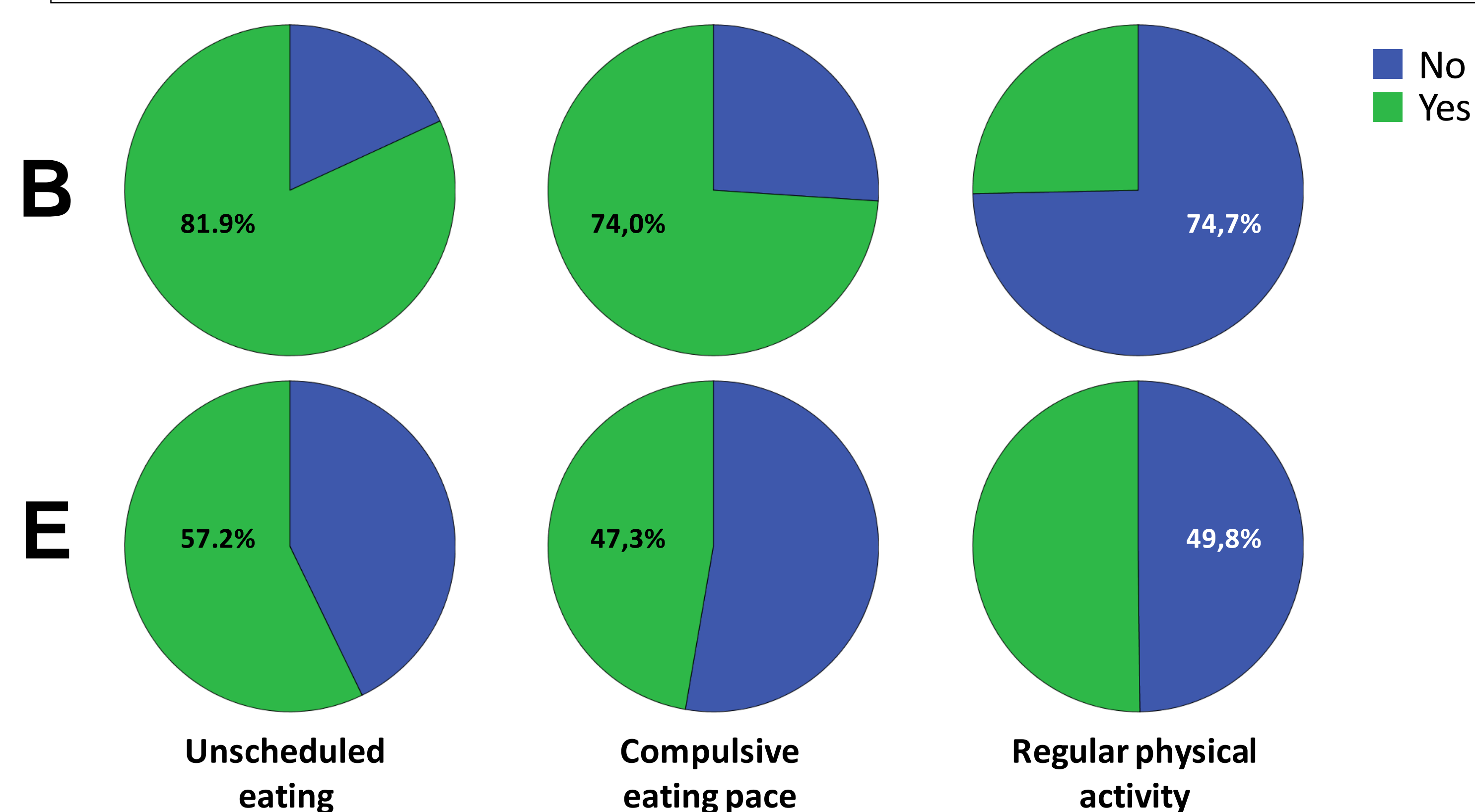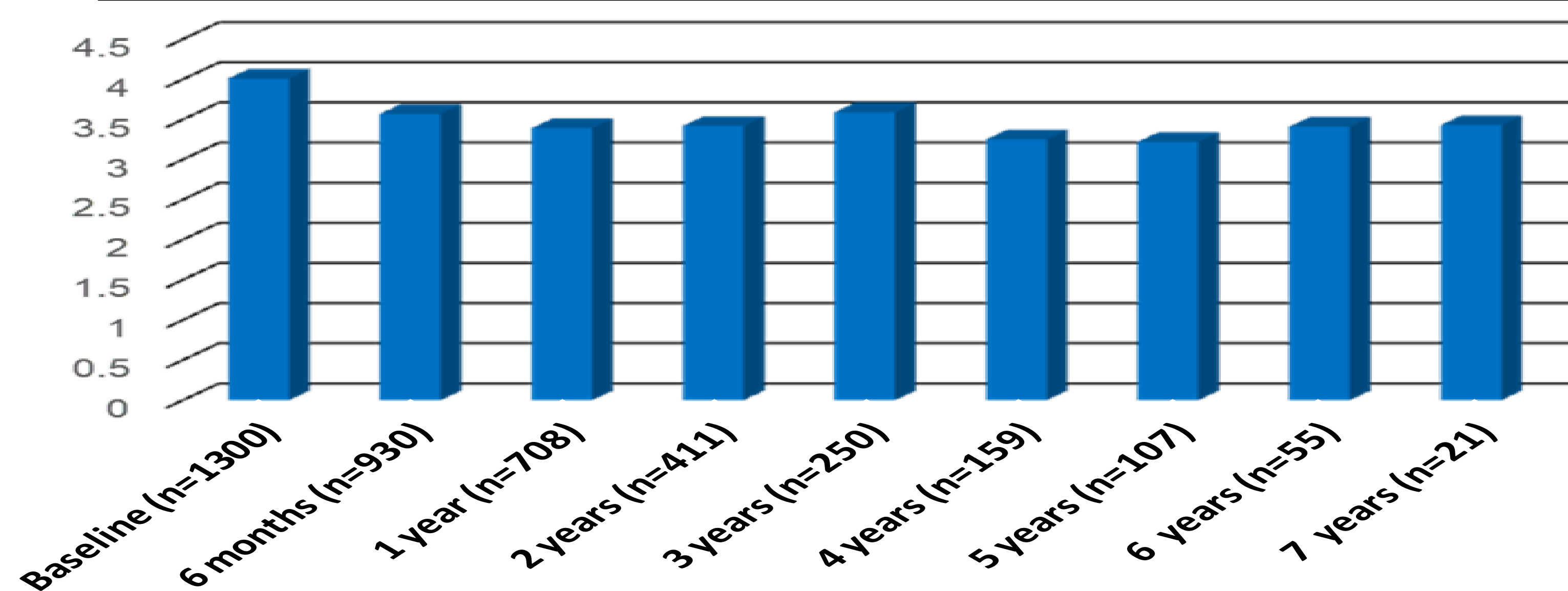- Metabolic and behavioral improvement can be achieved even with limited BMI reduction, but its intensity is related to the degree of weight loss.