

Metabolic parameters, adherence to the Mediterranean Diet and eating habits of obese children

INTRODUCTION

It is crucial to identify effective lifestyle and nutrition intervention strategies to reduce body weight and to improve metabolic health in children with obesity. In the context of analyzing eating behaviours of obese children, the main research issue is to learn about food-related habits and identify ones that may negatively affect their health, including promoting excess body weight. Research involves children aged 10-18 with obesity (type I, II and III). Study is expected to screen 250-300 patients from March 2024 till March 2025.

Study patients complete:

- KIDMED 2.0 PL Questionnaire (examining adaptation to the Mediterranean diet, which is also in the validation process for the study group).
- CEBQ (Children Eating Behaviour Questionnaire) validated for the Polish population, examining children's eating behaviours.

Patients receive Questionnaires at the 1st, 3rd and 6th visits (six months after the 1st visit). Laboratory tests are performed at the 1st and 6th visits. At the 1st, 3rd, 6th visit, patients receive Questionnaires, have anthropometric measurements and body composition analysis performed.

The intervention that patients undergo includes:

- medical consultations,
- physiotherapy consultations: specific exercises to be performed at home prepared by the physiotherapy team.
- dietary consultations: dietary counselling, menu assessment, schematic menus, workshops on healthy lifestyles.

Inclusion criteria:

- Age ≥ 10 yrs. ≤ 18 yrs of age.
- Obesity (BMI ≥ 30 or BMI centile > 97).
- Informed consent from patient and/or guardian.

Excluded participants:

- weight measurement,
- height measurement,
- BMI, BMI centile,
- analysis of body composition (in particular fat and lean body mass),
- fasting glucose,
- fasting insulin,
- lipidogram,
- 25(OH)D,
- AST,
- ALT,
- C-reactive protein,
- GGTP,
- albumin,
- uric acid,
- abdominal ultrasound,
- ECG.

Exclusion criteria:

- Age < 10 yrs. > 18 yrs of age.
- BMI < 30 , or BMI centile < 37 .
- Lack of informed consent from patient and/or guardian.
- Circumstances that prevent effective programme support being a contraindication to inclusion in PLO care:
- Uncompensated mental illness (especially depression)
- Mental handicap (moderate or severe)
- Holistic developmental disorders on the autism spectrum

Exclusion criteria:

- no answers,
- questionnaire partially filled
- not completed a full cycle (6 visits).

Participants

Respondents

Excluded participants

Returned questionnaires

Included questionnaires

Data analysis

AIM

Focusing on the analysis of metabolic parameters, eating behaviours and the adaptation of the diet to Mediterranean eating patterns, the aim of the study is to evaluate the intervention performed as well as to develop a personalized intervention regimen that would favour a healthy lifestyle, weight reduction and improvement of metabolic parameters in children with obesity.

THEORETICAL FOUNDATIONS AND RESEARCH METHODOLOGY

The study is based on the theoretical foundations of nutrition science, public health and health behavior psychology. The research methodology includes analysis of metabolic parameters, observations of eating behavior and dietary adaptation. The use of a personalized approach will enable a more precise understanding of individual needs and preferences, which is an innovative contribution to health intervention research.

The methodology can be adapted to different age groups and populations, expanding the potential areas of application of the study's findings.

WHAT HAVE WE DONE DURING THE 1ST YEAR

In the academic year 2023/2024, I submitted an Individual Research Plan and obtained approval from the Bioethics Committee (separately for the validation of the KIDMED 2.0 PL Questionnaire and for the main study).

I have prepared, consulted and started the validation process of the Polish version of KIDMED Questionnaire, called KIDMED 2.0 PL, that is currently in the process of collecting responses. KIDMED 2.0 PL measures adherence to the Mediterranean diet through 16 items, of which 12 are positive, and 4 are negative. Content validation involved consultation with nutritionists, experts, and adolescents to assess whether the questionnaire is reliable and valid regarding dietary patterns associated with the Mediterranean diet in Polish sample.

In March 2024, after obtaining approval from the Supervisor as well as the Director of the Children's Memorial Health Institute in Warsaw, I started the study on a group of Obesity Treatment Programme (PLO) patients. From March to 30.04.2024, the study group is already 60 children. Duration of the study (collection of Questionnaires and surveys) is planned to be 1 year, starting from March 2024.

What is more, my abstracts have been accepted to Conferences:

- 6th International Scientific Conference: "Human in a changing world. Interdisciplinary reflections" Department of Psychology, Academy of Sciences in Warsaw, 16.03.2024, Oral presentation, entitled. "Evolution of eating habits in a dynamic world - health and social challenges".
- XXIII Congresso de Nutrição e Alimentação 16-17 Maio, Lisboa, 16-17.05.2024r, Poster, entitled. "Eating behaviours, meal timing and food choices of Polish and Portuguese adults".
- 12th European Conference on Health Promotion 17-18 June 2024, 17-18.06.2024, Poster, "Eating behaviours of Polish and Portuguese young adults".
- 12th European Conference on Health Promotion 17-18 June 2024, 17-18.06.2024r, Poster, "Adherence to the Mediterranean Diet among Polish children. Validation of the updated version of KIDMED 2.0 PL Questionnaire".

EXPECTED FINDINGS

Unhealthy eating behaviours of obese patients are particularly alarming and need the implementation of long-term nutrition education in this group, and special attention from the medical community to prevent the continuation of these behaviours and further aggravation of the diseases and its complications.

Nutrition and lifestyle intervention in obese children, has a positive effect on weight reduction, metabolic parameters and eating behaviours, reducing the risk of developing lifestyle diseases and cardiovascular diseases.

The adaptation of the diet of obese children to the Mediterranean diet is low, which, due to its health-promoting nature, may have negative effects on their health.

KEY WORDS: OBESITY; KIDS; KIDMED; MEDITERRANEAN DIET; NUTRITION