ABSTRACT

Introduction: Despite advances in the treatment of obesity, lifestyle intervention remains a key element of therapy. Successful weight loss requires increase in physical activity and modifications of dietary patterns, leading to a negative energy balance. This process requires time, patience, and the expertise of a multidisciplinary team. Nutrition therapist provides patients with obesity individualized dietary recommendations tailored to their health status and current living conditions. Regular nutritional intervention significantly contributes to higher success rates in weight reduction and maintanence of weight loss and dietary and exercise habits.

Objectives: The aim of this study is to demonstrate the positive effects of a comprehensive lifestyle intervention program on body parameters and dietary habits in study population of patients over a three-month period. The effects of this program will be evaluated by comparing the body parameters with a control group of patients from the clinical study, who did not undergo this intervention.

Methodology: Data collection was conducted at the Biomedical Center of the Slovak Academy of Sciences in Bratislava. The research included adult individuals with a BMI above 29 kg/m^2 who underwent a comprehensive lifestyle intervention as a part of clinical study Obesity. Initial data on body composition, energy intake, and dietary composition were obtained. These data were subsequently analyzed after 3 months, during which the patients underwent weekly online nutrition consultations and monthly in-person sessions. During each nutrition consultation, individuals from the research sample underwent non-invasive assessment of body composition using a bioimpedance device. Additionally, data on energy intake and nutrient intake were obtained from self reported 3-day dietary records.

Results: The average weight loss after 3 months of nutritional intervention in the research group of patients was 8.8 ± 4.8 kg. The decrease in body fat tissue averaged 4.3 ± 2.4%, while there was a mild increase in muscle mass by 1.7 ± 1.7%. The overall energy intake in our research sample was around 2353.4 ± 577.8 kcal. The average carbohydrate intake was 256.6 g, protein intake represented 108.0 g, fat intake was 92.3 g and fibre intake was 20.8 g. After 3 months, the average energy intake decreased by 563.4 ± 568.1 kcal to an average of 1790.0 ± 444.8 kcal. The average nutrient values were 192.9 g of carbohydrates, 89.8 g of protein, 68.1 g of fat and 23.0 g of fiber. In the control group, there was an average weight gain of 1.7 ± 1.9 kg after 3 months.

Conclusion: Based on the results of this study, it can be concluded that comprehensive intervention had a significant effect on weight reduction in patients with obesity. The research group showed changes in body composition, with a decrease in body fat tissue and a mild increase in muscle mass. Nutritional intervention under supervision of experienced nutrition therapist should be a fundamental element in obesity treatment.

Keywords: **nutritional intervention, comprehensive lifestyle modification, obesity, body composition**