

Abstract

Introduction to the problem: Bariatric surgery is an effective method in the treatment of obesity, which not only helps to permanently reduce weight, but also brings significant improvement of comorbidities. Adequate preparation, awareness and cooperation of the patient with the nutritional therapist, who individually determines dietary recommendations to prevent nutrient deficiencies and weight regain, play a key role in the successful outcome of the surgery.

Aims of the thesis and research questions: The primary aim of this thesis is to describe the outcome of bariatric surgery after the first two years. Another objective is to evaluate whether an association can be found between nutritional intervention and bariatric surgery outcomes. Subsequently, 4 related research questions were formulated:

1. Does the frequency of nutritional consultation influence weight loss after bariatric surgery?
2. Does the number of days logged in a diet monitoring app correlate with the effect of surgery?
3. Does monitoring physical activity with a smart bracelet affect the overall outcome?
4. Does the presence of diabetes mellitus affect weight reduction after surgery?

Methodology: The main parameters related to body weight development, namely EWL, weight reduction and BMI change, were monitored to achieve the set goals. To assess the compensation of diabetes, the monitored parameter was the glycated haemoglobin level. Furthermore, regression analysis was performed to test correlation and t-tests and ANOVA was performed to test the formulated hypotheses.

Results: Bariatric surgery leads to significant reduction in body weight ($p < 0.001$), BMI ($p < 0.001$) and increase in EWL ($p < 0.001$) with different results according to the type of surgery. Significant weight reduction was achieved in patients after combined surgery ($p = 0.04$). At the same time, there was a statistically significant increase in EWL ($p = 0.049$) in men. The research investigation also suggests a higher weight reduction in patients without a diagnosis of diabetes mellitus. Significant weight loss ($p < 0.001$) can be observed prior to bariatric surgery, potentially enhanced by nutritional intervention and participation in structured weight reduction programs. However, a significant relationship between bariatric outcome and the level of nutritional intervention was not confirmed. Similarly, a significant association between weight change and monitoring of body weight, diet and steps was not demonstrated.

Conclusion: The effectiveness of bariatric surgery was confirmed through a research investigation. Despite the absence of statistical significance in this study, the role of the nutritional therapist in the care of bariatric patients is irreplaceable. The results clearly highlight the importance of prospective monitoring of the impact of nutritional intervention on bariatric outcome and the evolving potential of telemedicine, which needs to be encouraged.

Keywords: bariatric surgery; nutritional intervention; obesity; weight reduction; nutritional therapy