Exploring Factors that Contribute to Weight Regain after Bariatric Surgery

Dimitrios I. Athanasiadis[1], Edward Hernandez[1], Alexandra Roper[2], Taylor Zike[2], Keith Makhecha[3], Vitalis Osuji[2], Dimitrios Stefanidis[1]

Department of Surgery, Indiana University School of Medicine, Indianapolis, IN, USA[1]
Indiana University School of Medicine, Indianapolis, IN, USA[2]
Indiana University Biology and Management, Bloomington, IN, USA[3]

Introduction

Bariatric surgery is the most effective intervention for sustained weight loss of patients with morbid obesity, but weight regain (WR) remains a concern. The underlying factors for WR are not well defined[1]. The aim of our study was to examine risk factors contributing to WR.

Materials & Methods

Factors reported to contribute to weight regain after bariatric surgery were identified based on a systematic literature review[1].
A questionnaire exploring these factors was developed (**Figure 1**) and used to interview **patients in our program more than 4 years after bariatric surgery.**
Participating patient demographics, comorbidities, and weight loss after surgery were recorded.

Patients were divided in two groups based on the amount of weight regained during the follow up period

- those who regained >10% (WR group)
- those who did not have WR or their WR was <10% (control)

The frequency of WR risk factors reported by patients in their interviews was compared between groups using ANOVA, and chi-square analyses.
In accordance with the literature, WR was defined as 100*(last follow up weight - nadir weight)/nadir weight.

Figure 1. Interview Questions

1. How often does your emotional state influence your eating habits?
2. If the patient has regained weight: When did you start regaining weight?
    a. What happened in your life around that time?
    b. Did you start any orexigenic medications?
    c. Any other stressful, significant, or traumatic life events (e.g. new employment, move, childbirth, illness, family tragedy)?
    d. Did this weight regain happen because of a change in eating habits or change in physical activity?
3. Did follow-up appointments help keep you on track with your weight loss goals? How?
    a. Did you start regaining weight after stopping follow-up appointments?
4. Do you find it difficult to choose healthy food?
5. How often do you eat despite not feeling hungry?
6. How many minutes a week do you spend exercising?
7. How motivated were you to adhere to weight loss behaviors in the months following surgery? How has this motivation changed over time?
8. Describe your meals to me.
    a. Is food/mealtime an important social component of your life?

Results

Seventy-eight out of 520 contacted patients (15%) agreed to participate and completed an interview. Interview duration was approximately 20 minutes. 27 of interviewed patients (35%) had >10% WR. Patient baseline characteristics did not differ between the WR and control groups (Table 1). WR started on average at 3 years postop. The WR group was more likely to report a stressful event such as a divorce, death of a family member, or a big change in their work environment around the time their WR started (51.9% vs 27.8%, p=0.038). The WR group also reported less motivation to adhere to weight loss behaviors (44.4% vs 63.8%, p=0.049). WR group patients had more difficulty in choosing healthy foods (41% vs 32%, p=0.451) and were more likely to “eat when not hungry” (p=0.183) but these differences did not reach statistical significance. No other differences in responses were seen between the groups.

Conclusions

Weight regain following bariatric surgery is common and often triggered by a significant stressful life event. Patients who gain more weight are also less motivated to adhere to appropriate weight loss behaviors. Patients after bariatric surgery should be made aware of factors contributing to WR in order to seek assistance when stressful events occur or when their motivation to adhere to weight-loss behaviors starts to lessen.

References

1. Athanasiadis DI, Martin A, Kapsampelis P, Monfared S, Stefanidis D. Factors associated with weight regain post-bariatric surgery: a systematic review. Surg Endosc. 2021 Aug;35(8):4069-4084. doi: 10.1007/s00464-021-08329-w. Epub 2021 Mar 1. PMID: 33650001.