

# INPLASY

## A Systematic Review Exploring Dietary Behaviors, Psychological Determinants, and Lifestyle Factors Associated with Weight Regain After Bariatric Surgery

INPLASY2024100097  
doi: 10.37766/inplasy2024.10.0097  
Received: 23 October 2024  
Published: 23 October 2024

Althumiri, NA; BinDhim, NF; Al-Rayes, SA; Alumran, A.

**Corresponding author:**  
Nora Althumiri

na@idm.sa

**Author Affiliation:**  
Informed Decision Making.

### ADMINISTRATIVE INFORMATION

**Support** - Nothing.

**Review Stage at time of this submission** - Completed but not published.

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY2024100097

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 23 October 2024 and was last updated on 23 October 2024.

### INTRODUCTION

**Review question / Objective** To explore behaviors in terms of diet, psychological, and lifestyle factors associated with weight regain after bariatric surgery.

**Rationale** This study was conducted to address the issue of weight regain following bariatric surgery, which undermines long-term weight management and overall health outcomes. Bariatric surgery is an effective intervention for obesity, but many patients experience weight regain, which can negate the benefits of surgery. While previous studies have largely focused on clinical and surgical factors, this review aims to explore the behavioral factors, such as diet, psychological health, and lifestyle, that contribute to weight regain. The study aims to explore behavioral, psychological, and lifestyle factors associated with weight regain after bariatric surgery, an issue that challenges long-term weight management and health outcomes. The condition

of interest is weight regain after bariatric surgery, a significant problem where patients regain weight after an initial loss, potentially reversing the health benefits of surgery. Various factors, particularly behavioral, remain underexplored in comparison to surgical or physiological factors. Weight regain after bariatric surgery poses a significant challenge to long-term weight management and overall health outcomes. Many systematic reviews have predominantly focused on clinical and surgical reasons and interventions related to bariatric surgery outcomes. However, there is a notable lack of systematic reviews exploring the behavioral factors contributing to weight regain, highlighting a gap in understanding the role of behavior in long-term weight management.

**Condition being studied** Weight regain after bariatric surgery is the condition of interest. Bariatric surgery, including procedures such as gastric bypass and sleeve gastrectomy, is designed to promote significant weight loss by restricting food intake and/or reducing nutrient

absorption. Despite initial success, many patients regain weight, which can lead to a return of obesity-related health issues and reduced quality of life. Bariatric surgery is an effective intervention for severe obesity, with procedures such as gastric bypass and sleeve gastrectomy being the most common. These surgeries often lead to significant weight loss, but many patients experience weight regain due to factors like poor diet adherence, psychological issues, and sedentary lifestyle.

## METHODS

**Search strategy** The review used a combination of terms related to bariatric surgery, behavior, and weight regain. Five major databases were searched: MEDLINE via PubMed, Embase, Web of Science, Scopus, and Google Scholar. The search focused on studies published within the past 10 years. The review used a combination of terms related to bariatric surgery, behavior, and weight regain. Five major databases were searched: MEDLINE via PubMed, Embase, Web of Science, Scopus, and Google Scholar. The search focused on studies published within the past 10 years. The review included terms such as "Bariatric surgery," "Behavior," and "Weight regain". The electronic databases searched were MEDLINE via PubMed, Embase, Web of Science, Scopus, and Google Scholar. The last search was conducted on July 10th, 2024. MEDLINE via PubMed, Embase, Web of Science, Scopus, and Google Scholar.

**Participant or population** The review focused on adults aged 18 and older who had undergone bariatric surgery and subsequently experienced weight regain. These participants had different types of bariatric procedures, such as gastric bypass and sleeve gastrectomy, but the focus was on those whose weight regain was linked to behavioral factors.

**Intervention** No intervention was required.

**Comparator** No intervention was required.

**Study designs to be included** The review included observational studies, specifically cross-sectional studies, cohort studies, and in-depth interview studies. It excluded systematic reviews, case reports, and clinical trials, as well as studies focused on non-behavioral factors. We included only observational studies, such as cross-sectional studies, randomized controlled trials, cohort studies, and in-depth interviews. The search was exclusively focused on weight regain after bariatric surgery and was related only to behavioral factors.

We excluded systematic reviews, experiential studies, case series, case reports, clinic.

**Eligibility criteria** Additional exclusion criteria included studies involving pregnant women, children, and adolescents, as well as studies focusing on pharmacological treatments or non-behavioral interventions. Only studies that examined behavioral factors associated with weight regain were included.

**Information sources** The review relied on electronic databases and manual searches of reference lists from relevant studies. No contact with authors or use of trial registries was mentioned. The review utilized information from electronic databases (PubMed, Embase, Web of Science, Scopus, Google Scholar), and manual searches of reference lists of included studies. Additional exclusion criteria not covered in the PICOS sections included excluding studies focused on children, adolescents, pregnant women, or pharmacological therapies post-surgery.

**Main outcome(s)** The primary outcomes of the review were the identification of behavioral factors contributing to weight regain, which were grouped into three categories: dietary non-adherence, psychological determinants, and lifestyle behaviors. The timing of outcomes varied based on the follow-up periods of the included studies.

**Data management** Data were managed using the PRISMA flowchart method. The search yielded a large number of articles, and duplicates were removed. The remaining articles were screened based on their titles, abstracts, and full texts, leading to the inclusion of 16 studies. Data were extracted into tables summarizing study design, population, outcomes, and results.

**Quality assessment / Risk of bias analysis** The quality of the included studies was assessed using a critical appraisal tool. Studies were classified as having a low, moderate, or high risk of bias, with most falling into the moderate category.

**Strategy of data synthesis** Data analysis involved categorizing the behavioral factors linked to weight regain into themes: dietary non-adherence, psychological determinants, and lifestyle behaviors. A thematic synthesis approach was used to analyze and summarize the findings.

**Subgroup analysis** Subgroup analyses were conducted to explore differences in weight regain based on the type of behavioral factors, such as

---

diet, psychological health, and lifestyle behaviors. This helped to identify which behaviors were more strongly associated with weight regain.

**Sensitivity analysis** Although a formal sensitivity analysis was not conducted, the exclusion of non-behavioral studies served as a way to ensure the review's focus on behavioral factors.

**Language restriction** The review included only studies published in English.

**Country(ies) involved** The study was conducted by researchers based in Saudi Arabia, with affiliations to research organizations and universities in the country.

**Keywords** Behavioral Changes; Psychological Factors; Weight Regain; Bariatric Surgery; Systematic Review.

**Contributions of each author**

Author 1 - Nora A. Althumiri.

Email: na@idm.sa

Author 2 - Nasser F. BinDhim.

Email: nd@idm.sa

Author 3 - Saja A. Al-Rayes.

Author 4 - Arwa Alumran.