

Optimizing weight loss outcomes in bariatric surgery

Citation for published version (APA):

Romeijn, M. M. (2022). *Optimizing weight loss outcomes in bariatric surgery*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20221007mr>

Document status and date:

Published: 01/01/2022

DOI:

[10.26481/dis.20221007mr](https://doi.org/10.26481/dis.20221007mr)

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
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CHAPTER 12

Reflection on the scientific impact

Scientific impact

Bariatric surgery has emerged as the most successful treatment for patients suffering from morbid obesity and its associated comorbidities. Despite the frequent success of bariatric surgery, 20-30% of patients do not respond well as these patients may experience insufficient weight loss or may regain an excessive amount of weight after sufficient weight loss. This condition can be described as non-response. This thesis contributes to a deeper understanding of non-response.

In the first part of this thesis, patients at risk of developing non-response are identified. A cluster of male gender, preoperative hypertension and unemployment was found (**chapter 3, 4, 5, 8**). In the second part of this thesis, the most frequently proposed intervention of non-response is described. According to a multidisciplinary team, this intervention consisted of a non-surgical approach (**chapter 6**). When focusing on a surgical approach, the usage of primary banded gastric bypass reduced the rate of non-response (**chapter 8**). In the third part, this thesis identified commonly used preoperative weight loss regimes i.e., (very) low-caloric diets and explored how they contribute to a loss in fat-free mass (**chapter 9, 10**). As fat-free mass influences metabolic processes and subsequently weight loss outcomes, this thesis encourages other researchers to focus on these aspects.

Social relevance

Non-response affects a large group of patients and, as a result, many healthcare professionals encounter patients with this problem. Importantly, the number of patients suffering from non-response is expected to rise due to an increasing number of patients undergoing bariatric surgery worldwide [1]. Therefore, there is an urgent need for preventive care, early detection and long-term treatment of non-response. This thesis contributes to this need in various ways. Reports were provided in scientific journals and on (inter)national congresses thereby targeting health care professionals. Moreover, reports were translated in such a way that it is understandable for patients. As an example, the reports of **chapter 4 and 9** were shared via the patient platform 'Bariatric Groep Nederland' and in our local hospital.

Aside from the large patient population, non-response has multiple negative social consequences. It could impair a patients' quality of life, lead to feelings of worthless, guilt, shame and social isolation [2]. Patients may consequently deprive themselves from getting professional support. Awareness of non-response is facilitated by this thesis which is essential for lowering the wide range of potential negative social consequences.

Economic relevance

Non-response strongly increases healthcare costs because it could lead to recurrence of obesity-related comorbidities and necessitates further treatment. One of the treatment options includes revisional surgery. It is important to note that the safety profile of revisional surgery differs from primary surgery due to a higher complication rate. This may lead to extreme health care costs [3,4]. Against this background, a non-surgical treatment of non-response is appealing. In this thesis the effect of two non-surgical treatments are described demonstrating a limited effect on weight loss (multidisciplinary approach in **chapter 6**; protein supplementation in **chapter 7**).

An example of how this thesis directly influences healthcare costs can be found in chapter 5. When focusing on the incidence of bleedings in primary surgery, the linear stapling technique should be preferred rather than the circular stapling technique. A shift towards using the linear stapling technique could greatly affect daily surgical expenses which are estimated at €938 per procedure.

Target population

The results of this thesis carry relevance for patients, as well as for healthcare professionals that are involved in the field of bariatric surgery. The latter includes clinicians, dieticians, psychologists, physical therapists, general physicians and occupational health physicians. By educating healthcare professionals on non-response, patient counseling could be improved. In order to educate healthcare professionals, an overview of non-response was published via the Dutch Journal of Medicine ('Nederlands Tijdschrift voor Geneeskunde') [5].

References

1. Welbourn R, Hollyman M, Kinsman R, et al. Bariatric Surgery Worldwide: Baseline Demographic Description and One-Year Outcomes from the Fourth IFSO Global Registry Report 2018. *Obes Surg.* 2019;29(3):782-795.
2. Tolvanen L, Svensson Å, Hemmingsson E, Christenson A, Lagerros YT. Perceived and Preferred Social Support in Patients Experiencing Weight Regain After Bariatric Surgery-a Qualitative Study. *Obes Surg.* 2021;31(3):1256-1264.
3. Sheppard CE, Lester EL, Chuck AW, Birch DW, Karmali S, de Gara CJ. The economic impact of weight regain. *Gastroenterol Res Pract.* 2013;379564.
4. Kuzminov A, Palmer AJ, Wilkinson S, Khatsiev B, Venn AJ. Re-operations after Secondary Bariatric Surgery: a Systematic Review. *Obes Surg.* 2016;26(9):2237-2247.
5. Romeijn MM, Uittenbogaart M, Janssen L, van Dielen FMH, Leclercq WKG. Gewichtstoename na bariatrische chirurgie [Weight gain after bariatric surgery]. *Ned Tijdschr Geneesk.* 2020;164:D5339.