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LETTER TO THE EDITOR

Measuring and Defining Response and No-Response After Bariatric Surgery

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Dear Editor,

I read the systematic review by Bonouvrie et al. [1] published recently in *Obesity Surgery* with significant interest and would seek your permission to highlight some of its important aspects. The desire amongst bariatric surgeons to identify patients who do well, as well as those who do not, and use these as measures of comparison for individual procedures and surgeons, goes almost as far back as our discipline itself [2]. The words "success" and "failure" and the more recent terminologies "responders" and "non-responders" are ubiquitous in bariatric literature. And just like these authors, in a recent survey of surgeons on practices concerning revisional bariatric surgery, we found that surgeons use a number of arbitrary criteria to define responders, primary non-responders, and secondary non-responders [3].

The need to measure outcomes lies at the heart of academic surgery. In most acute diseases, cholecystitis or appendicitis, for example, it is sufficient to concentrate on morbidity and mortality as there are few long-term issues. But the task becomes much more challenging when you are dealing with surgery for a chronic disease with potentially a vast number of outcome measures [4].

Given that weight loss lies at the heart of bariatric surgery, several methods of measuring weight loss have been proposed and are being used. Measures like absolute weight loss, percentage excess weight/body mass index (BMI) loss (using BMI 25 kg/m^2 as normal), percentage total weight/BMI Loss are all in common usage and journals often rightly insist that authors report on all of them as each has its own unique strength and none is perfect.

When comparing weight loss outcomes, one is faced with a common challenge that means or median may not reflect the true picture. There are recognised weaknesses of any method of measuring the central tendency. This might be why authors feel it important to separately identify the number of patients with weight loss above a certain threshold. But this is perhaps unnecessary as standard deviation (SD) and interquartile range (IQR) are meant to provide precisely the same information. By using these more regularly in the scientific literature, we might be able to get rid of the terminologies like success (or responders) and failure (or primary non-responders).

Measuring the so-called "weight regain" (or secondary non-responders) is even more challenging [5]. However, it is difficult to understand why we need to separately measure this as the same information can easily be gleaned from determining mean/medians with SD/IQR at longer-term follow-up. Measuring weight regain is not helpful even in determining the need for revisional surgery because that decision is very individual and depends on a number of factors [3].

I would therefore suggest that we completely get rid of the terminologies like success, failure, responders, and non-responders in reporting outcomes with bariatric surgery and instead focus on reporting means/medians of weight loss outcomes with SD/IQR at 1 year for short-term weight loss outcomes, 5 years for medium term, 10 years for long-term, and so on [6].

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Statement on Human and Animal Rights This article does not contain any studies with human participants or animals performed by any of the authors.

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Informed Consent Not Applicable.

Ethical Approval Not Applicable.

Abbreviations *BMI,* body mass index; *SD,* standard deviation; *IQR,* interquartile range

References

1. Bonouvrie DS, Uittenbogaart M, Luijten AAPM, et al. Lack of standard definitions of primary and secondary (non) responders after primary gastric bypass and gastric sleeve: a systematic review. Obes Surg. 2018. https://doi.org/10.1007/s11695-018-3610-4. Review
2. Reinhold RB. Critical analysis of long-term weight loss following gastric bypass. Surg Gynecol Obstet. 1982;155(3):385–94.
3. Mahawar KK, Nimeri A, Adamo M, et al. Practices concerning revisional bariatric surgery: a survey of 460 surgeons. Obes Surg. 2018;28(9):2650–60.
4. Hopkins J, Howes N, Chalmers K, et al. What are important outcomes of bariatric surgery? An in-depth analysis to inform the development of a core outcome set and a comparison between the views of surgeons and other health professionals (the BARIACT study). Lancet. 2015;385(Suppl 1):S43.
5. Lauti M, Kularatna M, Hill AG, et al. Weight regain following sleeve gastrectomy-a systematic review. Obes Surg. 2016;26(6):1326–34.
6. Mahawar KK. Defining short-term, medium-term, long-term, and very long-term follow-up after bariatric surgery. Obes Surg. 2018;28(5):1425–6.