Author's response to reviews

Title: Body shape expectations and self-ideal body shape discrepancy in women seeking bariatric surgery: A cross-sectional study

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Author's response to reviews: see over
Dear Editors and Reviewers for BMC Obesity,

We would like to thank the reviewers for their suggestions for this study. We feel that the paper has been much improved in response to their comments. Please see the response to each reviewer comment below:

**Reviewer 1**

1. While the authors present a long bibliography, they missed numerous recent papers and reviews of this literature. Heinberg et al as well as Sarwer and colleagues have written extensively on these issues. A more comprehensive review of their work, prior to the onset of the study, likely would have led to a different methodological approach.

**Response:** We thank the reviewer for his comment. We are aware of the research published by Sarwer and Heinberg (it has been integrated into an MSc thesis on this topic), but due to space constraints the focus of the literature for the current paper was limited to studies on bariatric surgery and body image. We have incorporated the literature suggested by this reviewer (e.g., papers by Heinberg, Sarwer).

Additional References


Sarwer DB, Wadden TA, Moore RH, Eisenberg MH, Raper SE, Williams NN: **Changes in quality of life and body image after gastric bypass surgery.** *Surg Obes Relat Dis* 2010, **6:**608-


2. The sample size is relatively small. The cross sectional nature of the study is a limitation.

**Response:** We acknowledge the small sample size and the cross sectional study design are limitations. These points have been highlighted as limitations in the Discussion section.

3. The figure stimuli have a number of limitations related to their appropriateness for those with extreme obesity as well as issues of ethnicity. There are several other measures that would have been more appropriate.

**Response:** We agree that the figure stimuli have limitations and this was addressed on page 6, lines 161-163 (reference 55). Although other measures exist as highlighted in the article by Sarwer, Thompson and Cash, 2005 (reference 15) we chose the SFRS, one of the measures identified by the authors, as it has been psychometrically validated and used to study many aspects of figure selection in a variety of populations.

Researchers have employed this visual scale to analyze ideal body size, current body size, body image dissatisfaction, and many other aspects of figure selection such as attractiveness to the opposite sex. The SFRS has been used to evaluate body size perception in patients with Type 2 Diabetes (Bays, Bazata, Fox, Grandy, & Gavin, 2009), perception of body size in parents and their children with Prader-Willi syndrome (Napolitano, Zarcone, Nielsen, Wang, & Caliendo, 2009), the relation of body size to lifetime risk of developing multiple sclerosis in women (Munger, Chitnis, & Ascherio, 2009), correlates of obesity and body image in Colombian women (Gilbert-Diamond, Baylin, Mora-Plazas, & Villamor, 2009), racial differences in body image and body satisfaction in overweight postpartum mothers (Carter-Edwards et al., 2010), the body image dissatisfaction of urban Ghanaian women (Benkeser, Birtwum, & Hill, 2012), sex differences in desired body shape (Fallon & Rozin, 1985), and body image dissatisfaction in obese outpatients seeking weight loss therapy (Sorbara & Geliebter, 2002) to name a few.

Regarding ethnicity, the population of Newfoundland and Labrador is Caucasian (>95%), therefore ethnicity was not concern when we designed this study.
4. Standard deviations should be presented with the means.

Response: Agree. Standard deviations are now presented with all reported means.

Reviewer 2

Major Comments:
1. Page 4, line 118 – Given that the authors point out that younger, Caucasian women might be prone to the most unrealistic weight loss expectations, were there efforts to recruit these participants? Or to analyze subsets of the sample to see if this held up with your participants?

Response: There was no specific effort made to recruit younger, Caucasian women for this study as this was a convenience sample of referred patients to an educational session on bariatric surgery. The aim of this research was to determine the body shape expectations of all women who attended the session and agreed to participate in the study. The age of women in this study (43.4 ± 8.9 years) was comparable to the mean age of all patients receiving publically funded bariatric surgery across Canada (43.6 ± 11.1 years) (Padwal et al., 2012). This may improve the generalizability of the findings in this study, which focuses on an area of obesity research that has not yet been addressed in Canada. The sub-set of younger, Caucasian participants was not analyzed because the sample size was determined to be too small to support statistical analyses.

Reference

2. Page 6, line 165 – It is somewhat concerning to me that “goal body shape” and “ideal body shape” were assumed to be equivalent. I would caution the authors to provide more rationale here. In many cases, the “goal body shape/weight” is determined by the nurse practitioner or surgeon based on expected weight loss and health/overweight BMI range, whereas “ideal” tends to be more patient-driven and may not always reflect realistic weight loss. Can the authors provide more detail here on why the two constructs were thought to be equivalent?

Response: This study combined two reliable and valid survey instruments, the Silhouette Figure Rating Scale (SFRS) and the Goals and Relative Weights Questionnaire (GRWQ) with the aim of integrating the two to represent and quantify women’s post-surgery body shape expectations before undergoing bariatric surgery. This took place during a pre-surgical education session. The SFRS uses the term “ideal” when asking respondents about silhouette expectations, whereas the GRWQ uses the terms “goal”, “dream”, “happy”, “acceptable”, and “disappointed”.

During data analysis, an effort was made to determine which of the GRWQ expectation definitions were most comparable to the SFRS “ideal” silhouette expectations reported in the literature. In the current study “goal” body shape (mean 4.3±0.8) was comparable to the “ideal” body shape (mean 4.13±0.74) of Munoz et al., 2010.

In the context of our study, a “goal” body shape was a personal goal chosen by each
woman before attending pre-surgical education session prior to consultation with the multidisciplinary bariatric clinic and before any discussion about what was a realistic goal weight post-surgery.

3. Also, how does “goal” or “ideal” body shape differ from the “dream” or “happy” body shape that participants selected? Some further detail here would be important in understanding some of the nuance here.

**Response:** (See response above in #2). To further clarify these terms, a definition of the goal expectation question was added to the paper to explain this difference (page 7, line 167-170). Wording of the Methods section was improved to clarify how the expectation category definitions were used by study participants to indicate body shape expectations (page 6, line 152-155 and page 7, line 165-166).

4. Page 8, line 239 – Was the difference between evidence-based 1-year weight loss outcomes from LSG and women’s postoperative goal body shape statistically significant? If so, this would help bolster the importance of the authors’ findings.

**Response:** This finding is observational in nature. Statistical comparisons were limited by the type of data available. However, the range of BMI values associated with evidence-based weight loss outcomes post LSG (26.8-39.9 kg/m²) does not overlap with the range of BMI values (23.1-26.2 kg/m²) calculated from patients “goal” body shape choice suggesting that they are mutually exclusive and different (page 10, line 247-250).

**Minor Essential Revisions:**
1. Page 3, paragraphs 1 and 2 - I would consider deleting these paragraphs as they have little to do with the subject matter of the study itself. The discussion of psychosocial pressures etc. is not addressed in the study so is therefore irrelevant.

**Response:** Agree. The first two paragraphs have been restructured.

2. Page 4, lines 105-127 – I would suggest that the authors find a way of combining and/or editing these paragraphs for better flow. Right now they read as somewhat choppy and disjointed but some small editing changes could significantly improve readability.

**Response:** Agree. These paragraphs have been restructured to flow better.

3. Page 4, line 121 – It’s curious to me that the authors mention these constructs as potential outcomes but they are not measured in the study. The authors should provide a very careful rationale as to why these were not included and/or should strike this section from the Introduction (and perhaps move it to the Discussion).
**Response:** Agree. We have moved this section from the introduction to the discussion as suggested.

4. Page 5, line 159 – I would suggest striking this last sentence of the paragraph. I’m having a hard time seeing how this is relevant here and it might also suggest that the authors should have used alternative silhouette scales.

**Response:** Agree. Deleted as suggested.

5. Page 7, line 217 – I would consider deleting this information as it seems irrelevant to the study. Comorbidities are not discussed in detail or interpreted in a way that might be relevant to body shape expectation.

**Response:** Agree. Reference to comorbidities has been deleted.

6. I would encourage the authors to refocus their discussion section to read less as a statement of the relevant findings and more as an in-depth interpretation of the results. What might the results tell the reader clinically? Scientifically? How might results like this impact evaluations? Postsurgical care? Etc.

**Response:** The flow of the Discussion section has been improved to provide a more in-depth interpretation of the results and how they are applicable to clinical and scientific settings.

7. Page 9, line 265 – It seems confusing to reference the Munoz et al. study when it was longitudinal and this one was cross-sectional. It might be better to simply state that the self-ideal body shape discrepancies found in this sample were similar to those reported by Munoz and colleagues.

**Response:** Agree. This change was made in the paper (page 11, line 271-272).

8. Page 9, line 277 – I think the authors should exercise caution here in interpreting the meaning of women’s underestimation of current body size. It seems a big jump to go from underestimating one’s size to being unaware of health risks associated with an increased BMI.

**Response:** It has been suggested by reference 55, that by underestimating current body size, women may not be aware of the increased health risk associated with their current BMI classification and therefore it may be possible to underestimate your own health risk.
Reviewer 3

1. P. 3 line 78 change "The psychosocial pressures of prejudice..." to "The psychosocial pressures resulting from prejudice...".

Response: This section has been removed at the recommendation of Reviewer 2.

2. This paper is about weight bias and part of reducing weight bias is in the language researchers use in their reports. Many journals require the use of "person-first" language that is non-stigmatizing and puts the person first and the health condition second. Therefore it is recommended that any statements that include the phrase "obese persons" or "obese individuals" or "obese patients" be changed to "persons with obesity" or "Individuals with obesity" or "patients with obesity". This also reinforces that obesity is a health condition and not a personal descriptor.

Response: Thank you for pointing this out. We agree with the use of this language and efforts have been made to de-stigmatize the language used throughout the text in the manner suggested.

3. P.3 line 92. The authors make the following statement "...however many other psychosocial, health and quality of life benefits are observed postoperatively". Please provide examples of specific benefits. Eg. Such benefits include.....

Response: Examples have been provided (page 3, line 82-86).

4. The second last paragraph of the introduction/background section (p. 4), specifically the content from line 121-124 does not provide a strong rationale for the study. It leaves the reader wondering why the study was conducted. I have no doubt there is a stronger rationale however it needs to be articulated more clearly for those not familiar with this topic and the need to explore further.

Response: Agree. Information on the rationale for conducting the study has been added to the Introduction section (page 4-5, line 112-120): “Evidence suggests that unmet expectations may negatively impact postoperative outcomes such as treatment satisfaction, weight loss, mood, and behavior maintenance [33, 34, 37, 45, 46], or motivate patients to pursue weight maintenance behaviors [30, 45, 47-50]. In the latter case, these negative states may contribute to weight regain after bariatric surgery, which would negate the long-term health risk reduction used to justify the surgical risk and expense associated with this procedure. An understanding of the goals and expectations of surgical candidates is therefore of critical importance to patient care and treatment outcomes, and should be included in the discussion of surgical risks and benefits.”
5. P.4 line 131. The methods section starts off by letting the reader know that female candidates were recruited. No rationale provided in the background or methods as to why the study was limited to females. Please provide a rationale for only including females.

Response: A sentence has been added to the Methods section to rationalize the exclusion of males from this study (page 5, line 131-132). “There was an insufficient sample size to support meaningful conclusions about males in this sample population (n=7).”

6. P. 5 line 150-151. Last sentence in this section is better placed as a sentence prior to line 184 on P. 6.

Response: Agree. This change was made.

7. Last sentence on P5 lines 159-161. Not sure if this sentence is needed. Does not appear relevant.

Response: Already removed based on other reviewer feedback.

8. P5 line 162. Please provide a rationale as to why the SFRS was used with the GRWQ.

Response: Perceived weight and body shape are related; however these constructs have previously been explored separately in the literature. The aim of the current study was to measure the different levels of body shape expectation and self-ideal body shape discrepancy. A review of the literature did not yield any existing tool that measured these constructs together. Therefore definitions from one of the most widely used weight loss expectation rating scales (GRWQ) and silhouettes from one of the most widely used silhouette rating scales (SFRS) were combined to fill this knowledge gap.

This was clarified in the Methods section (page 6, line 142-147) through the addition of the sentences: “This study evaluated different levels of body shape expectation and self-ideal body shape discrepancy using a combination of two reliable and valid instruments as a review of the literature did not yield any existing tool that could measure these constructs. Therefore, the ‘Goals and Relative Weights Questionnaire’ (GRWQ) [34] and the validated Silhouette Figure Rating Scale’ (SFRS) [51] were used to achieve this aim.”

9. P. 6 lines 175-177. Has the equation used for %EWL used in this study been used in other studies. If so, please state or clarify why this equation was used.

Response: %EWL has been used in numerous studies to describe the amount of weight lost after bariatric surgery. The equation was used in the current study so that results could be comparable to other published literature that reports %EWL (reference 56). The authors are cognizant that other methods are used to examine weight loss (e.g., change in BMI, absolute measures, % of initial body weight loss).
10. P.6 lines 190-192. Last sentence in this section seems out of place. It may be better placed in the results section.

Response: Agree. This sentence was removed.

11. P. 7 Results section. It occurred to me while reading the results that there are a number of health conditions that could influence body image. This is not discussed at any point in this paper. Was information about co-existing health conditions (comorbidities) such as musculoskeletal disorders, trauma's, skin disorders etc (conditions that can alter body image and body satisfaction) collected. If not, how did researchers control for other factors that could impact body image and ideal body shape? If this is not answerable it should be acknowledged as a limitation of the study.

Response: Agree. A sentence has been added acknowledging this as a limitation to the study (page 13, line 317-319). “This study did not control for other factors that could impact body image or shape dissatisfaction, such as history of physical trauma or musculoskeletal disorders.”

12. P.9 line 265-266 sentence starting with "The self-ideal body shape..." would be better placed on P. 9 line 258 prior to the sentence starting with "High self-ideal body shape...".

Response: This sentence has been modified in response to comments from other reviewers.

13. P. 9 line 269. It is not clear what relevance the Song and colleagues article on body contouring is relevant to pre-bariatric surgery patients.

Response: Agree. Reference to the Song and colleagues paper has been removed from the manuscript.

14. P. 9 line 277. Statement starting with "By understanding their current body size..." I don't think that this is the most important connection. There are studies that show the prevalence of underestimating BMI among populations with obesity and therefore this population is no different.

Response: This statement is further justified as suggested by Reviewer 2.

Thank you for your time and attention with regards to this manuscript.

Sincerely,

Hilary Price