PEER REVIEW HISTORY

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ARTICLE DETAILS

| TITLE (PROVISIONAL) | Cohort Profile: The Bariatric Experience Long Term (BELONG), a Long-Term Prospective Study to Understand the Psychosocial, Environmental, Health, and Behavioral Predictors of Weight Loss and Regain in Patients Who Have Bariatric Surgery |
| AUTHORS | Coleman, Karen J.; Paz, Silvia; Bhakta, Bhumi; Taylor, Brianna; Liu, Jialuo; Yoon, Tae; Macias, Mayra; Arterburn, David; Crawford, Cecelia; Drewnowsk, Adam; Figueroa Gray, Marlaine; Hansell, Laurel; Ji, Ming; Lewis, Kristina; Moore, Darren; Murali, Sameer; Young, Deborah |

VERSION 1 – REVIEW

| REVIEWER | Christophe Matthys  
KU Leuven, Department of Chronic Diseases, Metabolism and Ageing |
| REVIEW RETURNED | 15-Jan-2022 |

| GENERAL COMMENTS | Overall the paper covers an interesting topic but the paper is written in very chaotic way and not in a coherent manner. The article seems disjointed, and the methods does not speak to the results. On the one hand the authors provide background information in line with a protocol paper but at the same time the authors want to share results. The available results are not discussed critically. The study is highly relevant and the results potentially interesting, but the manuscript needs significant redesign to provide a structured and systematic overview of the studies aims and the specific protocol, methods, results, and discussion thereof. If the manuscript only intends to describe baseline data and not to explore predictors of weight regain, this should be clearly stated in the title and methods and the article adapted and structured accordingly.  
Manuscript ID bmjopen-2021-059611  
Overall the paper covers an interesting topic but the paper is written in very chaotic way and not in a coherent manner. The article seems disjointed, and the methods does not speak to the results. On the one hand the authors provide background information in line with a protocol paper but at the same time the authors want to share results. The available results are not discussed critically. The study is highly relevant and the results potentially interesting, but the manuscript needs significant redesign to provide a structured and systematic overview of the studies aims and the specific protocol, methods, results, and discussion thereof. If the manuscript only intends to describe baseline data and not to explore predictors of weight regain, this should be clearly stated in the title and methods and the article adapted and structured accordingly.  
General |
1. Did the authors follow any of the EQUATOR Network guidelines to describe their paper?

2. The frequently used term ‘patients from racial and ethnic groups’ needs to be better defined otherwise it is non-sensical as all patients are from a racial or ethnic group. For example, ‘Mostly patients from racial and ethnic minority groups’ OR ‘Mostly patients from non-white racial and ethnic groups.’

3. It is unclear how %weight loss is calculated. For example, on page 13 or 34 weight loss is reported for before surgery and then for after surgery. Presumably reported weight loss before surgery is based on a previous self-reported weight compared to baseline weight. Presumably weight loss after surgery equates to the difference between weight at baseline and follow-up visits excluding pre-surgery weight loss. These terms should be clearly defined. This is particularly important for calculating 20% TWL post-surgery, which the authors indicate as an important criterion. %weight loss should always be clearly defined in relation to a specific time point.

Abstract
Readers are not interested in the fact that the BELONG cohort is unique. The readers will be able to judge themselves. The wording from line 10-15 does not fit in a purpose section of the abstract.
Line 20-25 is part of result section.
The abstract misses the framework used for the behavioural type of research.
Line 37-42 this is a method part mixed with the findings.

Introduction
Line 25 ‘the largest’ is not really defined and how does this compare to the SOS?
Line 6 page 6: reference is missing
Line 20-28 page 6: it is not clear how the model has been build. The authors should follow the specific steps of the BCW or IM or MRC frameworks. This information is needed to be able to understand how the behaviour change model was created. Currently it is unclear what the specific purpose is. Further this information belongs to the methodological section and not in an introduction. Further information is required for transparency and comparison reasons.

Methodology
1. While the main outcomes are mentioned briefly in the abstract the aims and objectives of the study are not clearly articulated in the study design section of the methodology. Weight ‘regain’ is mentioned in the title, abstract and introduction, but not once in the methods or results.

2. The study design mentioned 20% TWL as a measure of successful vs. unsuccessful weight loss and maintenance. Yet this is not mentioned again, and no results are reported for this categorisation. This is strange as this seems to be a central component to the aim of the study.
Use SI Units for weight, length.
Line 52-54, in line with the MRC framework, the authors should clearly mention that the authors followed the principles of patient-centeredness, which is an added value of the study but now hidden in the method section. Please use standard frameworks on how the study and behaviour change models are designed.
Page 7 –line 12, mention the institute of Ethical approval. This part
belongs to the study design according to the different EQUATOR Network guidelines.
Page 7-Line 26-57 is a mixture of results and methods, which is not clear and not common, same for line 8 on page 8.
Page 8 line 23: the theoretical framework and interview guide for the qualitative interviews are missing.
Page 8 – line 39-44, these are results and not methodology
Page 8 – line 52-53: Readers are not interested if the data was used for clinical purposes. Do not mingle research and clinical relevant decisions. This is very confusing for an external reader. Again results are mentioned in this part.
Page 9 – line 45: Regarding Figure 1 evidence and theory that were used should be provided. Now the reader does not know where the information is coming from.
Page 10 – Qualitative interviews: the topic guide is missing, which theoretical framework has been created? Did the authors report according to the COREQ model?
Patient & Public involvement, this should be placed after study design, if the authors would use a recognised framework eg MRC, it would be easier for the reader.

Results
1. The main outcomes are stated as ‘weight loss and regain’, yet weight loss is reported on very briefly, regain is not mentioned in the text, and these findings are not critically discussed. It would be worthwhile grouping patients into ‘weight maintenance/ongoing weight loss’ AND ‘weight regain’ groups and exploring the differences between these groups. The title alludes to this in ‘Predictors of Weight Loss and Regain’ but this is not explored at all.

2. The survey data described in the results section relates only to the baseline. The authors should explain why results from the year 1 and 3 follow up visits are not reported on if the visits have been completed. Perhaps it is worthwhile including some of these findings? If the paper is intended to only provide a description of the baseline findings this should be clearly stated in the aims and objectives.

Discussion
1. The importance of the study is underscored, the study population is compared to one other study, and limitations are adequately highlighted. However, there is no critical discussion of the study’s findings or comparison of the study’s findings compared to previously research.

2. Possible reporting bias of the self-reported data should be discussed and related to previous work in similar populations.

Remove sentences line 37 – page 14, this is relevant for a grant proposal but not for a protocol paper.
GENERAL COMMENTS

In this study, the authors attempt to describe the association between weight loss outcomes and ‘immutable factors’ described for the BELONG cohort. The potential contribution to the literature is how the theoretical framework in Fig 1 and influence what and how the authors studied factors linked to weight outcome. However, the paper requires significant changes to improve manuscript clarity, flow, and novelty.

Introduction:
- The author mentions the theoretical fig.1 but it is unclear if it is cited from a previous publication? Has been described previously?

- Because the thesis of this paper build on this framework, the authors are encouraged to briefly describe, how this model was developed, describe the model and how it influenced their study design.

Research Question: The study research questions/ objectives and hypothesis are vague. The authors should explicitly state their primary research question(s)?

Methods:
The authors describe a battery of measurements. I wonder if they have assessed health-related quality of life using SF-36 or IWQoL?

Results/Discussion
There is no discussion section, I assume it starts “Previous Published Work”? Not common terminology.

Regardless, the discussion should start by reminding the ready of what this study is about why it was done, and summarize the key findings and not report only.

The authors should then describe how their findings related to the existing literature (Previous published work)
- What are the novel contributions of this paper. There is already a body of literature establishing evidence of the variation in outcomes after bariatric surgery and the influence of psychosocial factors on bariatric surgery long-term outcomes?

Overall, the authors have rich data but don't illustrate that depth by describing how their qualitative component help them explain or understand some of their results. Including these findings will highly add value to this paper. I encourage the authors to address these comments before considering resubmission.

Minor Comments

References: Relevant publish work to discuss in the discussion:
- Sockalingam S, Hawa R, Wnuk S, et al. Psychosocial predictors of quality of life and weight loss two years after bariatric surgery: Results from the Toronto Bari-PSYCH study. Gen Hosp Psychiatry. 2017;47:7-13. https://doi.org/10.1016/j.genhosppsych.2017.04.005.

- Sockalingam S, Cassin S, Crawford SA, et al. Psychiatric predictors of surgery non-completion following suitability assessment for bariatric surgery. Obes Surg. 2013;23(2):205-211. https://doi.org/10.1007/s11695-012-0762-5
Morgan DJR, Ho KM, Platell C. Incidence and determinants of mental health service use after bariatric surgery. JAMA Psychiatry. 2020;77 (1):60. https://doi.org/10.1001/jamapsychiatry.2019.2741.

Youssef A, Keown-Stoneman C, Maunder R, et al. Differences in physical and mental health-related quality of life outcomes 3 years after bariatric surgery: a group-based trajectory analysis. Surg Obes Relat Dis. 2020;16(11):1837-1849. https://doi.org/10.1016/j.soard.2020.06.014.

Kolotkin RL, Kim J, Davidson LE, Crosby RD, Hunt SC, Adams TD. 12-year trajectory of health-related quality of life in gastric bypass patients versus comparison groups. Surg Obes Relat Dis. 2018;14(9): 1359-1365. https://doi.org/10.1016/j.soard.2018.04.019

Devlin MJ, King WC, Kalarchian MA, et al. Eating pathology and associations with long-term changes in weight and quality of life in the longitudinal assessment of bariatric surgery study. Int J Eat Disord. 2018;51(12):1322-1330. https://doi.org/10.1002/eat.22979.

Youssef A, Mylopoulos M, Maunder R, Wiljer D, Cassin SE, Wnuk S, Leung S, Sockalingam S. Understanding bariatric patients’ experiences of self-management post-surgery: A qualitative study. Clinical obesity. 2021 Oct;11(5):e12473.

 Vy 1 – AUTHOR RESPONSE

Reviewer #1

The article seems disjointed, and the methods does not speak to the results. On the one hand the authors provide background information in line with a protocol paper but at the same time the authors want to share results. The available results are not discussed critically. The study is highly relevant and the results potentially interesting, but the manuscript needs significant redesign to provide a structured and systematic overview of the studies aims and protocol, methods, results, and discussion thereof. If the manuscript only intends to describe baseline data and not to explore predictors of weight regain, this should be clearly stated in the title and methods and the article adapted and structured accordingly.

We submitted the manuscript under the Cohort Profile submission requirements. We also used current issue Cohort Profile articles as examples. Generally, our understanding was that it had to be formatted in and contain the following information [copied here with some edits from the submission guidelines https://bmjopen.bmj.com/pages/authors/#submission_guidelines].

1. Cohort profiles should describe the rationale for a cohort’s creation, its methods, baseline data and its future plans. Cohorts described should be long-term, prospective projects and not time-limited cohorts established to answer a small number of specific research questions.
2. Title should begin ‘Cohort profile: …’. It should include the full name and any commonly used abbreviation of the cohort, plus its location or whether it is international. Include the type of cohort.
3. The article sections required are Introduction, Cohort Description, Findings to Date, Collaborations, and Further Details.

This is not an original research or a protocol manuscript in which there would be methods, results, and discussion sections. We only have descriptive findings for the cohort and there is a specific section for “Findings to Date” which is a combination of Results and Discussion but only for previously published findings using the cohort.
Throughout the manuscript we attempt to address the reviewer’s request for more of a discussion of the results in the context of the literature (again – only as a descriptive population). However, we cannot change the title because this is the intent of the cohort, and we cannot provide any findings that are related to the prediction elements of the study because this has not been analyzed/collected yet.

Reviewer #2

1. **Introduction:** The author mentions the theoretical fig. 1 but it is unclear if it is cited from a previous publication? Has been described previously? Because the thesis of this paper builds on this framework, the authors are encouraged to briefly describe, how this model was developed, describe the model and how it influenced their study design.

We apologize that the theoretical framework figure was not included for the reviewer. We have included this with our revision. We previously included two paragraphs on pages 4 - 5 at the end of the introduction explaining why we created this model and the process we used to create it. We believe this adequately addresses the reviewer's request. This model was created a priori to the collection of data. We have added a sentence at the end of the introduction on page 6 that states we will use the study findings to revise our a priori theoretical model.

2. **Research Question:** The study research questions/objectives and hypothesis are vague. The authors should explicitly state their primary research question(s)?

We have provided specific hypotheses at the end of the introduction on pages 5 – 6.

3. **Methods:** The authors describe a battery of measurements. I wonder if they have assessed health-related quality of life using SF-36 or IWQoL?

We measured quality of life using the EQ5-D to provide comparative data to large populations and to include a brief, valid and no-cost measure of quality of life (at the time, the IWQoL and SF-36 were not available without a per person administration fee). Quality of life is mentioned as something we measured on page 9 and a reference was provided.

4. **Results/Discussion:** There is no discussion section, I assume it starts "Previous Published Work"? Not common terminology. Regardless, the discussion should start by reminding the reader of what this study is about why it was done and summarize the key findings and not report only.

Please see our response to Reviewer #1. The manuscript does not contain a discussion section and thus the summation of the study purpose would increase the word count substantially without fitting into the specific information we needed to provide in the Previously Published Work section on page 13.

5. The authors should then describe how their findings related to the existing literature (Previous published work). What are the novel contributions of this paper? There is already a body of literature establishing evidence of the variation in outcomes after bariatric surgery and the influence of psychosocial factors on bariatric surgery long-term outcomes?

Please see our response to Reviewer #1. In the original submission, we have spent a great deal of time reviewing the limitations of the literature to establish the purpose of cohort (pages 4 - 5) and in
the Previously Published Work section (page 13) we do talk about those findings in the context of the literature on bariatric access. However, the cohort descriptors we present in our manuscript have not been published previously and are presented purely for descriptive purposes for future published work and potential collaborations. In the strengths and limitations section of the manuscript on pages 14 - 15 we previously included a discussion of the cohort study design and descriptive features in the context of other studies that might have comparable data sets.

6. Overall, the authors have rich data but don’t illustrate that depth by describing how their qualitative component help them explain or understand some of their results. Including these findings will highly add value to this paper. I encourage the authors to address these comments before considering resubmission.

We do not have any qualitative study results; however, we now present the purpose of the qualitative interviews at the end of the introduction on page 6 and the stakeholder engagement process was previously discussed in the Patient and Public Involvement section on page 10.

7. References: Relevant publish work to discuss in the discussion:

We incorporated several of these references in our manuscript as appropriate.