Author's response to reviews

Title: Correlates of quality of life of pre-obese and obese patients: a pharmacy-based cross-sectional survey

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Author's response to reviews: see over
Revision of the manuscript: Correlates of quality of life of overweight and obese patients: a pharmacy-based cross-sectional survey

Dear Sir, dear Madam

Please find below the replies to the comments. We warmly thank you for the additional time you gave us to revise our manuscript. We did our very best to address the different points raised by the reviewers. Nonetheless, it must be acknowledged that this study has some methodological limitations that cannot be overcome.

Besides, our main difficulty was to reconcile the initial objective (correlates of quality of life scores) with reviewer 2’s suggestions: relationship between quality of life scores and BMI according to other covariates. Additional results have been included to reconcile both goals. Nonetheless, it was difficult for us to focus essentially on this new objective, which would eventually have lead to a distinct manuscript.

Furthermore, we believe that we must remain most careful regarding the interpretation of these additional analyses. Indeed, their robustness and concrete interpretation may be questionable. Also, the manuscript has become lengthy and adding any additional material would make it hardly readable.

Waiting for your final decision, should you have any additional questions, please do not hesitate to contact us

Yours faithfully

Dr Laurent Laforest
Dear editor,

I feel that the authors have worked hard on this paper and have made some substantial improvements (especially the introduction part is much better). However some serious issues remain:

Major compulsory revisions:

1. p.6 'relations with other people' is much too broad a category to be measured by the statement 'I feel attacked when people talk about my weight'. This statement just tells something about the person’s reaction to comments, not necessarily about the quality or the nature of his/her relations to other people... This limitation has been mentioned in the Discussion: “Domains referring to relations with others, psychological distress were only partially studied as only a single item was dedicated to these dimensions in the OSQOL. Given the prominent role of psychological welfare in QOL [13], further studies, with more elaborated instruments are needed to investigate these topics more accurately.” I would suggest renaming this item to a less ‘ambitious’ category. This would have been a good idea. However we have used a validated questionnaire and we have stuck to the official denomination.

2. p.7 it is not clear to me how the first two dimensions were constructed from the 7 and 2 questions. If a summation score was created, the authors should first do a factor analysis (for sure on the 7 items) to see whether the different items measure the same construct. If I look at the descriptive statistics of the different items, I doubt that this is the case. If not, then one cannot use the summation score as it measures two or even three things at the same time. For dimensions 1 and 2, quantitative scores have been computed. Given the absence of normal distribution both scores have been dichotomized according to the 25%-quartile. For the two remaining dimensions as there was a unique item, we considered percentages of patients who answered ‘fairly true’ or ‘completely true’ to the question.

3. p.15 in the study limitations section, the authors state that a selection bias (people attending pharmacies being more sick and therefore causing the QoL of the sample being lower than that of the obese/overweight population) is improbable because no significant influence of co-morbid diagnosis on QoL measures was found. However, these co-morbid diagnosis only reflect the rather severe illnesses like diabetes etc. It seems to me that it is highly probable that obese/overweight patients visit the pharmacy for less severe sources of discomfort that can also impair QoL, e.g. sore feet, allergies,
etc. These sources of discomfort may have nothing to do with being overweight and may not be captured by the questions of this study, but they will certainly be more prominent among people visiting the pharmacy on a regular basis and will therefore cause a selection bias. We acknowledge that this is a real bias, which is difficult to overcome in this particular context. This limitation has been clearly mentioned in the manuscript. “Additionally, our population recruited in community-pharmacies may present more co-morbid conditions than might be the case for a more representative sample of overweight and obese patients.”

In addition the absence of a significant impact of co-morbid diagnoses on QoL seems a bit strange. In the sample diabetes, rheumatic conditions and other chronic illnesses would have no negative impact on the QoL, which contradicts the literature... For example, I would expect rheumatoid conditions negatively influencing the ability to squat or to climb stairs. This is true for rheumatoid conditions. However, this would be more questionable for other diagnoses such as asthma, dyslipidemia or diabetes, which may account for the absence of global significance. The impact of co-morbid conditions on QOL would have been more visible on a generic questionnaire such as SF-12. Of note, there was an impact of the number of comorbid-conditions on physical and vitality scores in univariate analyses.

Minor compulsory revisions: Thank you very much for noticing these points. We have corrected them.
1. p.3 on the third line a bracket is missing (it is closed bu not opened).
2. p.3 on the fourth line, a full stop is needed after [9]
3. p.3 after [12-14] again a full stop is required

In conclusion, I think the paper is improved substantially, but some issues remain to make it suitable for publication.

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable
Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests: I declare that I have no competing interests
Reviewer’s report
Title: Correlates of quality of life of overweight and obese patients: a pharmacy-based cross-sectional survey
Version: 2 Date: 13 April 2009
Reviewer: Thomas von Lengerke

Reviewer’s report:

I acknowledge that the authors have strived to respond to and consider my comments (plus those of - notably three - other reviewers). Still, for reasons given below, the revision does not convince me, and is still in need of major compulsory and minor essential revisions.

Major Compulsory Revisions

1. Abstract, Results and Conclusions:
Even though the authors did add some additional analyses in response to my earlier comment 1. (see also below, 2.), the abstract still completely focuses on the variations of OSQOL by age, SES, and gender. As I had noted before, these results do not sufficiently add new insights to the field of inquiry. Indeed, the aim of the present manuscript was to identify the correlates of OSQOL scores. We fully acknowledge that reviewers’ suggestions are of a real interest. However, it was difficult for us to modify the primary aim of our manuscript, which would have eventually resulted in another paper. In addition, we could not have addressed most of other reviewers’ remarks. We did our best to reconcile both objectives. On the one hand the manuscript has become more informative. On the other hand, this entails an accumulation of results and the manuscript tends now to be lengthy.

Plus, even if one posits that they may be somewhat innovative by replicating former findings in (overweight) patients ATTENDING PHARMACIES, the authors would have to make a very much stronger case of why regular pharmacy attendance is an interesting issue for the field. This case would have to be made not only in the Discussion, but also in the Theory-part of the paper, and by giving convincing arguments why regular (overweight) pharmacy attenders are interesting (i.e., apart from the mere fact that they can be studied via pharmacists). This would have been an excellent idea. However, although we have searched in this direction, we did not find any substantial advantage besides the description of a specific population requiring regular therapy for any indications. As suggested by another reviewer this may result in a selection bias compared to the overall population of pre-obese and obese patients.

2. Table 4:
The table shows results of analyses the authors have added in response to my earlier comment 1. This acknowledged, however, they fall short of my points as follows:

(a) Even though now, cross-tabulations of the BMI-three-group-variable (28-29.9/30-34.9/>=35) with age, gender, occupational status, current smoking, alcohol
consumption, co-morbid diagnoses, previous efforts to change diet and previous efforts to change physical activity are reported as part of the table, the ASSOCIATIONS inherent in these cross tabs of the BMI-variable with these variables are neither explicitly numerically specified (e.g. chi-square or related statistic) nor described nor discussed. **We tend to disagree with this point, as statistical tests (chi-square tests) were mentioned in the corresponding column.**

(b) Both the fact that these associations (i.e. those between BMI-group and age, gender, occupational status, etc.) are not sufficiently transparent, and that still no theoretically driven hierarchical regressions are reported to clarify if the contrasts “BMI >=35 vs 28-29.9” and “BMI 30-34.9 vs 28-29.9” are significant without adjustment and attenuated afterwards, imply that no sufficiently thorough mediational analyses have been added. In other words, readers still are not informed of if and how existing differences in OSQOL across BMI-groups may be explained by sociodemographic/-economic factors, behavioral factors, and (co-)morbidities. **This would have lead to interesting, but lengthy analyses. Another manuscript would have been required to fully investigate this hypothesis. Of note, there are now 5 tables in the manuscript.**

(c) What the table does supply are cross tabs relevant to possible moderation (in contrast to mediation) effects, i.e. if age, gender, occupational status, etc. modify the effects of BMI on OSQOL. Also, I agree with the authors’ statement in their reply to my first review that interpretation of p-values may be deceptive given the loss of statistical power resulting from stratification. Thus, the brevity of the texts describing the table (on p. 9 and p. 13) is even more surprising. **The brevity of our comments was motivated by the caution which is, to our mind, needed when interpreting these stratified analyses.**

That is to say that, if the table is finally included, to me it should be described in more detail under Results and Discussion. This description should include noticeable differences across other variables, e.g. that BMI-differences in vitality do seem to differ across age groups (which is unlikely to be explained by excessively unbalanced counts). **This latter interaction has been formally tested (see table below). Interaction test was not significant (p=0.30, please, see table 1 below).**

All interactions between QOL scores and BMI according to other co factors have been tested (please, see table below). The corresponding results are summarized in the table below.

**Overall, no salient interaction emerged, but one. The significant interaction observed between BMI and vitality according to dietary habits is consistent with the stratified analyses. Nonetheless, this result is difficult to interpret. A U-shaped relationship was observed between BMI and vitality scores when patients made substantial changes in dietary habits. Compared with pre-obese patients, better vitality scores are observed for obese class 2 patients. Such a finding is difficult to interpret in practical terms. This would lead to over-interpret this finding and this is one reason why we highly recommend caution with those results.**
### Table 1: Interactions between BMI and OSQOL scores according to the different factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Dimension 1 p-value</th>
<th>Dimension 2 p-value</th>
<th>Dimension 3 p-value</th>
<th>Dimension 4 p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.1554</td>
<td>0.305</td>
<td>0.8073</td>
<td>0.2734</td>
</tr>
<tr>
<td>Gender</td>
<td>0.1355</td>
<td>0.9859</td>
<td>0.4992</td>
<td>0.9505</td>
</tr>
<tr>
<td>Socioeconomic status</td>
<td>0.1649</td>
<td>0.4224</td>
<td>0.4704</td>
<td>0.5652</td>
</tr>
<tr>
<td>Current smoking</td>
<td>0.9036</td>
<td>0.2983</td>
<td>0.0868</td>
<td>0.6819</td>
</tr>
<tr>
<td>Alcohol</td>
<td>0.9169</td>
<td>0.5966</td>
<td>0.8963</td>
<td>0.1524</td>
</tr>
<tr>
<td>Number of associated co-morbid diagnoses</td>
<td>0.4333</td>
<td>0.723</td>
<td>0.9798</td>
<td>0.6582</td>
</tr>
<tr>
<td>Previous efforts for substantial changes in dietary habits</td>
<td>0.1998</td>
<td>0.0205</td>
<td>0.3599</td>
<td>0.5961</td>
</tr>
<tr>
<td>Previous efforts for substantial changes in physical activities</td>
<td>0.9003</td>
<td>0.5768</td>
<td>0.8073</td>
<td>0.6952</td>
</tr>
</tbody>
</table>

### Table 2: Relationship between OSQOL dimensions and BMI according to the other variables

<table>
<thead>
<tr>
<th>BMI (kg/m²)</th>
<th>Dimension 1</th>
<th>Dimension 2: Vitality desire to do things</th>
<th>Dimension 3: Relations with others (1)</th>
<th>Dimension 4: Psychological state (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>% ≤ Q25% score (3)</td>
<td>p</td>
<td>% ≤ Q25% score (3)</td>
</tr>
<tr>
<td>OVERALL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 29.9</td>
<td>154</td>
<td>12.3</td>
<td>22.7</td>
<td>13.6</td>
</tr>
<tr>
<td>30 – 34.9</td>
<td>186</td>
<td>21.5</td>
<td>25.8</td>
<td>15.1</td>
</tr>
<tr>
<td>≥ 35</td>
<td>154</td>
<td>42.2</td>
<td>35.7</td>
<td>31.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Previous efforts for substantial changes in dietary habits</th>
<th>Dimension 1</th>
<th>Dimension 2: Vitality desire to do things</th>
<th>Dimension 3: Relations with others (1)</th>
<th>Dimension 4: Psychological state (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>0.0001</td>
<td>0.2115</td>
<td>0.0313</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>&lt; 29.9 kg/m²</td>
<td>100</td>
<td>15.0</td>
<td>24.0</td>
<td>13.0</td>
</tr>
<tr>
<td>30 – 34.9 kg/m²</td>
<td>109</td>
<td>23.9</td>
<td>33.0</td>
<td>15.6</td>
</tr>
<tr>
<td>≥ 35 kg/m²</td>
<td>89</td>
<td>41.6</td>
<td>34.8</td>
<td>27.0</td>
</tr>
<tr>
<td>Yes</td>
<td>&lt;.0001</td>
<td>0.0109</td>
<td>0.0072</td>
<td>0.1299</td>
</tr>
<tr>
<td>&lt; 29.9 kg/m²</td>
<td>50</td>
<td>8.0</td>
<td>22.0</td>
<td>16.0</td>
</tr>
<tr>
<td>30 – 34.9 kg/m²</td>
<td>70</td>
<td>15.7</td>
<td>14.3</td>
<td>15.7</td>
</tr>
<tr>
<td>≥ 35 kg/m²</td>
<td>60</td>
<td>45.0</td>
<td>36.7</td>
<td>36.7</td>
</tr>
</tbody>
</table>
Minor Essential Revisions

3. Title:
By WHO standards (WHO. Obesity: Preventing and managing the global epidemic [WHO Technical Report Series No. 894]. WHO: Geneva, 2000), overweight is defined as BMI >= 25, and consists of the categories preobese (25-29.9), obese class 1 (30-34.9), obese class 2 (35-39.9), and obese class 3 (>= 25). Thus, by these international standards, the title has to read “of overweight patients” or “of preobese and obese patients”!  

This point has been corrected. We thank the reviewer for these helpful remarks.

4. Methods- and possibly Discussion-section: In their covering letter, the authors have revealed valuable additional information in their responses to my earlier comments 9.- 12.. Please re-check and make sure that all of these have been included in the revision of the paper as well.

We have added in the present revision the following:

- Weight and height were collected to compute BMI.
- Quantitative scores could not be normalized (which resulted in dichotomizing the outcome variables).
- We have added in the Discussion the following sentence: “Lastly, refusals were not documented. However, as a prerequisite to participate was to be a regular customer, refusal rate may be assumed to be low. “

In turn, we believe that indicating the absence of power calculation would not add much to the manuscript.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests: I declare that I have no competing interests.