Author's response to reviews

Title: Parental Encouragement of Healthy Behaviors: Adolescent Weight Status and Health-Related Quality of Life

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Author's response to reviews: see over
BioMed Central- Public Health

Dear Editors,

Thank-you for the opportunity to respond to reviewer feedback on our article “Parental Encouragement of Healthy Behaviors: Adolescent Weight Status and Health-Related Quality of Life.”

We were glad to receive thorough feedback, which we feel has enabled us to significantly improve the quality and clarity of the paper, and to be afforded the chance for the revised version to be considered for publication in your journal.

Specifically, changes within the article were made to address responses to provide more thorough explanation and clarification of a number of important areas within the introduction and discussion section. Some additional information and clarification in the methods and results sections were also requested. The reviewer’s suggestion of more appropriate wording throughout the manuscript was also appreciated.

The individual reviewers comments have been addressed in the table attached below, and all changes within the manuscript have been highlighted.

My co-authors and I are excited about the possibility of contributing to the International Journal of Obesity, and we eagerly await your decision on our revised manuscript.

Many thanks,

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For:
Andrew Lewis
Solveig Petersen
Boyd Swinburn
Marj Moodie
Lynne Millar
<table>
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<th>Comment</th>
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<tr>
<td><strong>TITLE and ABSTRACT</strong></td>
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<tr>
<td>Overall the title and abstract are clear. The only suggestion is that the word “improvements” is removed from the conclusion section as findings from a cross-sectional study cannot support this.</td>
<td>We agree with this suggestion, and have removed the text.</td>
<td>- Text edited as follows  - Removed:  - Findings suggest that parental encouragement of healthy behavior is associated with improved HRQoL outcomes for adolescents.  - Replaced with:  - Findings suggest that parental encouragement of healthy behavior is associated with increased HRQoL scores for adolescents.</td>
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<tr>
<td><strong>INTRODUCTION</strong></td>
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<td>The authors point out that there is “emerging evidence to suggest that physical health conditions like obesity and cardiovascular disease share a direct relationship with mental health and well-being and therefore, attention is now focused on the impact of obesity on psycho-social problems in adolescents”. This indicates that most researchers in this field are directing their focus towards the impact of obesity on psycho-social problems in adolescents, is that an overstatement?</td>
<td>We acknowledge the reviewers comments on this section, and have revised this part of the introduction for clarity.</td>
<td>- Text edited as follows  - Removed:  - Therefore, attention is now focused on the impact of obesity on psycho-social problems in adolescents.  - Replaced with:  - Therefore, the impact of obesity on psycho-social problems in adolescents is one area of research being explored.</td>
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<tr>
<td>The others refer to a recent systematic review which was published in 2009 and therefore it is not that recent.</td>
<td>We have updated this reference to address this point.</td>
<td>- Text edited as follows  - Removed:  - A recent systematic review of 22 studies  - Replaced with:  - A systematic review of 22 studies</td>
</tr>
<tr>
<td>While it was clear from the title that this article had something to do with parental encouragement, this was not brought up until the end of the introduction, which made it hard to follow. I would suggest adding something briefly to the end of the first paragraph.</td>
<td>Thank-you for this suggestion. We have revised the text to make the direction of the paper clearer.</td>
<td>- Text edited as follows  - Text inserted:  - These conditions are complex, and interventions need to be aimed at the individual and the environment in which children live. The home environment is important as including parenting in interventions for adolescents with a range of mental health and psychosocial issues has generally been found to increase the efficacy of interventions, as well as promoting whole of family health and mental health. Therefore, the impact of obesity on psychosocial problems in adolescents is one area of research being explored.</td>
</tr>
<tr>
<td>Third paragraph, lines 3-4, “A study... has suggested...” A study cannot suggest. Please rephrase.</td>
<td>We agree with this comment and have rephrased the sentence.</td>
<td>- Text edited as follows  - Removed:  - A study investigating the inverse relationship between obesity and depression has suggested that..</td>
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</tbody>
</table>
Findings from a study investigating the inverse relationship between obesity and depression has suggested that a number of studies found that social support was associated with reductions in the HRQoL of adolescents with obesity. Do you mean “a lack of social support is associated with reductions...” if not, this is confusing.

In the fifth paragraph, when you suggest reasons why clinical samples seeking treatment for weight loss are different. Another potential reason that wasn’t mentioned is that these individuals might be more motivated, which could factor into their HRQoL.

METHODS

The response rate was 51% which the authors should also mention in the limitations section of the manuscript.

It was confusing at first why there was a section in the measures for the ABAKQ. Please make it clearer why you were using data from this section (i.e. which variables were of interest for the current study, and why they were used – as covariates).

Varimaxor rotations – should be varimax rotation

The way that you described the WHO standards for children is hard to follow, specifically how normal weight was defined.
<table>
<thead>
<tr>
<th>It would be helpful to list a few samples items from the PedsQL.</th>
<th>We agree that including some sample items from the PedsQL would improve the quality of this section and have revised the text.</th>
</tr>
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<tr>
<td>It would be useful to know the decision process behind the specific covariates used.</td>
<td>Thank-you for this comment. The authors acknowledge that this section of the manuscript could be improved with this level of detail but fear it would add significantly to the word count and the reference list. These covariates are commonly included in these types of analyses for the following reasons:</td>
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<td></td>
<td>Text added to the methods sections under covariates:</td>
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<td></td>
<td>There is evidence that actual physical activity and consuming a healthy diet independently influence mental health and so these specific covariates were included because the authors wanted to isolate the independent variables of parental encouragement to test if there was an influence above and beyond the behaviors. Mental</td>
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</tbody>
</table>

- Text edited as follows
- Removed:
  - In the current study, we report a global score (totals all 23 items), a psychosocial summary score (combines 15 items assessing emotional, social and school functioning and wellbeing), and a physical score (derived from eight items)
- Replaced with:
  - In the current study we report a global score that totals all 23 items, a psychosocial summary score, which combines the 15 items assessing emotional (“I feel sad”), social (“I have trouble getting along with other teenagers”), and school functioning and wellbeing (“It is hard to pay attention in class”), and a physical score derived from eight items (“It is difficult for me to run”)
health has also been associated with age and sex among adolescents so the influences of these variables were also controlled for in the analyses. School was included as a cluster variable because of the sampling structure; the sample was selected at the school level rather than at the individual level.

The authors consider the most important covariates to be physical activity and healthy diet so have included text to reflect this.

While the section clearly reports that parental encouragement should be one factor, it would be interesting to know the relationship between maternal and paternal encouragement.

The data analysis section was clear. The only suggestion is that you choose to refer to it as either HRQoL or PedsQL to avoid confusion.

RESULTS

In Table 1, it would be more useful to see the mean/SD of the tertiles of parental encouragement than the %
<table>
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<td>In each group In table 1, for HRQoL (global, psychological, and physical) and parental encouragement, it would be useful to know the mean/SD by weight status, since this was a large part of the study. We thank the reviewer for this suggestion. Table 1 amended to include means and SD of HRQoL and subscales x weight and the parental encouragement x weight.</td>
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<td>In the second paragraph, do you mean perceived physical limitations by the parent or by the child? Is there evidence in the literature to support this? Thank-you for bringing this issue to our attention. More evidence is required to support this contention, and the text has been revised to reflect this.</td>
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<th>DISCUSSION</th>
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<tr>
<td>In the third paragraph, it is noted that moderation might not have been supported because there are a number of other factors that influence the relationship. If you say this, you should list these other factors along with evidence to support them. We agree with this comment and have subsequently expanded upon the argument and provided supporting evidence.</td>
</tr>
</tbody>
</table>

Text edited as follows
- Removed:
  - Since only the physical functioning scale shows this result, it may be indicative of perceived physical limitations that come with increased body size.
- Replaced with:
  - Since only the physical functioning scale shows this result, it may be indicative of the adolescent’s perceived physical limitations that come with increased body size, however more research is required to elucidate the obesity-related factors that may impact on functional difficulties.

Text edited as follows
- Removed:
  - Adolescents experience many competing influences during this important developmental period [27]. Weight status, parental encouragement and the covariates examined by this study explained only a small proportion of the total variance in global HRQoL, including psychosocial and physical functioning and wellbeing. Therefore moderation may not have been supported in this study, because the relationship is influenced by a multitude of other factors.
- Replaced with:
  - Adolescents experience many competing influences during this important developmental period including peers and school [27]. Weight status, parental encouragement and the covariates examined by this study explained only a small proportion of the total variance in global HRQoL, including psychosocial and physical functioning and wellbeing. Therefore moderation may not have been supported in this study because the relationship is influenced by other factors. For example, it may be that peer support, rather than parental, is more influential on weight and HRQoL as there is the tendency for a greater conformity to peer groups as children reach adolescence [27].
| In the limitations section, it is noted that the parental encouragement variable in this study might only be an indicator of parental encouragement. Please expand on what is meant by this. | Thank-you for identifying the lack of clarity in this argument. We have expanded upon the reasons why the measure can only act as an indicator. | - Text edited as follows  
- Removed:  
- ..the ability to gather in-depth and specific information on all study variables is relinquished and complex constructs are often represented by only a few items. For example, the parental encouragement measure used in this study can act only as an indicator.  
- Replaced with:  
- ..the ability to gather in-depth and specific information on all study variables is relinquished and complex constructs are often represented by only a few items. For example, the measure of parental encouragement used in this study can act only as an indicator as it was formed using four survey questions. |
|---|---|---|
| In paragraph 5, it suggested the agreement between adolescents and parents might not be as high as between children and parents. Why? | We agree that this argument could be made clearer and have amended the text to demonstrate why agreement between parents and adolescents may not be as high as between children and adolescents. | - Text edited as follows  
- Removed:  
- Concordance of child and parent perceptions of familial support is approximately 70%, according to a recent study [30]; however agreement may not be so high between adolescents and their parents.  
- Replaced with:  
- Concordance of child and parent perceptions of familial support is approximately 70%, according to a recent study [30]; however, considering that conformity to parental control decreases as children reach adolescence [27], agreement may not be so high between adolescents and their parents. |
| The word “improve” is used throughout paragraph 6. Please change this to another word, as the results from this cross-sectional study cannot indicate whether parental encouragement improves any outcome. | We agree that the use of the word “improve” is not suitable in this instance and have amended the text throughout this paragraph. | - Text edited as follows  
- Removed  
- In doing so, parents can help improve global, psychosocial and physical functioning of their adolescent offspring. Furthermore, variation found between HRQoL subscales indicates that some areas of functioning may be more heavily influenced by parental encouragement and weight than others. Specifically, only high levels of parental encouragement were associated with improvements in psychosocial functioning, whereas both medium and high levels of encouragement are sufficient to significantly improve the physical and global functioning of adolescents. The results may also have significant implications for developing interventions. Parental encouragement of healthy behaviors has been identified as a factor particularly impacting on physical functioning. Therefore parental encouragement can form an additional target for obesity interventions, especially those involving physical exercise. Rather than focusing on the difficult task of weight reduction [7], targeting parents to increase their levels of encouragement of healthy behaviors, as a mechanism to increase HRQoL, may be an effective strategy for reducing adolescent obesity. |
- Replaced with:
- In doing so, parents can help increase global, psychosocial and physical functioning of their adolescent offspring. Furthermore, variation found between HRQoL subscales indicates that some areas of functioning may be more heavily influenced by parental encouragement and weight than others. Specifically, only high levels of parental encouragement were associated with increments in psychosocial functioning, whereas both medium and high levels of encouragement are sufficient to significantly increase the physical and global functioning of adolescents. The results may also have significant implications for developing interventions. Parental encouragement of healthy behaviors has been identified as a factor particularly impacting on physical functioning. Therefore parental encouragement can form an additional target for obesity interventions, especially those involving physical exercise. Rather than focusing on the difficult task of weight reduction [7], targeting parents to increase their levels of encouragement of healthy behaviors, as a mechanism to increase HRQoL, may be an effective strategy for reducing adolescent obesity.

| The first paragraph does not add much on its own. Suggest combine the first and second paragraphs. | We agree and have combined the first 2 paragraphs. | - Text edited as follows
- Removed:
- A sample of 3,040 adolescents participating in the IYM project were used to test the hypothesis that greater encouragement of healthy lifestyle behaviors from parents would be associated with higher HRQoL scores, and that parental encouragement of healthy lifestyle behaviors would moderate the relationship between weight status and HRQoL.
- Replaced with:
- Our hypotheses that greater encouragement of healthy lifestyle behaviors from parents would be associated with higher HRQoL scores, and that parental encouragement of healthy lifestyle behaviors would moderate the relationship between weight status and HRQoL, were partly supported by the results of this study. Parental encouragement of healthy behaviors was found to significantly moderate the relationship between weight status and physical functioning and wellbeing in the adjusted model. Two explanations may account for this finding. As was illustrated in Figure 1, receiving a medium or high amount of parental encouragement (compared to low) seemed to be protective of physical functioning and wellbeing among normal weight adolescents. However adolescents in the overweight or obese group had similar physical functioning and wellbeing at low and medium parental encouragement. This may indicate that high levels of parental |
encouragement are needed to protect the physical functioning and wellbeing in adolescents with overweight or obesity. Since only the physical functioning scale shows this result, it may be indicative of the adolescent’s perceived physical limitations that come with increased body size, however more research is required to elucidate the obesity-related factors that may impact on functional difficulties [7]. However, previous research has found familial social support to be important in improving adolescent HRQoL [11-13], therefore the direction of the interaction is contrary to what would be expected. Further consideration is required to determine whether the interaction was a chance finding in this sample, or has meaningful implications for the development of future interventions.

<table>
<thead>
<tr>
<th>Minor issues not for publication</th>
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</thead>
<tbody>
<tr>
<td>1. Background, paragraph 1 line 4: a comma is not needed after “(aged 5-19)”</td>
</tr>
<tr>
<td>2. Discussion, paragraph 3, line 9: it should be improvements “in” not “on”</td>
</tr>
<tr>
<td>3. Discussion, paragraph 4, lines 1-3: a word is missing... should it be “to help ensure THAT future obesity...”?</td>
</tr>
<tr>
<td>4. Discussion, paragraph 7, line 2: the comma after HRQoL is not needed</td>
</tr>
</tbody>
</table>

Thank-you for bringing these grammatical errors to our attention. The text has been amended.

- Text edited as follows
  1. Comma removed
  2. Changed “on” to “in”
  3. Added “that”
  4. Comma deleted