

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

| | |
|----------------------------|--|
| TITLE (PROVISIONAL) | Well-being, physical fitness and health profile of 10-12-year-old boys in relation to leisure-time sports club activities – a cross sectional study. |
| AUTHORS | Larsen, Malte; Madsen, Mads; Cyril, Rasmus; Madsen, Esben; Lind, Rune R.; Ryom, Knud; Christiansen, Søren; Elbe, Anne-Marie; Krstrup, Peter |

VERSION 1 – REVIEW

| | |
|------------------------|--|
| REVIEWER | López-Gil, José Universidad de Murcia |
| REVIEW RETURNED | 12-May-2021 |

| | |
|-------------------------|--|
| GENERAL COMMENTS | <p>Thank you so much for inviting me to review this manuscript. Authors tried to investigate the association between participation in leisure-time sports club activities and well-being and physical health parameters in 10-12-year-old Danish boys. The article has some several limitations (such as the non-inclusion of girls in the study, pubertal stage development, etc.). Likewise, it does not provide very innovative information. However, the authors included a large sample with objective evidence for most of their variables. I leave some comments that could substantially improve the article:</p> <p>Lines 30-34: 'The literature shows that being overweight in childhood and adolescence is associated with reduced quality of life, especially with regard to physical and psychological well being, social support and school related well-being'. Reference?</p> <p>Line 34: Remove 'poor'.</p> <p>Lines 39-41: 'Sports club participation in popular sports is associated with physical and mental health in Danish 10-12 year old girls'. Authors are justifying their study with one study conducted in girls. However, they did not include girls in their study.</p> <p>Line 53: The citation of 'Nielsen et al. (2016)' is in a wrong format.</p> <p>Line 58: For me, it is more appropriate indicate 'cardiorespiratory fitness'.</p> <p>Page 9, line 4: Biographical information?</p> <p>Page 9, line 15: Please, indicate the full name of the study.</p> <p>Page 9, line 28: Begin with a capital letter.</p> |
|-------------------------|--|

| | |
|--|--|
| | <p>Page 10, line 37: Include that sample was selected by convenience.</p> <p>Page 11, line 34: What about that 'self-developed section'. Give to the reader further information.</p> <p>Page 11, line 40: Please, specify 'HR'.</p> <p>Page 12, line 13: Authors assessed 'lower body muscular strength'. I would replace this definition.</p> <p>Page 12, line 17: 'Ørntoft et al. (2018)' are not cited correctly.</p> <p>Page 12, line 53: Ahler et al. (2012). Are not cited correctly. Please, revise all the citations throughout the manuscript.</p> <p>Page 13, line 46: 'Inactive boys' is wrong. It is more appropriate to indicate 'boys insufficiently active'.</p> <p>Page 15, line 7: 'Better fitness' it is not correct. What is 'better'? It is a value judgment here. Higher or greater is more appropriate.</p> <p>Page 15, line 15: 'Doesn't'? Replace by 'Does not'.</p> <p>Page 15, lines 55-57: 'And, in addition, boys can experience satisfaction of the basic needs for autonomy, competence and social relatedness which could explain the higher well-being scores'. Please, rewrite this sentence and add an appropriate reference.</p> <p>Page 17, line 11: 'recognisable'. British? American? Select one.</p> <p>Page 17, line 25: 'These differences were also seen among girls'. You did not evaluate girls.</p> <p>Limitations section: What about the fact that girls were not included in the study? Similarly, the authors have also not used the considered gold standard for measuring aerobic capacity (they should indicate this in the limitations).</p> <p>Did the authors measure pubertal stage development?</p> <p>Did the authors adjust for potential confounding variables in the regression analyses conducted?</p> <p>Best wishes,</p> |
|--|--|

| | |
|------------------------|---|
| REVIEWER | Suetani, S. Queensland Centre for Mental Health Research |
| REVIEW RETURNED | 14-May-2021 |

| | |
|-------------------------|---|
| GENERAL COMMENTS | <p>Thank you very much the opportunity to review this manuscript.</p> <p>Overall, I think this is an interesting topic. I feel that the manuscript is somewhat under-cooked – it looks like it was rushed to be submitted. There are quite frequent minor grammatical and structural errors throughout the manuscript (e.g. inappropriate use of capital letters, missing full stops, inconsistent paragraph formatting, inconsistent abbreviations, and a few track mark changes left in the manuscript). I am not sure what happened, but</p> |
|-------------------------|---|

| | |
|--|--|
| | <p>the PDF version I downloaded has the Table and Figure sections all messed up. I think Table 1 is overcast on the top of the reference section, and I can't really see the other tables properly either.</p> <p>My major concerns are:</p> <ul style="list-style-type: none"> - Background: The WHO definition quoted is the definition of Health in general, not children's health status as implied in the context. I don't think it adds much to the manuscript and if anything, it is somewhat misleading. I would consider removing the quote altogether. - Background: Being overweight and being physical activity are not the same thing – they are independent i.e. you can be overweight AND physically active and vice versa. The first paragraph in the background seems to confuse the two concepts and I felt confused reading it. - Background: Is there a reason why a very similar study was done in girls but not both girls and boys at the same time? What was the rationale for doing two separate studies for boys and girls? I would have thought you could have done the children as one group, then sub-analysed two different genders. I think you need to expand this in the discussion section as well. - Background in general needs to be tidied up – it introduces two or three concepts in a somewhat scattered manner and I am not entirely sure how they leads to the aim of the study. - Discussion: Practical implications – I think you probably need to say more than children need to be encouraged to exercise. Is there any specific example on how you may be able to do that? Is there anything gender specific? - Discussion: I wondered if you could drill down a little bit more about different sport types and your thoughts on why these differences were present. <p>Some minor suggestions include:</p> <ul style="list-style-type: none"> - Abstract: it may be better to write 10 to 12-year-olds rather than "10-12-yr-old" - Abstract: I think the results section should be better summarised. - The first dot point under "Strengths and limitations" does not really make sense to me. Please consider re-writing. - Method: Who is Danish FA? What does FA stand for? |
|--|--|

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Dr. José López-Gil, Universidad de Murcia

Comments to the Author:

Thank you so much for inviting me to review this manuscript. Authors tried to investigate the association between participation in leisure-time sports club activities and well-being and physical health parameters in 10-12-year-old Danish boys. The article has some several limitations (such as the non-inclusion of girls in the study, pubertal stage development, etc.). Likewise, it does not provide very innovative information. However, the authors included a large sample with objective evidence for most of their variables. I leave some comments that could substantially improve the article:

Author reply:

Thank you for your evaluation of our manuscript and for the relevant comments, which have enabled

us to improve the manuscript. Please find our point-by-point response below.

Lines 30-34: 'The literature shows that being overweight in childhood and adolescence is associated with reduced quality of life, especially with regard to physical and psychological well-being, social support and school related well-being'. Reference?

Author reply:

We are sorry about the missing references. We have added two relevant references to support this statement.

Line 34: Remove 'poor'.

Author reply:

The word has been removed.

Lines 39-41: 'Sports club participation in popular sports is associated with physical and mental health in Danish 10-12 year old girls'. Authors are justifying their study with one study conducted in girls. However, they did not include girls in their study.

Author reply:

We have used the findings from the study in girls to justify our points. We did not include the girls in this manuscript because their results have already been published as a separate scientific article as part of a PhD thesis by Dr Mads Madsen.

Line 53: The citation of 'Nielsen et al. (2016)' is in a wrong format.

Author reply:

Thank you for letting us know. We have changed this in the revised version of the manuscript.

Line 58: For me, it is more appropriate indicate 'cardiorespiratory fitness'.

Author reply:

We have modified the text.

Page 9, line 4: Biographical information?

Author reply:

The most important was date of birth, to be used in the description of age in this quite homogeneous age group.

Page 9, line 15: Please, indicate the full name of the study.

Author reply:

The name of the overall project is given in lines 6-7 of the revised manuscript.

Page 9, line 28: Begin with a capital letter.

Author reply:

Thank you for the reminder. This has been changed in the revised manuscript.

Page 10, line 37: Include that sample was selected by convenience.

Author reply: We respectfully disagree on this point, since all Danish schools were invited to participate in the study. That is described in the methods section of the revised version of the manuscript.

Page 11, line 34: What about that 'self-developed section'. Give to the reader further information.

Author reply:

As there are only two self-developed questions, we believe we have provided the relevant information, by describing both so that others can replicate them.

Page 11, line 40: Please, specify 'HR'.

Author reply:

Thank you for the reminder. This has been specified in the revised version of the manuscript

Page 12, line 13: Authors assessed 'lower body muscular strength'. I would replace this definition.

Author reply:

With all respect, we prefer to keep it, as this has been used on a number of previous occasions.

Page 12, line 17: 'Ørntoft et al. (2018)' are not cited correctly.

Author reply:

Thank you for the reminder; it has been changed.

Page 12, line 53: Ahler et al. (2012). Are not cited correctly. Please, revise all the citations throughout the manuscript.

Author reply:

Thank you for the reminder; it has been changed.

Page 13, line 46: 'Inactive boys' is wrong. It is more appropriate to indicate 'boys insufficiently active'.

Author reply:

Thank you for the suggestion; we have now used a third solution: "Not active in sports clubs" .

Page 15, line 7: 'Better fitness' it is not correct. What is 'better'? It is a value judgment here. Higher or greater is more appropriate.

Author reply:

Thank you for the suggestion; we have now changed the wording accordingly.

Page 15, line 15: 'Doesn't'? Replace by 'Does not'.

Author reply:

Thank you for the reminder, it has been changed.

Page 15, lines 55-57: 'And, in addition, boys can experience satisfaction of the basic needs for autonomy, competence and social relatedness which could explain the higher well-being scores'. Please, rewrite this sentence and add an appropriate reference.

Thank you for the reminder, it has been changed.

Page 17, line 11: 'recognisable'. British? American? Select one.

Author reply:

Thank you for the reminder; it has been changed as part of the language editing.

Page 17, line 25: 'These differences were also seen among girls'. You did not evaluate girls.

Author reply:

The referenced paper did. We have now modified the description for clarity.

Limitations section: What about the fact that girls were not included in the study? Similarly, the authors have also not used the considered gold standard for measuring aerobic capacity (they should indicate this in the limitations).

As mentioned, results from the girls are published in another paper. We think that we have described the method for measuring aerobic capacity well, and do not see it as a limitation worth highlighting.

Author reply:

Did the authors measure pubertal stage development?

No, unfortunately this was not an option in the present study, but the high number of participants limits the potential differences between the groups. This has now been made clearer in the revised version of the manuscript.

Did the authors adjust for potential confounding variables in the regression analyses conducted?

Author reply:

No, we prefer the clean statistics, and then we have considered potential confounders throughout the manuscript.

Best wishes,

Thanks

Reviewer: 2

Dr. S. Suetani, Queensland Centre for Mental Health Research

Comments to the Author:

Thank you very much the opportunity to review this manuscript.

Overall, I think this is an interesting topic. I feel that the manuscript is somewhat under-cooked – it looks like it was rushed to be submitted. There are quite frequent minor grammatical and structural errors throughout the manuscript (e.g. inappropriate use of capital letters, missing full stops, inconsistent paragraph formatting, inconsistent abbreviations, and a few track mark changes left in the manuscript). I am not sure what happened, but the PDF version I downloaded has the Table and Figure sections all messed up. I think Table 1 is overcast on the top of the reference section, and I can't really see the other tables properly either.

Author reply:

We thank the reviewer for the relevant and helpful comments and suggestions, which have improved the manuscript significantly. As part of the revision, we completed a thorough proofreading of the text in order to improve the flow of the manuscript and to correct spelling and grammar errors.

My major concerns are:

- Background: The WHO definition quoted is the definition of Health in general, not children's health status as implied in the context. I don't think it adds much to the manuscript and if anything, it is somewhat misleading. I would consider removing the quote altogether.

Author reply:

We have considered it once again and decided to remove it.

- Background: Being overweight and being physical activity are not the same thing – they are independent i.e. you can be overweight AND physically active and vice versa. The first paragraph in the background seems to confuse the two concepts and I felt confused reading it.

Author reply:

We agree that it is not the same thing and we are sorry for any possible confusion. We have modified the background section for clarity.

- Background: Is there a reason why a very similar study was done in girls but not both girls and boys at the same time? What was the rationale for doing two separate studies for boys and girls? I would have thought you could have done the children as one group, then sub-analysed two different genders. I think you need to expand this in the discussion section as well.

Author reply:

The paper about the girls was published separately as part of a PhD thesis with a strict deadline that made it impossible to combine the analysis. That is the reason why they are presented in two separate papers. Publishing this large-scale study in two separate papers also enabled us to present more data for each of the genders, comparing the five most popular sports for the boys and the girls, respectively.

- Background in general needs to be tidied up – it introduces two or three concepts in a somewhat scattered manner and I am not entirely sure how they leads to the aim of the study.

Author reply:

We believe the connections are better after moving the section about overweight. We now think it presents the reasons why we have hypothesised that participation in leisure-time sports is associated with well-being and physiological health.

- Discussion: Practical implications – I think you probably need to say more than children need to be encouraged to exercise. Is there any specific example on how you may be able to do that? Is there anything gender specific?

Author reply:

We understand your concern and have elaborated on this issue in the revised version of the manuscript.

- Discussion: I wondered if you could drill down a little bit more about different sport types and your thoughts on why these differences were present.

Author reply:

We have done our best to line up the qualities of the various sports in the first section of the discussion and have discussed the differences in the other sections.

Some minor suggestions include:

- Abstract: it may be better to write 10 to 12-year-olds rather than “10-12-yr-old”

Author reply:

Thank you for the suggestion, but we are limited by the abstract guidelines.

- Abstract: I think the results section should be better summarised.

Author reply:

With all respect, we are happy with the way the results are presented in the abstract with the “all-sports” group first, followed by “football” as the sport with the best association with better health status.

- The first dot point under “Strengths and limitations” does not really make sense to me. Please consider re-writing.

Author reply:

We understand your concern and have described the strengths in further detail.

- Method: Who is Danish FA? What does FA stand for?

Author reply:

It stands for Football Association. We were reasonably sure that it was understandable to readers in the area as it is a highly used abbreviation, but we have now described the abbreviation to provide clarity.

Reviewer: 1

Competing interests of Reviewer: Not applicable.

Reviewer: 2

Competing interests of Reviewer: Nil known

VERSION 2 – REVIEW

| | |
|------------------------|--|
| REVIEWER | López-Gil, José Universidad de Murcia |
| REVIEW RETURNED | 28-Sep-2021 |

| | |
|-------------------------|---|
| GENERAL COMMENTS | The authors have addressed most of the comments satisfactorily. To my mind, it could be accepted. Kind regards, |
|-------------------------|---|