Reviewer’s report

Title: Muscle building supplement use in Australian adolescent boys: Relationships with body image, weight lifting, and sports engagement

Version: 1 Date: 29 Oct 2019

Reviewer: Ricardo Agostineti

Reviewer's report:

Please, highlight all text changes in different color.

Introduction:

The information about appearance motivations or enhance the performance and comparations with US studies should be presented in the discussion section after the results indicate these variables as predictors.

Besides that, what is the main innovative points of the study compared to Yager's study published in 2014? The authors need present this innovation in the introduction.


Methods

The data from this study is the baseline of an intervention "the Athletes Learning and Training to Avoid Steroids". About the questionnaire applied, was it validated and reproducible tested?

About the sports participation, the adolescents were asked only about which sport they are involved. Wouldn't it be more correct to ask the adolescent which sport he practiced periodically and with the presence of a coach? My concern is that in this question the adolescent has also considered the recreational sport and this point needs to be addressed by the authors.

Please, insert in the statistic section information about the correlation's analysis (person or sperman?) and please, insert information about the cutoff of effect size of correlations.

Results

Didn't the authors come up with hierarchical regression analyzes on anabolic steroids and creatine use due to the low percentage among adolescents? It is a important point because in the title the authors say "supplement use... relationships with body image, weight lifting and sport" but this relation was analyzed only in protein powder, correct? creatine is also a supplement.

The authors need to make it clear in the title, abstract and objective that predictor analyzes were
performed on protein powder only or exclude information about creatine and steroids from the article, presented only as prevalence and continue with the current analyzes of paper (only with protein powder) and focus only in protein powder.

The use of the linear and logistic model is correct, but I was unsure why the authors applied linear regression for "intent" and logistics the "current use".

The authors perform the interpretation of the odds ratio results correctly, but please also insert the odds ratio interpretation of the significant variables from step 2 (Muscularity [beliefs]).

Limitation
In the limitation section the authors explain about the low consuming creatine and anabolic steroids, but one must consider that adolescents might be afraid to be honest about using mainly asteroid hormones.

Conclusion
Considering that the authors have a specific topic for Implications for Research and Practice, I think the conclusion should be more concise and straightforward. Currently the conclusion is very extensive and mixes information that could be presented in the discussion.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

**Declaration of competing interests**
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal.