Author's response to reviews

Title: Health Enhancing Strength Training in Nonagenarians (STRONG): rationale, design and methods

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Version: 2 Date: 4 May 2009

Author's response to reviews:

Dear Editor

Thanks for giving us the possibility to re-submit to BMC Public Health a revised version of our manuscript entitled “Health Enhancing Strength Training in Nonagenarians (STRONG): rationale, design and methods” by Serra Rexach et al. BMC Public Health MS: 2087385621263878

The authors thank the Reviewer for the positive appreciations and comments given to our manuscript. Accordingly to the reviewer’s comments, the manuscript has been modified following all her suggestions.

All the changes made in the manuscript are highlighted in yellow background.

All the authors have approved the publication of the paper in its present form.

We hope that you will find this work of interest.

# The authors have not published or submitted any related papers from the same study.
# All the authors have approved the publication of the paper in its present form.
# On behalf of all authors, I hereby confirm that this manuscript has been prepared in accordance with the BMC Public Health guidelines for authors, and
that the manuscript meets the requirements as outlined in the checklist.

We believe that the present manuscript is within the scope of BMC Public Health, and is of high interest for its readers.

We hope that you will find this work of interest.
Sincerely and respectfully

Prof. Lucia on behalf of all co-authors

ANSWER TO THE REVIEWER'S COMMENTS

The authors thank the reviewer for the appreciations and comments given to the manuscript. All the suggestions have been taken into consideration, and the manuscript has been modified accordingly. Please, find below answers to the reviewers' comments. All the changes in the text have been highlighted in yellow background.

Reviewer's report
Title: Health Enhancing Strength Training in Nonagenarians (STRONG): rationale, design and methods
Version: 1 Date: 27 April 2009
Reviewer: Donna K Ciliska
Reviewer's report:
This proposal is brief, but has some important areas missing. Language is clear and appropriate.

Comment
Discretionary Revisions
RE: Will the study design adequately test the hypothesis? 1. It would be useful to have a feasibility stage. The design, as is, could adequately test the hypothesis, but it may be difficult to get nonagenarians to participate at the level this study demands. I also think the drop-out rate is underestimated and the sample size should thus be larger. Again, a feasibility study would indicate if dropouts would be larger than estimated. Or, is there any literature with this elderly group re drop-out from this type of exercise?

Authors' Response
With due respect, we believe the study design will address adequately the hypothesis. Regarding the concerns of the Referee on the feasibility of our study (particularly, difficulty on gathering nonagenarians and possibly high rate of drop-outs): we have now started the study and thus added actual data to the revised manuscript. The Referee will see that the study is feasible. We invested much time and devoted much effort for the study to be feasible. By this, we will ensure that we gather at least 60 people.
In page 15-16 of the revised manuscript we added a new paragraph indicating these issues.

Comment
2. In the analysis section, more detail on what actual outcomes will be included in the ANOVA would be helpful.
Authors’ Response
Following the Reviewer’s comment, we have detailed which outcomes will be included in the ANOVA test. Please see revised manuscript, page 8, third paragraph.

Comment
Major Compulsory Revisions
RE: Are sufficient details provided to allow replication of the work or comparison with related analyses: if not, what is missing?
3. There should be more literature review, or a statement that no related literature is available for this age group (if no literature, this may again reflect the feasibility issues defined above).
Authors’ Response
Please see revised version of the manuscript (top of page 5). We stated that a recent meta-analysis [33] located 66 randomised trials on resistance exercise training interventions for older adults (mean age of 60 years and over). Though it was concluded that progressive strength training is effective to increase muscular strength in this subpopulation [33] and in fact Fiaratone et al. showed strength improvements in people aged 86-96 yrs (new ref. # 34), whether progressive strength training does also improve each of functional capacity, quality of life and ability to cope with activities of daily living in nonagenarians (#90 years) remains to be elucidated. Later on, we specify that our country does offer a unique research setting given the very high life expectancy of our population (the 6th in the world, 1.7 years less than Japan, the first country with longer life expectancy).

Comment
4. There is not enough information about the measures being utilized (reliability and validity). I would also recommend a clearer presentation of primary versus secondary outcomes, and why these were chosen.
Authors’ Response
In the revised manuscript we provide information (with new references) on the validity of the different outcomes. We also included a new paragraph (page 14-15) under the subheading ‘Familiarization and reliability assessment’.

On the other hand, in the revised manuscript we clearly specify which were the primary and secondary outcomes and why did we chose them (Please see additions in page 5 under ‘Objectives’). Thanks for catching this.
Comment
5. Measurement of adverse events is not clear; will falls be measured by chart audit?

Authors’ Response
Following the Reviewer’s comment, we have added a new paragraph under the subheading ‘Assessment of side effects’ (second parag. page 15). In this new paragraph we specify which adverse effects will be assessed, why assessment of falls is important and how did we define and record falls.

Comment
Level of interest: An article of limited interest

Authors’ Response
With all due respect, we do not agree with the Reviewer’s appreciation. Indeed, physical inactivity is arguably the biggest health problem we are facing in the XXI century (Church & Blair, Br J Sports Med 2009 Feb;43(2):80-1). The good news is that achieving a more physically active (and thus healthier) society is a very achievable goal. But first we need to convince clinicians using evidence-based medicine (i.e., using RCTs as the present one) of the health-related benefits that exercise training has in all population groups. The life expectancy of our societies is increasing, and so is (i) the number of frail people who are not independent (even for the simplest tasks of daily living) and (ii) the subsequent burden for caregivers and health institutions in general. Showing the multiple health benefits of exercise training in the oldest groups is thus of medical relevance. There is no polypill that can mimic the multiple beneficial effects that regular exercise has on many complex physiological systems (skeletal muscle, heart, lungs, brain), nor is there any drug with multiple beneficial effects on numerous health-related outcomes as those evaluated here (QOL, muscle strength, daily functioning, etc).

Comment
Quality of written English: Acceptable
Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.
Declaration of competing interests:
I declare that I have no competing interests

Authors’ Response
Comments appreciated. We have a statistician and a bio-mathematician on board dealing with the statistical issues.