Reviewer's report

Title: Medical theses as part of the scientific training in medical and dental basic education

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Reviewer: Ana Marusic

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General

This is an interesting study looking at the quality of diploma theses written by medical and dental students in Finland. Although the study was performed in a single school in Finland, the results can be generalized to other settings, i.e. schools which require preparation of a formal thesis for and MD of DMD degree, especially in Europe.

However, there are several methodological aspects of the study and the presentation of the results which have to be cleared up before publication, and which require major revision.

- Major Compulsory Revisions

1. Methods section: One type of data evaluated in the study was the „layout of the thesis“. The methods section defined the categories of this layout as „unsatisfactory, satisfactory, good, or excellent“, but there is no explanation for these categories. The authors have to provide their definitions for each category, as well as what they mean by „layout“, as this term can have different meaning for different people/professionals.

2. Methods section: This section also states that the „use of statistical methods“ was evaluated, but there is no description of this variable. The Results section reports on „proper use of statistical methods“ in 38.8% of the thesis but, again, there is no definition of the „proper use“ of statistics – the authors have to describe clearly their definition for categories of „proper“ and improper“ use of statistics.

3. Results section – 1st paragraph: It would help if the authors defined their classification of the departments, especially the terms „theoretical“ and „clinical-theoretical“. Do they mean basic medical or preclinical departments? Calling them theoretical would imply that there is no practical work there, which is not true, as they perform experimental work in the laboratory.

4. Results section – 3rd paragraph: The first sentence states that the theses reported the use of experimental animals in „some cases“. A number should be provided because it is an important indicator of work in a basic medical laboratory. Another sentence in this paragraph states that „10 works reported merely laboratory work“ – the term “merely” gives a negative and demeaning light to the laboratory work, suggesting that it is a work at the lower level of quality that
other types of work. The authors should be careful in the choice of their adjectives.

5. Results section – 4th paragraph: „Common shortcomings“ of the theses were described, but concrete data are not provided. These data are probably the elements of the „layout of the thesis“ and it would be interesting to see the frequencies of different shortcomings – they could be the target for future instruction to students and their mentors.

6. Results section – 5th paragraph: as outlined in comment 2, proper description of statistics is presented but the meaning of the category is not clear.

7. Results section – Figure 1: I see no point in showing the distribution of eventual publication according to the thesis type – there are only four numbers here that have to be presented, and they could be either stated in the text or incorporated in the table.

8. Discussion section – last two paragraphs: There is redundancy in the last two paragraphs of the manuscript- the first is the conclusion of the Discussion section and the second is the formal Conclusion. I see no reason for such separation of the Conclusions – they should then be stated only in that section and the last paragraph of the Discussion incorporated in the Conclusion section.

Also, the Discussion section would benefit from addressing possible educational and training interventions to increase the quality of the theses and their publication.

9. Abstract: The Abstract of the manuscript reports on „traditional format of reporting statistical analysis“ without defining this term. Also, conclusion is made that the proportion of published theses remained small – suggesting that the study investigated time trends in theses publications, which was not actually the case here.

- Minor Essential Revisions

1. The authors state that the used a „standardised questionnaire“ for the collection of data – since they did not actually conduct a formal survey of participants, the term „data collection form“ or a similar one should be used.

2. The name of the first author from reference 2 (Hren) is misspelled in the Background section.

- Discretionary Revisions

1. The authors may want to compare the publication practice of Finnish diploma theses with publication practice for master and doctoral theses in a country of similar population size in Europe:


2. The manuscript would benefit from English language editing
What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

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, except that I am the author on two articles cited in this manuscript.