Author’s response to reviews

Title: Optional part-time and longer GP training modules in GP practices associated with more trainees becoming GPs - a cohort study in Switzerland

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Author’s response to reviews:

Dear Dr. Aronin,

We thank you and the reviewers of BMC Family Practice for your constructive comments on our manuscript. We significantly revised our paper to meet the requests of the first reviewer. The second reviewer made no requests for revision.

All changes in the manuscript are described point-by point in our response to the reviewer. Meeting some of these requests required substantial changes to the text; in the response, in some cases, we refer you to the changed sections rather than attempting to list dozens of changes. This version was carefully edited by a native English speaker.

We thank you for the opportunity to improve our work, and hope it meets your expectations.

Sincerely,
Thank you for your submission to BMC Family Practice. I am sorry for the delay in informing you of our decision.

In addition to addressing the reviewer comments, please address the following editorial points:

1. Please include all author email addresses on the title page.

   We included all author email addresses on the title page. We regret not having met your editorial criteria when we first handed in our manuscript.

2. Please move your List of abbreviations to after the Conclusions.

   Our abbreviations now come after the Conclusions.

3. Please ensure that your manuscript adheres to STROBE guidelines for observational studies and include a completed STROBE checklist as an additional file.
We have checked our manuscript thoroughly, and it meets STROBE guidelines. Please see the attached STROBE Checklist, where we have listed line numbers in the manuscript where each point is addressed.

4. Please include copies of your surveys in all original languages and in English translation as additional files.
Copies of surveys and a translation are included.

5. Please format your Author contributions statement according to the format here: https://bmcfampract.biomedcentral.com/submission-guidelines/preparing-your-manuscript/research-article
We changed the format of Author contributions to match the required format.
“LS collected, analysed and interpreted data, and drafted the manuscript in collaboration with SS. SS also supervised the study, collected, analysed and interpreted data, and performed statistical analyses. RA, CH, AG, and SS conceived of and designed the study and critically revised the manuscript, adding intellectual content. They also obtained funding. All authors read and approved the final manuscript.” (page 20)

6. Please remove figure titles and legends from figure files. Please see guidelines here: https://bmcfampract.biomedcentral.com/submission-guidelines/preparing-your-manuscript#preparing+figures
We removed figure titles and legends from figure files. We placed them at the end of the main manuscript, under ‘Figure titles and legends’. (page 25)
1st Reviewer's (Maria Papadakaki) comments:

Thank you for your kind invitation to review this interesting manuscript from Switzerland. I have included some comments for the authors to consider.

We are glad the reviewer found our manuscript interesting, and that she has given us the opportunity to substantially improve its readability. We found all her comments useful, and revised accordingly. We realized that much of the problem was caused by our inability to express ourselves in English as clearly as we wished, and so the first author (LS) worked closely with an English-language editor to ensure that we explained our study clearly. Because of the differences between German and English, we sometimes found it necessary to restructure whole paragraphs. Despite changes in language and some reorganization, we emphasize that we did not change content of the methods and results of our manuscript.

Introduction

1. Some introduction about training in Family Medicine is necessary. What is the minimum knowledge and what are the skills required based on EU and international standards? What are the training principles set by accredited bodies in Europe and abroad? An overview of the standards in FM/GP training is necessary not only for the Swiss context, for an international readership.

We thank the reviewer for her comment, and apologize for not making the specific focus of the paper clearer. We now realize our opening paragraph wandered, without coming to a point, and have sharpened it significantly. We did not set out to evaluate the skills and knowledge of training program graduates, since other papers have done that. Instead, we sought to determine if Switzerland's GP training program successfully increased the number of trainees who decided to become GPs. Given the focus of our paper, an introduction to Family Medicine and EU standards would be a digression; the fault is with us for not making our case clear. We hope we have addressed the reviewer’s concerns by revising the first paragraph of the introduction to more clearly to state our focus give the reader the background to understand our research question.

Western countries face a GP shortage1-5 because aging populations require more care and place more pressure on health care,6,7 and because not enough doctors specialize in general practice.2,3,5 To address the growing shortage of GPs, many highly-developed countries have
set up training programs for GPs and designed them to raise the attractiveness of the profession.8-10 In 2011, the Organisation for Economic Co-operation and Development (OECD) determined that GP-centred health systems needed 1 GP per 1000 inhabitants to function well.11 Switzerland, for example, has a shortage of 2000 GPs, which will worsen when 60% of GPs retire by 2025; without an increase in the number of young physicians who choose primary care, Switzerland will be about 5000 GPs short by 2025.12 Every year, 900 Swiss medical students graduate, but only 10-20% intend to become GPs.12,13 Though many papers evaluate how effectively programs train GPs 14,15, far fewer ask if GP training programs successfully increase the number of trainees who decide to become GPs.9

2. Justification for the study seems to be weak and mis-guiding. Why is this study important? What is the gap that it aims to address? Does it address the need for evaluation of GP training? If so, the introduction needs to have background information on the evaluation standards of medical education. By mentioning that GPs in Switzerland become fewer and fewer, the authors do not justify the necessity for carrying out this study. Besides that, the authors refer to flexible and attractive training conditions for GPs in the recent years that seems to be contradictory. What is the added value of this study? what does it offer to international literature?

We understand the reviewer’s frustration, and again apologize that our inadequate English skills obscured our intent. The professional English-language editor we worked with has helped us express ourselves better. We substantially revised the introduction to answer the reviewer’s questions and we hope we have addressed her concerns. The study was important because we did not yet know if training programs for young doctors interested in becoming GPs actually increased the number of practicing GPs. As we noted above, this is what we sought to determine; we did not set out to evaluate whether they met medical education standards. We again thank the reviewer for the opportunity to revise the introduction, so that our goal is clearer. Because our focus is on whether or not the program reduces the GP shortage, we now begin with a brief description of the shortage and the medical crisis it has created in high-resource countries, including Switzerland. (See 1st paragraph in our answer to Question 1).

3. Methods

The authors claim to have conducted a cohort study. However, the study doesn't seem to be a cohort. Please re-consider this issue.
We apologize if the manuscript was not clear enough. We followed up a group of participants (cohort) who attended the WHM training program (exposure) between 2006-2015 (n=381). We used retrospective data from the WHM administrative database to define this group, and supplemented it with an online survey we administered to training program participants in 2016 to assess the outcome (becoming GP). Within the population of WHM trainees, we compared subgroups; for example, those who took 6 months to complete the program vs. those who took 12 months to complete the program, and those who trained part-time vs. those who trained full-time. If we were studying the occurrence of a disease, it would be like comparing two different treatments, without a no-treatment control group. We are sorry if our language in the original version did not make this clear. (Please see Figure 1.)

4. The methods are confusing and poorly described. The "setting" describes GP training in Switzerland, which is already raised in the introduction. The "sampling/recruitment strategy" is described under the "outcome". Important information is still missing such as the total population of residents and practicing GPs, representativeness of the sample, the data collection approach, etc.

We agree that the methods should be described more clearly, and have reorganized the whole section. We also included – where possible - information that the reviewer noted was missing:

I. Sampling/recruitment strategy: We explained this under ‘Participants’.

Between 1998, when WHM offered the first GP training module, and 2015, 809 GP trainees completed the program. We included all trainees who registered for a GP training module in GP offices with WHM in the last 10 years (from 2006 to 2015, Figure 1). We chose this period because, throughout this period, the evaluation forms were the same. We had 494 trainee records. Exclusion criteria were 1) those who had not completed training; and, 2) those who dropped out of training in under a month. No trainee was counted more than once, because we merged the records of trainees who had completed multiple modules and summed their hours. (pages 8&9)

II. Total population of residents and GPs: There is no national register that tracks the total population of all residents and all practicing GPs, so this information is not available. Our analysis began with the 494 records of residents in the WHM GP training program database. This represents the whole population of Swiss trainees who participated in the WHM program between 2006-2015.
Estimates of the number of doctors who become GPs vary. GPs comprise about 20% of the total number of doctors: of about 900 graduating medical students each year, some 180 will become GPs.

III. Representativeness of the sample: We included all participants of the WHM training module from 2006-2015, so this study represents WHM GP trainees very well. Since these trainees were already more interested in becoming a GP, this study does not represent trainees who already have a preference for other specialties. But some trainees who become GPs do so without completing the WHM training module. There is little data about their career path, and we could not confidently estimate their number.

IV. Data collection approach: Please find our more detailed information about data collection in the new subsection ‘Data sources’ on pages 9-11.

5. The following paragraph seems odd. "However, since the evaluation form contained 79 questions, we a priori selected a sample of questions to avoid methodological problems due to overfitting. Each co-author was invited to select those questions that are most likely associated with the exposure (longer vs. shorter GP training) and the outcome (practicing GP by 2016). We aimed to include all factors that were important to 5 of 6 co-authors". It looks as if the study design was decided by 5 out of 6 co-authors conveniently and without theoretical/scientific justification. Please explain.

We appreciate the opportunity to clarify this paragraph. The WHM evaluation survey contained 79 questions. When surveys have so many questions, this increases the chances that associations between factors will simply be statistical artefacts. In this case, if we analyzed all 79 questions and associations between them, we estimate that, with a significance level of 5%, one of twenty significant associations would be the mere product of chance. To increase the chance that associations would be true rather than due to type I error, we had to reduce the number of questions we included in our model. Instead of randomly selecting questions to omit (and thus possibly failing to account for very important factors), we asked six experts to select the questions they thought were most likely to be associated with the exposure (longer vs. shorter GP training) and the outcome (becoming a practicing GP by 2016). To reduce the chance that any individual expert’s biases would affect the outcome, we looked at the questions each expert selected, and then we narrowed the selection down to questions that 5 out of 6 experts agreed were important. It is true that the questions we selected could reflect a group bias, but we think it unlikely because experts brought different sets of expertise and knowledge to bear on their
selections. Panels of experts are often used to narrow down questions for statistical analysis in a similar fashion.

Selecting the questions to analyze beforehand ensured that we would not “cherry pick” our results.

We now explain this in detail in section on Data Sources:

However, since the evaluation form is very long (79 questions) we a priori selected a sample of questions to analyse. Limiting our sample helped us avoid methodological problems caused by overfitting. If we had included all the questions, and used a significance level of 5%, one in twenty associations we identified would have been a statistical artefact. We thus invited a panel of experts to choose questions they though most likely to be associated with the exposure (longer vs. shorter GP training) and the outcome (becoming a practicing GP by 2016). We decided in advance that we would include questions that at least 5 of 6 experts had selected. Four out of the original 79 questions met that criteria: 1) overall satisfaction with the training module; 2) quality of supervision by GP trainer; 3) ability to acquire perceived competencies during GP training module; and, 4) trainee’s opinion of how well the GP trainer taught. (page 10&11).

6. There is no correspondence between the study objectives and the questionnaire items/measurements or the analysis. Why do the authors explore trainers' characteristics? why do they explore satisfaction? There is no background information in the introduction to guide the design of this study. It looks as if the items were randomly selected out of an existing survey without a purpose.

Our first objective was to determine if program was successful in encouraging participants to become GPs. We agree with the reviewer that this needed to be clearer, and have revised accordingly. Our main outcome was whether trainees became GPs or not. Our secondary objective was to isolate factors that may decrease or increase the likelihood that young doctors will become GPs. Our experts (described in our answer to Question 4) agreed on including questions that addressed the characteristics of trainers, and trainee satisfaction with trainers. They thought these factors were likely to be associated with the choice of a GP specialty. As we noted above, we synthesized the recommendations of a panel of experts to arrive at the survey questions we chose to analyze. (see our answer to Question 5)
7. Please use the term "perceived competencies" as they were self-rated.

We changed the terminology to match the reviewer’s request in the text and in table 1.

8. Discussion

Both the discussion and the implications are poor in terms of explanations of the study findings based on the local sociocultural context as well as based on the Swiss medical education standards. The authors seem to repeat the findings without a meaningful discussion. They need to explain their outcomes using published evidence and end up with meaningful solutions and recommendations.

We significantly revised the discussion, and apologize for our earlier lack of clarity. We now showcase our main findings in paragraph 1 of the discussion, and put them into context in paragraph 2. We hope our revision of both the Introduction and the Discussion have made the structure of Swiss GP training clearer. We hope the trajectory of our argument is also clearer. We found that the percentage of GP trainees in the WHM program who actually become GPs was very high, which suggests to us that the program is effective. We found several factors associated with that (longer training, part-time training, etc.) and compared our findings to the literature, which generally lines up with our results. We thus argue that the program seems to be effective, and that it should a) be expanded to create spaces for more trainees; b) focus on encouraging trainees to train longer and also provide opportunities for part-time training; and, c) that the success of this and similar programs be evaluated rigorously in future studies.

2nd Reviewer's (Amanda Howe) comments:

This is a useful and thoughtful study, albeit observational in nature.

It makes an important conclusion relevant to training the modern workforce. Thank you for letting me review it.
We thank the reviewer for her interest, her support, and are happy she found our conclusion relevant and important, on an international level. We agree, because countries around the world are concerned with addressing their own GP shortages, and think GP training programs might be an effective means of increasing the number of young doctors who complete their GP specialty and go into practice. Because she sent us no suggestions for improving our manuscript, we enquired with the BMC editorial office. They supplied no additional comments, and so we expect that the improvements we made in response to Reviewer 1’s questions and requests will also prove satisfactory to Dr. Howe.

We hope our answers properly addressed the points the editor and reviewers made, and believe the changes we made in the manuscript improved its readability and made the content of our study more accessible.