Reviewer’s report

Title: Aspirations to become an anaesthetist: longitudinal study of historical trends and trajectories of UK-qualified doctors' early career choices and of factors that have influenced their choices.

Version: 0 Date: 13 Jun 2017

Reviewer: Paloma Toledo

Reviewer’s report:

The manuscript by Emmanouil et al evaluates historical trends and trajectories of UK qualified doctors entering into anesthesiology. The authors found that there has been an increase in the number of doctors entering anesthesia, with a higher number of men than women entering the field. Furthermore, the authors evaluated preferences for career choice and found differing rationales for men vs. women.

Overall, this is an interesting paper on a provocative topic. I have several methodological questions about the work, which I will outline below.

General comments:

1. There is a lot of data, and I have two major data related issues, which may require the attention of the statistical editor:

   a. It appears that each time point is being treated as independent data (there was a Bonferroni correction applied, but the authors did not specify the P value that would be significant for each analysis). However, should this not be a repeated measures analysis of group vs. time?

   b. It appears that several people may have taken the survey in multiple years. Should there not be a correction for this paired data?

2. In the introduction the authors state that they want to evaluate the factors that influence career choice and exit from anesthesia. However, this seems to be based on much of the data that is in table 3. Is that table exhaustive, or were categories collapsed by the authors? It seems relatively limited in scope and there may be a framing effect.

3. In reading the introduction, I thought that there was going to be some sort of regression model evaluating the factors associated with entry into anesthesiology. It appears that the demographics available are limited to gender. Do the authors have access to any other information about the candidate pool? Where they did their training? Number of anesthesiologists at each site (e.g. potential mentors)? Time spent training in anesthesia?

Introduction
1. The introduction seems to repeat itself at time, in paragraphs 2 and 4, you restate the objective of the study. Please address.

2. P3 line29. This sentence is confusing as presently written. Consider rewording/ simplifying it.

3. P3 line 34. You refer to the UKMCRG without defining what the organization is (it is spelled out in the paragraph that begins on line 47/48. Please define the abbreviation the first time that it is used.

4. P3 Lines 51-55, this seems like information that would belong in the methods section. Consider restating that this is a longitudinal cohort of UK graduates or something to that effect, without introducing the individual numbers and percentages in each year.

5. The last paragraph of the discussion seems like it belongs best in the discussion, not the introduction of your paper.

Methods:

1. I think that it would be useful to the non-UK trained readers to explain when these exams are taken, when students are exposed to different specialties, and when specialty selection needs to be made.

Results:

1. The results section is quite numbers heavy. In general, if a number is available in a table or figure, I do not suggest presenting it in the written text of the results section as well. If one or two of these are important for emphasis, that is fine, but the volume of numbers in the results section make this section difficult to read.

Conclusions:

1. The authors put a great deal of emphasis on the definitiveness of interest in anesthesia, yet, perhaps this reflects exposure to anesthesia. It would be difficult for a student that is not exposed to anesthesia to be definitely interested. If a focus is placed only on those that are fairly certain that they want to enter the field, then a large number of interested students may not be developed.

**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.

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