Reviewer's report

Title: Who Wants to be a Surgeon?

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Reviewer: Michael J Goldacre

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General

Much better, but still needs some attention to detail. The authors have one really useful finding - the fact that, at least in their medical school, even at the very beginning of medical school a much lower percentage of women than men express a preference for an eventual career in surgery.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Study limitations, paragraph 3, first few sentences: Firstly, the authors are muddling up the concepts of 'statistical significance' and whether their findings are representative of a wider population beyond their medical school. These are not the same - findings can be hugely statistically significant but also very unrepresentative. Secondly, the authors are simply wrong where they state that "if the actual numbers were larger...chi-squared would not be altered". It would: the bigger the sample, the greater the statistical power, and therefore the value of the chi-square would increase.

Study limitations, paragraph 3, last sentence: The two clauses, linked by the word 'so', simply do not follow. On all these points, I think that the authors are making difficulties for themselves by trying to explain too much. My advice is to keep things simple, drop this paragraph, and replace it with a single sentence that just acknowledges that the ethnic/gender composition of this medical school may not be wholly representative of medical schools across the UK.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. Table 2: It is not particularly conventional to set out the working of a chi-square in a table for publication; and, if the authors do this, the title needs changing - the table doesn't show the chi square, it shows the numbers on which the chi square calculation is based. Better to omit the table and have a sentence in the text that says something like: "Surgery was chosen by 50% of the men (58/115) and 18% of the women (33/185; chi square 33.7, p<.001)." That says it all.

2. Table 3 needs re-consideration. The authors give more detail than necessary on the steps in the calculation of the chi square values and yet the overall messages from the table are unclear. The readers are left to themselves to work out what the 35.7, 2.0, and 4.5 values mean. The comparison between men and women is dealt with above, and doesn't need to re-appear in another table. The comparison between graduate and non-graduate entrants (presumably this is what the column 'Post Grad' means) can be dealt with similarly in a sentence in the text. What's left is the ethnicity comparison which could be handled in a much smaller table, or in the text. And the decimal places (all .0) in line 2 ('not surgery') must go - these are counts of 'observed numbers' of people and must be whole numbers by definition! Incidentally, all the steps in Table 3 could be calculated by the interested reader from the data in Table 1, so, if the authors dropped the detail of Table 1, it wouldn't really matter.

Discretionary Revisions (which the author can choose to ignore)

1. There are some minor inconsistencies of style in:
   a) the use of capitals eg General Practice with and without capital G or P; b) unnecessary capitals that do not start a sentence, eg Non-white, None; c) spellings of specialty and speciality; the words used to
describe ethnicity - 'ethnic' is ok, 'ethnographic' means something slightly different, and I'm not sure that 'ethnical' is a real word. The manuscript needs a really good 'proof read' for consistency.

2. You might consider putting the setting in the subtitle of the paper, eg "...of 300 first year medical students in London".

3. Penultimate paragraph of Results: the word "apparent" doesn't add anything ("apparent significant") and the following word should be "significance".

4. Conclusion, paragraph 2: I don't think that 'confounding' is the right word. Do the authors mean that their findings conflict with those of others?

5. Table 1, title: The word 'actual' isn't necessary, and I suggest changing 'frequency' to 'numbers' at the top of the first part of the table.

What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

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

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests