Reviewer’s report

Title: Assessing the preparedness of Foundation Year 1 (FY1) doctors during the transition from medical school to the Foundation Training Programme

Version: 3 Date: 02 Dec 2019

Reviewer: Andrew Hughes

Reviewer’s report:

Note: I have not seen the questions the previous reviewers put forward, only the replies. As such some of my comments may be a repetition of those reviews.

Overall I do not think this paper adds to the field of knowledge in this area. In addition there are a multitude of inconsistencies and misinterpretations of data. Regrettably I think this manuscript should be rejected particularly as I assume the version I read was a redraft following earlier reviews. Whilst there are other minor points I will only detail the ones which support my decision to reject the manuscript.

Author affiliations - I am unclear of the link between all the authors (who are from the University of Nicosia Medical School, Cyprus) and the South Yorkshire Foundation School. Does one or more of them also have a role in the UK?

Response to reviewers (point 2) alludes to a 'strengths and limitations' section but no sub-titles in the manuscript exist.

Methods

Online survey was send to FY1 doctors in 4 hospitals in the South Yorkshire region - it is important therefore to include the total number of doctors that received it and perhaps a breakdown by site. Denominator data is one way to determine if the response rate is likely to be representative. The site breakdown would also give an indication of whether there is a bias in responses and if the 'health systems' which are asked about are unique to each site.

Confidence vs competence - which is this study measuring? The conclusion and 0-6 scale suggest the former but elsewhere it suggests the latter. One could argue that medical schools are tasked with reaching a competence threshold (they work within an 'outcome based education' (OBE), or competency based medical education (CBME) framework). This is mentioned in the background section (lines 78-80): "junior doctors are expected to be competent … from their first posting". The threshold for confidence is considered to be higher and may never be reached until students start practicing as doctors. It may seem like a philosophical point but I raise this because the terms are used interchangeably throughout the manuscript (see lines: 57, 60, 63, 141, 179, 186, 215, 232, 311, 381). This was even the case when describing the 0-6 scale items with both competence and confidence being used in the description of '0' (line 26 vs 548).

Survey construction - AMEE guide 87 provides an overview of how to design surveys. Whilst some steps were taken to ensure completeness and coherence there are a number of significant omissions.
Firstly, given the amount of work previously published in this area (as detailed in the background section) why was there not a search of the literature to ascertain if there was a validated questionnaire that has already been used? Adaptation of an existing, peer reviewed, questionnaire would surely be the first place to start. The librarian would normally be used in this regard rather than just to check language/clarity etc. Also, what steps were taken to ensure items were interpreted correctly given that different hospitals had different 'systems'?

0-6 scale - a major flaw is the scale the authors constructed. I think this also leads to confusion when interpreting the results. This was a 6 point scale, not a 5 point one: 0, 1, 2, 3, 4, 5. Therefore you might assume the midpoint would be between 2 and 3 or even 3 itself (for a perceived 1-5 scale). However, looking at the description of confidence the threshold for feeling confident is actually 4 on the scale (4 = confident, doctor has occasional doubts; 3 = adequate, doctor doubts him/herself more often than not - which I would argue is not 'adequate' or demonstrates confidence). This is a negatively skewed scale meaning the results were interpreted incorrectly: only scores of 4 or more (together with a lower cut off of the 95% CI above 4) can be deemed to show 'confidence'. This is further complicated by varying definitions of each item on the scale (see competence vs confidence above). As such the statements in the conclusion (line 453) cannot be supported: only 11/38 of tasks have a value above 4 (with 95% CIs that do not cross below 4). I believe a median value above 4 is needed to support the statement (line 453-454): "The majority are confident in their practical skills..." (not a mean above 4).

Cronbach alpha - At no point is there an explanation of why 'internal consistency' was important to calculate. The value tells you if there is 'acceptable' or 'good' internal consistency but I don't know what this means with regards to this specific survey. There is suggestion that the authors similarly struggled with this statistical test: several alphas were negative values which suggests data error, explanations of Cronbach alpha were generic rather than interpreted in the context of this specific survey (e.g. 398-399, 434-440) and an additional term ("acceptable consistency") was used in place of internal reliability (line 432). Also, when there was questionable (&lt;0.7) or unacceptable (&lt;0.5) internal consistency its significance was not mentioned when stating mean confidence scores/95% CIs.

Other minor issues...

Inconsistent numbers - there are differences between the value in the tables and those quoted in the text e.g. lines 377, 382, 412.
Free text responses should be described in the results section and not presented for the first time in the discussion (lines 352-372). This should also be the case for the statement about the t-test statistical significance (lines 404-407).

Line 365 - misleading: "Overall, the respondents found that induction was more useful than the assistantship", this is not how it was asked in the survey. FY1s were asked, separately, if they found the induction useful and then if they found the assistantship useful. They were not asked to compare the 2 and decide which was 'more' useful. Some respondents would have deemed both to be useful.

Line 419-420 - "the low scores for these individual tasks skewed the final mean score for..." - actually the anomaly in this section is the mean score for IV cannulation (4.317) which was 0.73 above the next best score (3.585). So you could argue this skewed the final mean score in the opposite direction.
Are the methods appropriate and well described?  
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?  
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?  
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No

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