Author’s response to reviews

Title: Predicting medical students who will have difficulty during clinical training

Authors:

David Jardine (david.jardine@cdhb.govt.nz)

Jan McKenzie (ja.mckenzie@otago.ac.nz)

Tim Wilkinson (tim.wilkinson@otago.ac.nz)

Version: 1  Date: 28 Jun 2016

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Dear Dr Hu

Editor, BMC Education

Thank you very much for your helpful comments. I have answered them in order and referenced the changes in the new version of the paper.

1. Please clarify, with formal correspondence, if possible, that the use of this assessment data did not require ethical approval from Otago University, or the appropriate ethical review body. For example, on page 7 line 32 it states that students were asked their ethnicity - was this already collected administrative data, or collected for the purpose of the study?

2. This appears essentially to be a retrospective cohort study design. Could you please provide, ideally with a table or flowchart, the numbers of students in each arm of the "study" from the total possible (203 from 561) and how many students possessed the predictive factors being studied? Were all students followed up until graduation or exit from the course? There any other clues that students were "strugglers" prior to being awarded a CP grade?
This would also make it easier results such as on page 10 that "UMAT 2...predicts some communication problems..." which appears to be a key finding, but only applies to a small sub-group of students in the study.

3. Address in the Discussion section limitations such the study only being based on students from one teaching site, not comparing results or student characteristics with students who never awarded CP grades. That is, how representative were the students in the study of students at Otago, or elsewhere?

4. More clearly present (a) course description in Context section and (b) Results sections in flowchart or diagram, and tables, respectively. The discursive description can be hard to follow.

5. Review use of language such as "high risk" for an HR of about 2 - it's more accurate to say twice the risk. Likewise the use of "lower risk" for HR = 0.90 (0.98-1.0). This could be interpreted as overstating the results. ESL is not the same as being in a minority ethnic group; one could belong in the latter group but speak English at home.

1. Ethical approval for the study. We obtained ethics approval for tracking student outcomes based on selection measures, of which this study is a subcomponent. Furthermore this was an observational study and individual and identifiable students’ results cannot be discerned from the data.

2. Study design. We agree it is retrospective cohort in that students were divided into 2 groups based on their performance in clinical years [study group n=203, control group n=358] and then data previously collected on all students was used to look for predictive factors. Therefore our analysis included all students [n=561] who completed all or part of their “advanced learning” at
our clinical school [P6, L18]. We think that the information in “methods” [P8, L1-10] and in tables 1 and 2 summarise this. Please note that the number of students with each predictive factor is listed in the column headed “n” in table 2. Not all students were followed up until graduation because we only undertook a 5-year analysis and this included students at various stages of their clinical training [years 4 to 6]. This is explained under sections “data collection” [P8, L1-5] and “results” [P8, L32-33]. In Christchurch, clinical course supervisors do not routinely view the students’ previous academic records and are not involved in the “early learning” [years 2 and 3] part of their training. Therefore CP grades were awarded purely on the basis of their module assessments during “advanced learning”. This is now stated in “methods” [P6, L20].

You refer to the finding [P9, L31] that a higher mark in paper 2 of UMAT [understanding people] is protective for communication and professional behaviour related problems later during clinical training. This is important and statistically significant because it is based on data from 396 students [out of the 561 total] who sat UMAT [P17, Table 2].

3. Limitations of the study. You are correct that this study only relates to students at only one “clinical” campus [out of 3] over a 5-year period and we have now listed this as a limitation [see discussion P12, L22]. However we emphasise that we used data from all students at this campus [n=561] as stated above. Therefore the data are representative of all students at the campus studied and we would argue, probably representative of students at the other 2 campuses because there is broad alignment of clinical curriculum and assessments.

4. We appreciate that the chronological arrangement of the course, the assessments, and how the students were divided into “study” and “control groups” might be understood more easily with a flow diagram and have included this in the paper.

5. We have changed the language in “results” as you have suggested in order to avoid “overstatement” [P9, L33; P10, L2].

We agree that ethnicity is totally different from “English second language” and have stated this clearly in “methods” [P7, L24-30] and “discussion” [P11, L1-5]. Furthermore we emphasise in the limitations paragraph that language was not assessed specifically [P12, L15-20].
David Jardine

On behalf of the authors