Author's response to reviews

Title: Medical School Attrition In Ireland - Beyond the Statistics A 10 Year Retrospective Study

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Author's response to reviews: see over
Dear Mr Alcroft,

Thank you very much for sending me the reviewers’ detailed comments - we found them extremely helpful and consider that their excellent suggestions will strengthen the paper. We have addressed all the issues carefully and have edited and re-written the relevant sections of the manuscript. We hope you find our amendments satisfactory and are happy to consider any further revisions you may wish us to make.

**Reviewer 1**

**General Comment** – ‘My main concern is that the current paper appears to be a local (faculty) policy paper instead of an international article publishing new results. The authors do not make clear what this study does add to what is known already from international literature. The authors also did not explain clearly why their study should be of interest to an international group of readers. This feeling is strengthened by the practical suggestions at the end: they are mainly focused on the local situation.’
Reply:

The article has now been re-written to shift emphasis from a local focus to an international focus, consequently making a more effective contribution to the international literature on dropout. New results are highlighted, and we explain how they might be relevant at an international level. We outline the relevance of our results to other institutions and why we consider that our results are transferable to other medical schools. We have expanded the ‘Background’ previous research findings section, adding more details on current knowledge on medical school attrition and have also added another section titled ‘What this Study Adds’ so that the relevance of our study findings is framed in an international context.

The practical suggestions at the end have been re-written without any reference to the local situation and with a focus on the international perspective.

Replies to Detailed Comments

Point No 1. Background Section.

The Background section has been re-written and attention directed to a more global audience and relevance. The opening sentence has been replaced by ‘Throughout the world, places in medical school are highly-prized with a large number of applicants applying for a limited number of places.’

References to the host institution and local references have been omitted to shift attention away from local situation.

The paragraph on the importance of dropout has been expanded to give more details on why dropout is important – these are issues common to medical schools all over the world, hence we felt extra emphasis was necessary. A new paragraph has been added to the end of this section highlighting the importance of, and need for, studies
researching medical attrition.

The original paragraph ‘Objectives’ has been replaced by a new paragraph on study objectives which frames the aims of the study in a more international context. The ‘Objectives’ paragraph has been moved to the end of the section ‘Medical School Attrition – Current Knowledge’ as we felt that this paragraph was a better fit in this location.

We have omitted ‘overall medical student attrition rate’ as a main study objective, as attrition rate is usually automatically calculated as part of any attrition study and the attrition rate is of more local concern than international concern. Changes in dropout rate, however, are important, and these are discussed in the appropriate sections.

As suggested, we have moved the section on ‘Medical Programmes at UCC’, ‘Two-Year Rule’ and ‘Student Welfare’ to the Methods section. We have placed this information in Box 1, in order to delineate this localised information from the main article.

2nd Point - Medical Student Attrition – Current Knowledge.

This section has been re-written to include more detailed information on factors associated with attrition that have been studied in international studies, and also questions we sought to answer in our study that hadn’t been addressed in other studies and why we considered these important.

One of these was the impact of change in curriculum, which previously hasn’t received much attention. The other was the effect of dropout on individual students. Paragraphs have been added/edited highlighting why these results might be of interest.
to an international audience.

Two new sentences have been added to the end of the first paragraph highlighting the relevance of our research questions. In the ‘Gender’ section, a new sentence has been added highlighting the need for further study in this area.

In the ‘Ethnicity’ section, a new sentence has been added commenting that medical schools are increasing their intake of international students, thus increasing the relevance of the effects of ethnicity on dropout for all medical schools.

A new paragraph on ‘Social class’ as a factor has been added.

**Academic difficulty**

A new sentence has been added to this section highlighting the fact that there are very few studies that have analyzed in any detail the relationship between repeat examinations and repeat years in medical students who drop out.

**Social isolation**

Two new sentences have been added at the beginning of this paragraph describing previous research in this area.

**Curriculum**

Three sentences have been added to this paragraph pointing out the lack of research on change of curriculum on dropout and highlighting this area as one of our study objectives. One of the sentences explains that we had the opportunity to compare dropout in school-leaver medical students with Graduate -Entry medical students
taught by the same faculty and with the same facilities.

A summary paragraph was added at the end of this section.

**Point No. 3**

Research questions (Study Objectives) are now listed at the end of the Background Section as suggested.

**Point No. 4**

The Methods section has now been re-structured as recommended by the reviewer (context and participants, instruments/variables, procedure, analysis).

**Point No. 5 - Variables**

We have re-written this section in the Methods section to explain that we chose a selection of variables based on the variables studied in international studies on medical attrition (i.e. age, gender, country of origin, type of programme etc). We also carried out qualitative analysis of student files to study the effect of dropout on individual students. During our pilot coding of a sample of charts, we encountered recurrent issues in the personal accounts of students who dropped out, including absenteeism, social isolation, leave of absence, homesickness, English fluency problems and we decided to add these to the dataset. A new paragraph has been added to the Methods section to explain this. Because our study had a large qualitative element, and one of the study aims was to look closely at the personal stories behind dropout, we considered that the inclusion of these variables, whilst perhaps not amenable to statistical analysis, would give valuable information about the students.
who dropped out.

**Point No. 6**

**Exit interviews and staff interviews.**

A new paragraph explaining the treatment of exit interviews has been added at the beginning of the section ‘Exit Interviews’. A new paragraph giving more detailed information on the analysis of exit interviews was added at the beginning of the section titled ‘Qualitative analysis’.

**Point No 7**

**Identification of variables**

Sixteen new sentences have been added to the section ‘Procedures’ explaining in detail how coding was done and how instructors were instructed in the process.

**Point No. 8**

**Addition of variables.**

This is already addressed in our answer to point no 5. It was only on close file analysis that we realized that there were some variables that appeared in many of the personal student accounts. We decided to add these variables to the dataset, whilst acknowledging that whilst these variables were not suitable for statistical analysis, the prevalence of these variables in students who dropped out would be of interest and could add to a better general understanding of students who drop out of medical school.

With reference to our comment that issues like depression, eating disorders and substance abuse are likely to be under-reported, this makes our high finding of
psychological illness even more worrying as actual prevalence may be even higher than this. Other dropout studies have also similarly acknowledged that these conditions are likely to be under-reported.

**Point No. 9**

**Discussion**

This section has been rewritten to place more attention on how our findings relate to medical schools internationally. The section begins with a list of key findings and then continues to discuss the findings in the context of previous international research findings. A new paragraph has been added to the section on Ethnicity explaining why the dropout rate of Malaysian students may be relevant to other studies.

**Point No. 10**

**Statistical analysis**

The statistical analysis we performed yielded some important results including a country-specific statistically-significant effect of country of origin on dropout. Whilst many variables were not amenable to statistical analysis due to lack of information about prevalence in the entire medical student populace, our finding of a high prevalence of some of these variables in the dropout population was important and could prompt the inclusion of these variables in future studies in other institutions, and, at the very least, put these items ‘on the radar’ for faculty in all medical schools to help earlier identification of at-risk students.

The qualitative analysis conducted on transcribed student interviews (exit interviews, staff-student interviews and student correspondence) allowed the identification of key themes (despair, isolation, regret) experienced by dropout students and gave important
insight into the effect of dropout on individual students.

**Point No. 11**

**Implications for Future Policy and Research**

This section has been re-written with focus changed to a global audience and on interventions that could be adapted internationally.

The suggestion re peer mentoring and support and organization of alcohol free events has been deleted.

The following text additions have been made:

- Seven new sentences have been added at the beginning of this section, discussing the importance of institutional factors in dropout, the nationality-specific effect of ethnicity on dropout and the importance of exit interviews in medical school attrition research.

- Three new sentences discussing Student Welfare services have been added at the end of the paragraph on Student Welfare.

- A new paragraph has been added on mental health services.

- A new sentence has been added re ongoing student health issues and Fitness to Practice considerations.

- A new paragraph has been added on educational interventions.

- A new paragraph has been added on the role of medical schools in assisting dropout students when they leave.

All the above are general recommendations aimed at an international readership.
Reviewer 2

Point No 1
Definitions
The terms ‘Direct Entry’, ‘Graduate Entry’ and ‘mature’ Entry programmes have been explained and added to Box I (Medical Programmes at University College Cork). We now use the term ‘school leaver’ throughout the article as we understand that the term ‘Direct-Entry’ may be confusing.

Point No 2
The term ‘dropout students’ rather than ‘students’ is now used consistently throughout the text i.e. ‘percentage of dropout students’, ‘forty dropout students’. This has been corrected in the paragraph on academic difficulty in the Results section and throughout the text.

Point No 3
For clarification, we have added all the relevant tables to the paper and explained their content in the relevant sections of the text.

To clarify:

Table 1. Data Recorded for each Dropout Student.
Table 2. Dropout Rate Completed Cohorts (2002-2007) – (dropout rate calculated on 6 completed cohorts).
Table 3. Five-Year Completed Cohort 2002-2006 - this shows statistical analysis for variables in 5 successive cohorts that began medicine 2002-2006. This figure of 40 includes all the students who dropped out, including those who transferred to study medicine elsewhere.

Table 4. Five Year Completed Cohort 2002-2006 (excluding transfers).
The total number of dropout students was 34 - the six students who transferred during this period were not included in statistical analysis.
Table 5. Ten Year Dropout 2001-2011. Statistical analysis of the total number (81) of dropout students during this 10 year period.

Table 6. Ten Year Dropout 2001-2011 (the 11 students who transferred were excluded from analysis giving a total number of 70 dropout students). Qualitative analysis was carried out on this group.

Table 7. Dropout and Year of Study - Five Year Completed Cohort. This table shows in which year of programme dropout occurred.

Table 8. Factors associated with attrition from the Medical Programme 2001-2011 (excluded students who transferred).

Discretionary revisions

Based on the reviewer’s suggestion that a strength of the study lies in ‘analyzing reasons for drop-out associated with students (nationality, health, academic performance etc.) on a large cohort of students using a combination of qualitative and quantitative data’, we have highlighted this as a strength of the study.

Regarding the ‘when’ of dropout, we have added a detailed section discussing the explanations behind reasons for dropout in the early part of the programme and dropout in the late part of the programme.

Regarding the ‘when’ of dropout against a background of institutional change, we have re-written this in order to more carefully explain our results relating to change in curriculum on dropout and we have included possible explanations for our findings. We have also attempted to more clearly relate the data regarding the ‘when' and 'why' of student attrition. While we found a transient small increase in dropout immediately after the introduction of a new curriculum, this was only a modest effect and may not have been related to change in curriculum, suggesting that actual change in curriculum does not have any significant adverse effects on the student experience which may contribute to dropout.
To date, the Graduate Entry medical programme has a lower dropout rate, but only one cohort of this programme has graduated so far. Higher numbers of students in future dropout studies will allow for more effective comparisons between dropout rates in school-leaver versus Graduate-Entry programmes.

Similarly, it is too early to say if change in selection methods has affected dropout rate, as the first cohort admitted under the new selection methods will not graduate until 2014. However, dropout rate is declining (however, this may be related to other factors).

Thank you very much for your consideration of these revisions and I look forward to hearing from you,

Best Wishes,

Dr Bridget Maher