

Medical Students' Views on Selection Tools for Medical School - A Mixed Methods Study

Abstract:

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Abstract

It is important to ensure that the tools used in Medical School selection are acceptable to students and applicants. A questionnaire was administered to year 1 medical students in 2010 to determine the suitability of a variety of selection tools and the acceptability of HPAT-Ireland in particular. There were 291 respondents a 77% response rate representing approximately one third of all school leaver entrants that year. While the majority 285 (98%) were in favour of using school leaving examinations there was also support for the use of interviews 215 (74%) and other tools. Three quarters of Irish respondents 159 (76%) agreed that HPAT-Ireland is a fair test overall however section 3 (non-verbal reasoning) appeared less acceptable and relevant than other sections. A little over half had taken a preparatory HPAT -Ireland course 112 (54%).

Medical school applicants appear to accept the use of non-traditional tools in the selection process.

Introduction

Selection of medical students is a complex and emotive issue. Selection tools must be feasible; economically justified and acceptable to stakeholders. They must also enable the rank ordering of applicants in a meaningful manner. Most importantly they must be credible, fair, valid, reliable and publically defensible. Research has led to the development of new selection approaches however the perfect selection tool(s) remains elusive. In Ireland there are a number of entry routes to medicine, each with its own set of selection criteria. The selection tools used differ depending on the country of origin of the applicant, whether they apply to undergraduate or graduate programmes, or as a mature entrant.

Irish medical schools admit students from diverse backgrounds and there is a strong tradition of non EU entrants pursuing medical education both as private and government sponsored students. The globalisation of medical education means that movement of applicants between countries is increasing. Consequently Irish medical school applicants are aware of the selection tools used internationally. Since 2009, much of the focus on medical student selection in Ireland has centred on the Health Professions Admissions Test-Ireland (HPAT-Ireland). All EU undergraduate medical school applicants must take this test. HPAT-Ireland is a 2 hour multiple choice paper with three separate sections which are: 1. Logical Reasoning and Problem Solving; 2. Interpersonal Understanding and 3. Non-Verbal Reasoning (ACER 2013). It is similar to the Undergraduate Medicine and Health Sciences Admission Test (UMAT) which is widely used in Australia and New Zealand.

A recent General Medical Council (UK) report on best practices in medical student selection highlights the importance of stakeholder acceptability. One study examining the acceptability of HPAT-Ireland to GPs found that while almost 70% of GP respondents supported the use of tests such as HPAT-Ireland, a much higher proportion (97%) supported the traditional academic tool or Leaving Certificate. Two previous studies also raised questions about the acceptability of HPAT-Ireland. Students form an important stakeholder group. Positive student reaction is a key evaluative measure of the quality of a selection tool. There is little published work exploring student opinions on selection tools to medicine in general and none to date with respect to HPAT-Ireland specifically. The aim of this study therefore was to establish the acceptability to medical students of a range of selection tools and in particular to explore the acceptability of HPAT-Ireland.

Methods

The study employs a mixed method embedded research design which allows the collection and analysis of both quantitative and qualitative data within a traditional qualitative or quantitative research design. The qualitative arm was the minor part of this study. As no standardised instrument was available, a questionnaire was developed comprising three sections. These collected demographic information, data on the fairness and suitability of a variety of selection tools and a final section was restricted to medical students who had sat HPAT-Ireland and explored opinions on its suitability, fairness, design, level of difficulty and the role of preparatory courses. Quantitative data was gathered through a combination of closed questions and Likert scales to incorporate a degree of sensitivity and differentiation of responses. Qualitative data was gathered by open ended questions and comment boxes. The questionnaire was piloted and minor modifications made. Ethical approval was granted by the Clinical Research Ethics Committee of the Cork Teaching Hospitals.

Five medical schools were invited to participate and three agreed. The questionnaire was administered locally during a scheduled large lecture slot in 2010. All first-year medical students were included in the study and the only exclusion criterion was absenteeism on the day of administration. Quantitative data were analysed using SPSS 17.0 for Windows (SPSS, Inc., Chicago, IL, USA). Qualitative responses were transcribed into Microsoft Word for windows (<http://www.microsoft.com>) and thematically analysed, by one author (LS). These thematic groupings were simply reported as is acceptable when the qualitative arm is the smaller part of a mixed methods study.

Results

The response rate was 77% (n= 291). Response rates per school were TCD 71% (n=97), NUI Galway 98% (n=120) and UCD 62% (n=73). The total number of respondents represents just over one third of first year medical direct entry medical students nationally that year. The demography of respondents is as follows ;71.5 % of Irish nationality, 56.7% female, 68.5% had entered from public as opposed to private secondary education and the majority (85%) had entered medicine directly from second level. There were 489 free text comments. Table 1 lays out the broad themes into which these comments were categorised with example quotes.

Respondents' views on the suitability of various selection methods are presented in Figure 1. Students find the use of knowledge based tests acceptable but high proportions (78%) are also in favour of the use of interviews (78%), personality tests (74%) and adjunct admission tests (68%). Interviews were seen as an appropriate means to assess character, determination and motivation and to enable one to gauge if a person's attitude is right for the course. Female students were significantly more likely to agree with the use of personal statements (p=<.01), personality tests (p=0.03) and references (p=<.01) than males.

Non-EU students were found to agree more with the use of interviews (p=<.01), knowledge about a course (p=<.01), references (p=<.01) and personal statements (p=<.01) as suitable criteria for student selection than Irish students. Conversely, Irish students were more likely to agree with the use of specialised admission tests such as the HPAT-Ireland than non-Irish respondents (p=0.04). Medical students who had attended a private secondary school were

significantly more likely to agree with the use of tests such as HPAT-Ireland ($p=0.03$) and less likely to favour references ($p<.01$) than those who attended state schools.

Section C was completed by those students who had sat HPAT-Ireland (60%; $n=175$). Three quarters (76.5%, $n=134$) agreed that HPAT-Ireland is a fair test overall. However just over one third (36.7% $n=64$) felt that it was easier for males because a logical abstract reasoning is probably easier for males as spatial awareness is typically a male quality. The majority of respondents agreed that the HPAT-Ireland questions were well designed and relevant (70%, $n=123$). The relevance of sub-sections 1 and 2 of HPAT-Ireland to the study of medicine was broadly agreed upon (81%, $n=142$ and 88%, $n=154$ for Sections 1 and 2 respectively). However, one third (32%, $n=56$) felt that section 3 was not well-designed. Respondents were not really sure what the point to Section 3 was and many described it as irrelevant. In terms of difficulty, 49% ($n=83$) felt it was a difficult test, whereas 41% ($n=69$) felt it was manageable. A little over half of students had taken a preparatory course (54%, $n=91$). Of these 79% ($n=70$) felt it had a positive effect on their HPAT-Ireland performance and 49% ($n=75$) would recommend a preparatory course to a friend.

Discussion

This is the first study to report medical student opinion of selection tools to medicine in Ireland. The demographics of respondents are representative of the demography of medical school entrants nationally. The response rate is acceptable for a questionnaire based study and captures opinions of approximately one third of school leaver students in Year One Medicine at the time of survey. One limitation of this study is that three of the five undergraduate medical schools were represented. All were invited to participate but some declined, in some cases because students were on study leave at the time the questionnaire was administered. This study also only examines the perceptions of those who were successfully admitted under the new entry system and does not establish the views of the applicant pool. Therefore, results and conclusions need to be interpreted with these limitations in mind.

The most acceptable method of student selection among respondents remains school leaving examinations. This position reflects the opinions of Irish GPs and evidence attesting that prior academic achievement best predicts performance in medical school. However this does not take account of the limitations of such tests. Respondents strongly agreed that aptitude tests and interviews are suitable for selecting medical students. This suggests that students themselves feel there are other traits that need to be considered when selecting for a career in medicine that are not measured by school exit exams. It is interesting that non-EU students, who do not speak English as a first language, were in favour of interviews, a medium in which they could theoretically underperform. Interviews have a mixed record in terms of their validity and reliability in predicting future performance of medical students, with the general consensus being that they are not a very robust tool.

However if highly structured interviews, with interviewer training and explicit rating guidelines, are used much better outcomes are observed. Multiple Mini Interview is an example of this approach. Recent reports of its predictive validity and acceptability to students are encouraging. Twenty per cent of those who completed HPAT-Ireland felt it was unfair test which is an area of concern. There was a strongly perceived gender bias, with one third of students agreeing that it is easier for males. Students' perceptions may have been influenced by some of the strong media attention which surrounded the introduction of HPAT-Ireland. Revised entry and selection mechanisms may have inadvertently altered the gender distribution in medical school but a number of factors have contributed to this and it is not entirely attributable to the HPAT-Ireland test.

One fifth of students disagreed that HPAT-Ireland was well designed and relevant, however the acceptability of the test sections differed and in particular 32% felt that Section 3 is irrelevant and poorly designed. It is interesting that GPs had a similar reaction. The type of item in this section is common to many admission tests and corresponds to the abstract reasoning section in UKCAT for example. The defence for inclusion of such items is that medicine requires pattern recognition skills to enable problem solving and information sifting. Our data suggests that students are not convinced. Predictive validity data confirming that the hypothesis underpinning their inclusion in high selection stakes tests selection is lacking. Of more concern is evidence that this Section is most amenable to improvement by coaching a finding mirrored in the UMAT. Recent moves to reduce the weighting afforded to this section may alleviate applicants' concerns. Uptake of preparatory courses was high which is understandable due to the novelty of HPAT-Ireland. Seventy per cent felt the course positively affected their performance and overall 49% of those who sat the HPAT, regardless of whether they took a course or not, would recommend a preparatory course. This may represent a significant barrier to socially disadvantaged applicants.

This is the first evaluation of students' acceptability of a newly reformed entry and selection mechanism in Ireland and the experience may be of interest elsewhere. Students, regardless of background, endorse the use of school exit examinations but also the use of interviews. Acceptability of specialised admission tests is mixed with students expressing concern about gender bias and the use of certain item types.

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