Medical student selection - time for change: discussion paper

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We are partners in a teaching practice. Over a period of time we have become aware that some medical students and young doctors lack motivation and commitment and this has caused us to speculate about the original selection process. In the United Kingdom, medical student selection is based on the information contained on UCCA forms (Universities Central Council on Admissions) and usually an interview. By contrast, a young man expressing an interest in a short service commission in the British Army is subjected to a prolonged selection procedure. This can include a preselection two month course, a three day selection board (Regular Commission Board), three month outward bound type course, and continuous assessment whilst an Officer Cadet with the option of discharge at any time. Compare this with the often perfunctory procedure applied to the medical student 'commissioned' for life. The contrast is startling and the insight contributed to our interest in the problems associated with the selection of medical students.

Our background experience

In order to gain experience we attended the following either jointly or individually: The Regular Commission Board (RCB); the Civil Service Selection Board (CSSB) and the selection of new pilots for British Airways. In addition we were observers at selection interviews at three London and two provincial medical schools and one of us visited an Australian medical school. We also attended the following courses: a three day selection and interview workshop run by management consultants and an Institute of Education course on entry to medical schools. In addition we sought advice from the General Medical Council and many psychologists and other professionals involved in the selection field. We also sought opportunities to talk to Deans, academic staff and medical students. We submitted ourselves to a battery of personality and psychometric tests employed by British Airways and British Rail in order to gain insights into their usefulness. It is on this experience and a review of the literature that we base our subsequent comments.

Selection procedures

UCCA forms

Because the UCCA system allows each applicant five choices there were in 1987 about 49,000 applications by 9750 applicants for 4047 medical school places[1]. Each medical school receives between 1400 and 3500 applications and most interview about 500. This indicates the size of the problem facing admission tutors, a problem now compounded as candidates are no longer allowed to state an order of preference and thus one commonly used discriminant[2] has been eliminated. The necessary process of reduction has intrigued and perplexed us.

Under the present system the initial reduction has to be made solely on the information contained on the UCCA form. This provides three sources of information: the candidate's statement of interests and achievements; a detailed account of examination results, actual and predicted, and the Head Teacher's report. In one medical school we observed, the reduction was originally done by the administrative officer, then use was made of a computer and now the task is reluctantly undertaken by individual consultants. In another medical school more than half the students categorized by the Dean as 'probably not interview' or 'definitely not interview' were ultimately accepted elsewhere[3]. Almost all the candidates we witnessed had done community or hospital work and we detected the influence of school advisers behind such zeal. There must also be disquiet about the undue emphasis placed on the Head Teachers' reports[4,5]. Some seemed candid and fair, but all had a vested interest in the success of their pupils. Many candidates came from Sixth Form Colleges where we suspect the Principal had scant personal knowledge of the individual; this sort of information should have a supplementary rather than a central role in the selection process. This is how such information is used by the army, civil service and British Airways. We lack confidence in its role in the selection of medical students and the only solution must be a selection process which reduces the role played by the UCCA form.

School examination results

There is an underlying assumption that good achievement in scientific A-levels represents high intellectual achievement; in consequence actual and predicted school examination results are the major discriminant between candidates[6,7]. Paradoxically, pre-entry science examination results, whilst moderately good predictors of preclinical examination results, are poor predictors of subsequent clinical performance. This is a consistent finding from 1925 onwards[8-16]. The cognitive style of the physician is different from that of the scientist[16]. It is difficult, therefore, to understand the reliance British Medical School Selection Committees place on scientific achievement; it may reflect the dominant role of preclinical teachers in the selection process. If medical schools existed to produce only medical scientists this policy might be justified, but their primary function is to produce clinicians. In North America two schools have demonstrated that entrants with a non-scientific educational background do as well as, if not better

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than, those grounded in science[15,17]. It would make sense, therefore, to attach more importance at the selection stage to a high mark in an English expression examination or a test of critical verbal reasoning[18,19].

Liaison with schools

The demands made on the applicant by the medical schools have a profound effect on the content of the school curriculum. Careers masters need to know entry requirements several years in advance in order to advise and direct pupils. Disquiet has been expressed[20] at the lack of insight of medical schools into these problems. This has an immediate relevance with the introduction of the General Certificate of Secondary Education (GCSE) and AS level examinations.

The interview

Although short interviews may be reliable[21] (capable of yielding consistent results), there is no reason to suppose that they are valid (that the assessed and actual attributes of the candidate correspond). The widespread use of short interviews in the selection of medical students in the United Kingdom suggests that the authorities perceive them as useful. We do not share their confidence. Although a short interview, if carefully structured, may be better than none at all, it is unrealistic to suppose that it permits an accurate assessment of the candidate's attributes. Moreover, in two of the medical schools we attended, much of the brief interview time was devoted to promoting the school.

Evidence of lack of professionalism on the part of the interviewers in the television documentary about selection at St Mary's Hospital (*Horizon: Doctors To Be* 30 June 1986) was confirmed by our own observations elsewhere. For example, in one interview session fifteen questions were asked requiring medical knowledge on the part of the candidates ('What is amniocentesis?' 'What are the causes of blindness?' 'Do you know anything about Alzheimer's disease?' etc.) Such questions are inappropriate in this context; they suggest that the questioner was more comfortable in a familiar 'viva mode'. At a different medical school three candidates from the same Roman Catholic school were asked how they would deal with a pregnant unmarried girl of 18 years of age requesting an abortion and if their religion would raise any difficulties. All three failed to gain admission. Such questions are perceived as being unfair by candidates and school alike and would have been avoided by trained interviewers. We observed interviews in the immediate aftermath of the unfortunate episode at St George's Hospital which was adjudged to be racially biased in its selection process[22]. We suspected that the findings of the Race Relations Board were sometimes influencing the selection process at other medical schools. On three occasions one of us felt reasonably certain that the candidates would not have been selected if they had not belonged to an ethnic minority.

The above examples would have been improbable if the selection process had been professionally administered.

Personality testing

An interviewer will form an immediate impression of the candidate based on demeanour, dress and response to questioning, but trained interviewers will resist premature judgments. Personality and psychometric tests claim to measure various aspects of intelligence and personality and to indicate to an interviewer areas which should be further explored. Such tests do not in themselves indicate whether a candidate will make a good doctor. Their use is widespread in industry. We ourselves took a variety of tests and were very impressed at the accurate delineation of our characters and by the consistency of different tests. They are easy and inexpensive to administer and mark, although some training is required. We suspect that medical schools are largely unaware of the potential usefulness of these tests.

Assessment centres

The RCB subjects all applicants to a prolonged selection process over three days. The candidates undergo psychometric tests, have several interviews, deliver a short lecture and are observed in a variety of group tasks. The CSSB has many similarities to the RCB, but the content is more intellectual and the number of original applicants is reduced by preliminary written tests. The British Airways selection procedure for new pilots was similar, but included aptitude tests and lasted for only 24 hours. This kind of prolonged observation of candidates in different situations by trained selectors makes the final corporate decision relatively easy. This contrasts with the brief interviews done by the medical schools where dubious decisions are often based on inadequate evidence. The experience of assessment centres is that early opinions may be suspect and that judgments should be deferred until all the relevant information has been amassed and assessed. We concluded that the validity of the selection process was a function of the time a candidate was observed in a variety of meaningful situations.

Deferred entry

All selection procedures have failures and the small drop-out rate in the first two years of the five medical schools that we visited seemed acceptable. The occasional loss of a senior student or a newly qualified doctor is more serious as each represents an investment of about £40 000[23]. More disconcerting was the evidence from our contacts with students that some were poorly motivated and suffering from stress illnesses. At one medical school, for example, out of 140 students in one year, four were said to have anorexia nervosa and two others had taken drug overdoses. We were told by our student informants that the authorities were aware of only one of these problems. Poor motivation and stress in some students is of much greater importance than the occasional drop-out for who can measure the true cost of the bored and troubled misfit? The medical schools we observed had neither the time, opportunity nor expertise to detect such potential problems at the selection stage. At one medical school the students seemed better motivated and contented and it was interesting that the admission policy ensured that about half had either taken a sabbatical year or retaken their 'A' levels and thus were relatively mature on admission. This would suggest that the deferment of entry for one year, for whatever reason, is a simple and economical test of motivation and that 'retakers' are underestimated[5]; further it is known that mature entrants perform better overall than school-leavers[16].

In the United States all medical school entrants are graduates and the Ben Gurion University in Israel favours 20-year-old entrants[24]. There is a strong case for the general adoption of deferred entry by British medical schools.

Discussion

An immediate, if unsatisfactory, partial solution to the problem of assessment is to improve what exists. There is no justification for interviewers being untrained. Interviewing is a skill and like all skills it must be learnt; in response to the needs of industry many organizations now exist which can fulfil this training role. There is no place for the casual recruitment of available medical school staff. Other possible measures are to lengthen the interview time, to ensure that the interview is devoted to assessment and not to promotion of the medical school, to have to hand the results of personality and psychometric testing professionally interpreted and the actual rather than the predicted A-level results. We doubt, however, if such a modified entry procedure would be much more satisfactory than existing ones; there is no real alternative to prolonged assessment. Prolonged assessment cannot be undertaken by individual medical schools which have neither the time nor the resources. It must be organized centrally whilst leaving autonomy to the individual medical schools in regard to the final selection decision. A comparable arrangements exists between the RCB and the different regiments of the British Army. The time has come to establish on an experimental basis a Medical Selection Board along the lines of the assessment centres of the Army, Civil Service and British Airways. Such a selection board could make use of the years of experience of these and similar organizations. There are, however, so many applicants for medical schools that, in the absence of preliminary screening such as is done by the Civil Service, a three day assessment is not practicable. Organizations such as British Airways have, however, demonstrated the usefulness of the 24 hour assessment centre, which is probably the best compromise.

If precedent is followed, candidates would do personality, psychometric and verbal reasoning tests, undergo two or three prolonged interviews and take part in a group discussion and other group activities. The Board could consist of a psychologist skilled in selection, a medical chairman and specially-trained selectors. The Chairman would ideally be a Dean, past or present, or an Admission Tutor. The trained members of the Board would be drawn from a wide spectrum of medical experience. We have costed the procedure at about £300 a candidate and clearly this would have to be met by new monies from the DHSS. It would be money well spent. The report and recommendation of the Board would be available for an interested medical school whose own short interview would then make sense.

Anderson and his colleagues have expressed surprise at the lack of research in the United Kingdom on selection procedures and their outcomes[25]. There is a need for pilot studies to identify what is actually happening at the moment and to explore the implications of any new selection procedures. The following areas deserve research. (1) What exactly is going on in British medical schools in respect of selection? Since there is no central coordinating body, no one knows. There is need for an observational study. (2) Who is undertaking the task of selection? What are their backgrounds, aptitudes and training if any? (3) How is the all-important initial reduction of UCCA forms undertaken in different medical schools and what are the determining factors? (4) How is the selection procedure perceived by candidates and by their schools? (5) What role does informed counselling by a good careers master play in the outcome of the selection process? (6) Who is dropping out of medical schools and at what stage? Are they identifiable at the selection stage? (7) There is an immediate need to institute long-term longitudinal studies to assess the outcome of present selection methods. (8) A feasibility study should be done to determine the composition, structure and role of a Medical Selection Board and if there is any place for preliminary screening.

Conclusion

Medical schools have failed to adapt to a changing society and to apply the cumulative experience of other professions in selection techniques. Those who select medical students are trying to do a difficult task with diligence and integrity, but present methods are arbitrary, illogical, poorly-researched and almost certainly unfair. Selection lacks any central direction or overall policy. The doctors involved are untrained in selection skills, preoccupied with everyday tasks and lack opportunities to plan policies and long-term evaluation studies. The present system might suffice for the selection of medical scientists, but is inappropriate for the selection of future clinicians. The current alterations in the school examination system afford an opportunity for change and experimentation.

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