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Selection of students to medical school

Any system of selection should conform to WFME guidelines

In the field of undergraduate medical education, the method of selection to medical school is the most varied and the most debated aspect worldwide. This variation indicates that there is no such thing as a perfect system of selection. Medicine has for long been the most popular profession, which highschool graduates aspire to. There are signs that the profession may lose this pre-eminent position in popularity stakes, but that is another matter. As long as the number of applicants to medical school exceeds the number of places available, selection is inevitable. In a Utopian world, all applicants who demonstrate their ability to benefit from a course and wish to follow that course should be afforded the opportunity to pursue their desires. However, we do not live in such a world, and socio-economic necessities dictate against such a practice.

A single perfect system cannot exist, as there are two facets to selection, educational and societal, neither of which can be ignored. They may sometimes run contrary to each other. The ultimate goal of selection to a medical school is to identify applicants who would contribute towards meeting the health needs of society in an effective manner. Thus societal needs must be taken into account in any system of selection adopted by a given country or a medical school. A survey of selection practices reveals, that most schools adopt a combination of academic merit and various other factors in deciding who should be admitted. Fewer schools depend on academic merit alone and even fewer on random selection from a pool of applicants who have met minimal requirements. Public opinion is unlikely to be in favour of random selection, but the dependence on academic merit alone also cannot be justified, for many other factors are relevant to the concept of a good practitioner.

In the absence of a perfect system the practice adopted by a given country or a school must conform to certain accepted educational principles and guidelines of a generic nature, if it is to be both fair and beneficial to the society it serves. Recognising the need for global variation in selection policies, the World Federation for Medical Education (WFME, 2003) laid down certain guidelines [1] which any selection system should follow. These include:

1. Enunciation of a clear admissions policy on the process of selection, including its rationale, method of selection and mechanism for appeal.
2. Periodic review of the admissions policy based on relevant societal and professional data, in line with social responsibilities of the institution and health needs of the society.
3. A statement of the relationship between selection, the educational programme and the desired qualities of the graduates.

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The Sri Lanka Medical
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Wijerama House

6, Wijerama Mawatha

Colombo 7

SRI LANKA

Tel: +94 11 2693324

Fax: +94 11 2698802

Internet home page

<http://www.slmaonline.org/cmj>

e-mail: SLMA@eureka.lk

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Three issues are of paramount importance in the system of selection adopted for medical school admission in Sri Lanka. The system includes:

1. Subject-wise standardisation.
2. Medium-wise standardisation.
3. District quota system.

These issues are clearly separate but often confused. Fruitful discussion is hampered by a lack of clear understanding of these issues. Firstly, the concept of standardisation itself needs to be understood.

Most of the debate on medical school admission revolves around an optimal method of ranking applicants based on academic performance. There are few absolute measures of human behaviour. In psychological measurement, the concept of norm-referenced measurement has arisen from individual differences, being the basis for scale units [2]. Scales used to measure different subjects are different. Thus a student who obtains a score of 70% in chemistry and 65% in physics cannot be said to have a higher ability in chemistry than in physics, since the scales used to measure the two subjects may be different. As it is not possible to compare raw scores, it would be illogical to aggregate raw scores in different subjects. Thus an individual's composite score cannot be an aggregate of raw scores. These raw scores must be converted to values on a common scale before an aggregate score can be computed. Standardisation is a means of adjusting raw scores so that all the scores represent measurement on abilities on a common scale. Subject-wise standardisation is pre-requisite to aggregation of scores from different subjects. True standard scores, also known as 'z scores', are obtained when scores from all subjects which are to be aggregated, are converted in such a way as to have the same mean and the same standard deviation. If standard scores are to be used, two conditions must be satisfied:

1. The population of students from which the score distributions arose must be assumed to have equal means and dispersions in the abilities measured.
2. The form or shape of the score distribution must be similar from one ability to another.

This leads us to consider another practice which was introduced in 1970 in Sri Lanka, but abandoned in 1977, namely, medium-wise standardisation. Medium-wise standardisation can only be justified if it can be shown that there was an inequality in the scales used to measure the same ability in different media. In spite of the absence of concrete affirmative evidence to this effect, the practice was introduced on a hypothetical basis. It is to the credit of the authorities that the practice was abolished, albeit after a lapse of 7 years.

The district quota system was introduced around the same time as a temporary measure to redress the disparities that existed among the districts in the facilities and opportunities available to high school students preparing to enter a university career [2]. The relative weightage given to merit and district quotas has fluctuated over the years since, with no apparent rationale for such variation. The opportunity to undertake predictive studies to support such a system was not availed of, even though this temporary measure has now lasted for over a quarter of a century. Mendis has argued that the "present computation of district quotas lacks a sound statistical basis and is therefore seriously flawed", and recommends that the district quota system be abolished [2]. She argues, correctly, that mid-year population should not be the basis on which such quotas are determined, once educationally

under-privileged areas (EUPAs) are identified. While this flaw can be corrected by using A-level student population, rather than the total population, as the basis, another serious drawback of the system is that variation in facilities within the district has not been taken into consideration. Furthermore, a district quota system has the potential danger of discouraging development, in order to increase opportunities for admission, for fear of progression to privileged status. On educational grounds, the district quota system “cannot hold water”, even though a case may be made for it on humanistic grounds. Predictive studies of student performance, both in training and in practice, and comparative studies between merit and district quota admissions, would provide sound data on which to base the continuation of this practice, even though it cannot be defended on educational grounds. As a first step, correlation studies should be carried out between admission criteria and medical school performance, extending necessarily to correlate with criteria of effective physician performance. However refined the criteria for admission may become, they can ultimately be validated only by these measures [3].

We live at a time when significant changes are taking place in undergraduate medical education. No longer can we train medical students in the same manner as in the past. These changes impinge on the nature of the most important “input” into medical school, namely the students, and hence the method of selection must be

related to the nature of the curriculum. The process of selection must be determined by the curriculum, rather than the curriculum be changed to cope with an inappropriate selection process [4].

The undergraduate medical curricula in the medical schools in Sri Lanka show, at present, a considerable degree of variation. The medical school of Colombo underwent a significant curriculum revision a few years ago, and the school at Ragama is instituting a somewhat different change in the near future. The schools in Ruhuna and Sri Jayawardenapura are also contemplating change. The question which authorities must tackle, sooner or later, is whether selection procedures should remain the same for all schools in the country, in spite of this variation in the curricula.

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