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ADMISSION CRITERIA FOR SAUDI HEALTH COLLEGES: THE CURRENT STATUS AND A LITERATURE REVIEW

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ABSTRACT

Medical Colleges have the liability of providing high quality professionals to produce competent, confident and reliable physicians who deal efficiently and compassionately with the health problems of the individual and the society. They are accountable to various stakeholders who are involved in the educational process and the outcomes to ensure that the highest possible standards are maintained throughout the educational process. The appropriate selection of candidates for medical schools admission is a challenge for the administration and the subject for much debate. Most health colleges select their students on the basis of high academic qualifications along with varied non academic criteria for the health colleges. A fair, transparent and effective admission system is needed, to select the most suitable students from a growing pool of candidates, whose academic scores are high. This review focuses on the current admission criteria in Saudi Medical Schools and a brief literature review to provide valid and reliable tools which are applied in different Medical Colleges internationally. Furthermore, the tools which are used locally need to be further investigated and evaluated for the evidence of their validity and reliability.

KEY WORDS: Admission criterion, Medical Schools, Saudi Arabia.

INTRODUCTION

Today, medicine is more than ever before, a social rather than a strictly individual activity. It treats diseases and illnesses that are as much social and psychological as biological in origin. Physicians have a variety of relationships with society, because society and its physical environment are important factors in the health of patients. The medical profession in general and the individual physicians have a significant role in public health, health education, environmental protection and laws affecting the health or well-being of the community; hence it is one of the most respectable and demanding field in which physicians are enjoying privileged status, which makes entry to health colleges highly competitive. Educational strategies are also changing from the traditional to the new innovative integrated student centred and problem-based teaching and learning.[1] Globally, the number of medical students and health colleges are increasing day by day. Similarly, the number of the applicants to the King Saud University Health Colleges is approximately 4500. The available seats in these colleges are about 1500, which mean that the competition is 3:1. Selecting the "right" students is a challenge for the health schools and the subject of much debate. Most of the health colleges, no longer select solely on the basis of high academic qualifications, but include varied non-academic criteria such as excellent interpersonal skills, evidence of compassion and concern for others, maturity, and a well-informed motivation for the health profession. The aim is to identify personal qualities in potential students with high academic scores that will allow them to cope with the rigors of the health course and to become globally competent as health practitioners [2].

A reliable, fair and transparent admissions system is needed, for the health colleges where demand exceeds supply and where it is difficult for staff to select from a growing pool of candidates whose academic scores are high. The admissions systems should strive to use assessment methods that are "reliable and valid".

An extensive internet based literature review did not find any local literature to discuss such an important issue for all health education schools. In this review, I have reviewed the admission criteria in different health schools in Saudi Arabia and internationally. I have also identified the stated criteria for admissions, the tools with which such criteria

are sought, and the processes by which those tools are applied. The review of the literature includes identification of the predictors for good and bad performances. In the light of review and my conclusions, the recommendations are being put forward for the best tools for the admission criteria to predict the best future health practitioners who will perform well in the health colleges and beyond. This article has been written to provide a snapshot of the current situation in the Saudi medical schools admission criteria with focus mainly on the current situation and suggestions for improvement. An attempt has been made to introduce some international perspective in medical education in the hope that some of these aspect may be useful to our medical schools.

CURRENT ADMISSION PROCESS:

In the recent past, the admission to the Saudi Health Colleges depended solely on the academic ability i.e. high school passing grade of greater than 90%. On 28/11/1421H it was decided by the Ministry of Higher Education to add the "Achievement Test". This test was added to the selection criteria for the assessment of students' high school (three years pre-university secondary school level), scientific subjects. The current admissions criteria have been unified for the Medical, Dental, Pharmacy and Allied Medical Science, in all of the Saudi Universities. The ratio of boys to girls admission to the health colleges varies from 1:1, 2:1 or only boys in different medical colleges of Saudi Universities.

The following four components or some of them are currently used: (i) The academic ability (all applicants should fulfil the high school passing grade greater than 90%, is the first and mandatory condition) which accounts for 30% of the weightage.

(ii) The "Aptitude Test" which tests the high levels of understanding of the given reading materials and some mathematic problem-solving abilities in forms of MCQs which accounts for 30% of the weightage. This part of the exam is conducted biannually. [3]

(iii) The "Achievement Test" based on the three years high school scientific subjects (chemistry, biology, physics, mathematics & English), which consist of MCQs and represents 40% of the weight. Usually, the decision about the selection of student is made by the sum of these three written examinations which are mainly based on the cognitive abilities of the candidate [4].

(iv) A well-structured interview that focuses on personal attributes and attitudes of an applicant by a panel of three interviewers for 20 minutes which may exclude about 10-15% of the candidates already short listed for the interview from the first three items in the exam. This interview is resource-intensive and expensive. The reliability and validity of the current interview processes in medical school admissions is increasingly being questioned by admissions committees.[2]

The aptitude test and the achievement test are conducted centrally under the supervision of the Ministry of Higher Education. The interview part is conducted by each university where the candidate has applied. The interview and acceptance of a candidate is done individually by the corresponding university. It has been found that about 15% of the candidates did not show up after getting the acceptance by a university [5].

ADMISSIONS TESTS USED TO SELECT MEDICAL STUDENTS IN OTHER COUNTRIES:

In Iran, candidates to a medical school are selected through the entrance exam, known as "Konkoor". This exam is conducted in five academic streams of 'natural science', 'mathematics and physics', 'humanities', 'fine arts', and 'foreign languages'.[6]

In Pakistan, admission criteria depend on secondary school (O level), and higher secondary school (A level) scores, which are mainly covering the cognitive domains along with aptitude test and interview. None of these criteria predict the performance of medical students in the professional examination. [7] In United Kingdom [8], there is some commonality across medical colleges with regard to the criteria used to select future students. These criteria include academic ability coupled with a "well rounded" personality demonstrated by motivation for medicine, extracurricular interests, and experience of team working and leadership skills. The processes for implementation used vary substantially. Some medical colleges do not interview; some shortlist for interview only on predicted academic performance while those that shortlist on a wider range of non-academic criteria use various techniques and tools to do so. Some medical colleges use information presented in the candidate's personal statement and referee's report while others ignore this because of concerns over bias.

In other European countries [9], there is even greater heterogeneity, for instance, in the Netherlands, medical schools may select a proportion of the candidates via interview and other methods, but the remaining candidates are identified through a lottery among school leavers weighted for academic attainment. The heterogeneity in the selection processes exists both between and within the countries.

In the United States, requirements for admission to medical colleges vary from school to school and include minimum academic levels (indicated by undergraduate grade point averages; GPA), performance in the medical college admissions test (MCAT; a standardized cognitive test which consist of four domains: 1.physical science 2.biological science 3.writing sample 4.verbal reasoning). Most of these colleges conduct well structured and validated interviews to identify one or more of a range of non-academic characteristics, these interviews may last up to ninety minutes in some of the universities[2]. A similar approach to selection is seen among the 17 Canadian medical colleges [5].

In both the US and Canada, medicine and dentistry are taken as postgraduate degrees. This is not the case in most of the world countries. In Australia, admission to medical schools could be in two ways, either as a postgraduate or directly from high school. The methods adopted in selection again comprise a combination of minimum academic attainment, cognitive testing, and interview [10].

The period at health school also represents a considerable personal investment of time and money for the student and the society. For both the good of the individual and of society, it is important to minimize the rate of attrition by optimizing the student selection procedure and having robust mechanisms to early identification and support of those who are "struggling" or poor performers, which has been found up to 15% in one of the studies [11].

There has been a growing acknowledgment for some years that non-academic personal qualities are just as important and influential to the learning and practice of medicine as the academic ability. Accordingly, an increasing number of medical colleges require applicants to complete tests that measure qualities, traits and abilities other than academic ability. The oral assessment was found to be a reliable and valid tool. Structured interviews have been shown to provide important additional predictive information and higher internal consistency [12].

The University of Adelaide, Australia, conducted extensive examination of empirical evidence of the selection process of medical students and adopted a national written examination of reasoning and interaction skills, a structured oral assessment and a threshold matriculation score [13].

The most important purpose of the interview is to gather non-academic information about

candidates that would be difficult or impossible to obtain by other means. The multiple mini-interview (MMI) [14-16] is a relatively new assessment tool which was developed at McMasters University for assessing candidates' non-cognitive characteristics. MMI is a multiple station interview process that addresses the limitation of traditional selection interviews, such as limited content specificity, poor reliability and inadequate targeting of desirable personal qualities[2]. It uses the objective structured clinical examination format, and so avoids the issue of long interview and permits sampling across multiple stations designed to measure a range of desirable skills and personal attributes, resulting in improved objectivity and reliability[17-19]. All selection interviews are resource intensive, but the MMI has been shown to be cost effective compared with the traditional interview. Many centres have applied MMI and have confirmed its utility [20-24].

PREDICTORS FOR GOOD PERFORMANCE IN THE SELECTION PROCEDURES:

Several studies in the United States report extensive validation of their admission criteria. A study reports a comprehensive summary of the relationships between GPAs and MCAT scores and (1) medical school grades, (2) USMLE Step scores, and (3) academic distinction or difficulty [25]. The results show that the grades were best predicted by a combination of MCAT scores and GPAs, with MCAT scores providing a substantial increment over GPAs. MCAT scores were better predictors of USMLE Step scores than were GPAs.

A meta-analysis of the validity of the Pharmacy College Admission Test (PCAT) & GPA has shown that both the PCAT scores & GPA were moderate to strong predictors of grades earned in pharmacy programs & scores on Licensing Examinations [26].

Reliability and validity has been shown to be higher in structured medical admissions interviews as compared to unstructured and individual interviews [27-28].

Psychometric tests have been used to measure personality characteristics and abilities rather than learned material. A test battery called the Personal Qualities Assessment (PQA) has been developed by researchers in Australia. The battery consists of 3 tests, of which the first is designed to measure individual differences in cognitive reasoning ability, the second to identify an Involved (empathic and confident with others) or Detached (narcissistic and aloof) personality trait, and the third to determine ethical/moral orientation. Research by the authors of the PQA indicates the tests have acceptable reliability, and correlation studies with well validated and widely used personality tests and have provided evidence of the construct validity [29-31].

A selection instrument has been developed to assess the candidates' capability to work as part of a team in a problem-based learning (PBL) curriculum.[32] where learning content is explored and mastered in student-centered teams. It was administered during the student selection process, and evaluated for its reliability, validity, fairness and acceptability among the candidates. The instrument found to have good item discrimination and high reliability and was acceptable by candidates. It appears to be well suited to assess candidates suitable for PBL curriculum.

PREDICTORS FOR THE POOR PERFORMANCE:

In a study in the UK [2], 10-15% of each year's student intake were identified as strugglers or poor performers. Significant independent predictors of students being in this category were negative comments in the academic reference, lower mean examination grade at A level and the late offer of a place. Male sex was a less significant risk factor as was a lower grade at GCSE science. Age at entry to the course and the possession of a previous degree were not predictive.

UN-VALID FACTORS TO DETECT THE PERFORMANCE:

Personal statements and referees' reports are widely used on medical college application forms to assess motivation, interest and commitment to a medical career. The personal statement and the referee's report cannot validly be used to identify doctors who will subsequently be dissatisfied with a medical career if the report is positive or in favor of the candidates [33]. If the reports from headmaster are negative or do not favor the candidate, it could be a predictor for a poor performance [11]. The only measure of academic performance used for selection of students admitted to the medical schools, is a very weak predictor of success in a medical school[34].

From this review, it can be concluded that Saudi Universities have come a long way since the days when secondary school results (the cognitive domain) alone were considered good predictors of "success". It was realized that doctors need more than academic abilities. In the light of the international literature, the tools and the procedures for selecting candidates for admission in the health colleges of the country appear better than before, but they still lack the published evidence of validity and reliability. These tools need to be further investigated and evaluated. Furthermore, the inclusion of well studied valid and reliable admission tools, such as MMI could be considered and evaluated in our setting.

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