

SELECTION OF MEDICAL STUDENTS BASED ON NATURAL BUILT IN
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Article Received on 28/05/2017

Article Revised on 19/06/2017

Article Accepted on 10/07/2017

ABSTRACT

In most medical schools, selection tools are used to assess the cognitive abilities of the candidates. Trend is growing to use tools meant to evaluate non cognitive skills also. Therefore, a number of psychological and aptitude tests have been emerged. Majority of current tools being used for selection of medical students have verbal reasoning, critical thinking and interview segment. This paper aims to suggest an innovative instrument to assess the effectiveness of a set of personal attributes (such as Hard work, Politeness, Cool minded, Creativeness, Socially well behaved, Problem solving, Good team work, Good communication, Leadership and commitment to the group qualities) denoted as Natural Built in Attributes (NBAs) as a predictor of student performance in an undergraduate medical programme. A new NBAs tool is suggested as template to apply on applicants to the medical programme as well as students within the programme. It is expected that the NBAs are strongly associated with student performance within the medical programme and overall including it in the admission process would likely to improve the effectiveness of the selection process.

KEYWORDS: Admission, Aptitude, Attribute, Medical education, Selection Test.**INTRODUCTION**

Admission process is a highly competitive entry point in undergraduate medical education. Universities have made considerable investment to develop selection tools to identify the most appropriate candidates for their medical programmes. The selection instruments identify individuals' cognitive and non-cognitive qualities to face the intellectual, ethical and inter-relational challenges of a medical degree course. In selecting the students, tools are designed to choose candidates who are likely to succeed but not necessarily to predict their actual performances in course assessment. Generally the rule is to identify who should be selected rather than who are likely to perform the best.

In most cases, selection tools are used to assess the cognitive abilities of the candidates. Trend is growing to use instruments meant to evaluate non cognitive skills also. Therefore, a number of psychological and aptitude tests has been emerged. The most commonly designed selection tools include the Medical College Admission Test (MCAT).^[1] the United Kingdom Clinical Aptitude Test (UKCAT).^[2] and Undergraduate Medicine and Health Sciences Admission Test (UMAT).^[3] and the Personal Qualities Assessment (PQA) tool.^[4]

The UKCAT, introduced in 2006, employs tests of cognitive and non-cognitive personal qualities in four distinct domains, which are verbal reasoning, quantitative reasoning, abstract reasoning and decision analysis. There is clear evidence that the tests' predictive validity is lacking in preclinical as well as clinical part of medical programme.^[5] The multiple mini interviews (MMI), another primary tool for non-cognitive skills of undergraduate medical students, was found to have positive findings in prediction of success in early years of medical study.^[6]

Logical reasoning, problem solving and non-verbal reasoning are focused by undergraduate medical admission tests (UMAT).^[3] Stress level has also been seen in undergraduate medical students.^[7] Therefore, it is suggested that medical schools should select students who are able to face the real hard situation of medical training and subsequently the medical practice. Hence, there is a need of an additional test that could show Natural Built in Attributes (NBAs) as a valuable means to widen participation of medical students rather than achievement or memory recall.

Natural Built in Attributes (NBAs)

We suggest a new battery based on NBAS for selection of undergraduate medical students.

Attributes are defined as inherited qualities or characteristics of individuals, which are natural built in personality. Having high IQ is an attribute of a person. For medical graduates, a range of attributes to be covered are:

- **Hard work:** Is the key to succeed. Medical programme because of its higher number of credit hours demand students to be hard worker. Many schools have adopted the trend of students' centre in their medical programme, which requires maximum self-study by students.
- **Politeness:** Is required in medicine. This trait is well demanded especially in paediatric and internal medicine practice.^[8] Dealing with kids and old age patients, a soft voice is suggested.
- **Cool minded:** Is another special trait, which is not found in every individual. A cool person shows calm and confidence. Such persons seldom upset or angered. This trait is demanded in surgery. When a patient's life is in the hand of surgeon and surgeon remains cool even if there is extra bleeding by mistake of assistant to save patient's life.
- **Creativeness:** Is a process of generating original or new thoughts, designs or products. In Bloom taxonomy, it is called 'Synthesis'. Medical research demands to take persons who are creative. This trait is required in future medical researchers.
- **Leadership:** The striking feature of a leader is to think strategically and having a vision with his /her followers to be at a particular time. Leaders make good decisions in support of their strategy development. Leaders must be exquisitely ready to know what is important for academic programme. They must be deeply rooted personally in the enduring values and commitments that inform medicine as a profession.
- **Team work:** The managerial, diplomatic and interpersonal skills are widely acknowledged. In medical study, team work is required. In medical profession, team work is needed to be successful. These bonds are important when the team faces a particularly difficult challenge.

DISCUSSION

In addition to high level academic ability, a review of medical student selection has indicated that competent and ethical practice of medicine requires doctors to possess a range of personal qualities. To measure some of the personal traits, a three part test battery called Personal Qualities Assessment (PQA) was developed. This tool measures cognitive skills, moral orientation, confidence and empathy etc. The test results showed a range of selection attributes and personal qualities towards academic, clinical and behavioural achievements.^[4,9]

High school grades as part of selection procedure reflect educational background in many selection tools. Interview segment indicates behavioural aspect of the candidates. Specific tools e.g., UMAT & MCAT analyse the critical thinking, verbal reasoning and writing skills of the students. A blend of personality characteristics is required besides cognitive abilities in medical students to be successful in medical studies and eventually in medical profession. However, there is further debate as to which personality traits are typical in medical students as compared to non-medical students.^[10]

The reliability of Universities Admission Index (UAI), Undergraduate Medical Admission Test (UMAT) and a structured interview as part of selection process when compared, UAI predicted higher values in knowledge based outcomes. Interview part showing communication skills of the students achieved similar value in clinical based outcomes. However, UMAT had negligible prediction to any performance outcome. Furthermore, none associations among interview score, grade point average, entry pathway (UMAT) and level of interest in general practice were found. These findings support the use of a new & wider lens through which to view medical students 'selection tool'.^[11]

It seems, therefore, that no matter what tool is adopted in selection of medical students. The tools and their predictive results do not highly correlate. Actually many medical graduates face some degree of stress and difficulty leading to their inefficiency in success of medical study and later medical practice. Medical practice means writing patients' history, reading investigation, thinking differential diagnosis of the problem and making treatment plan. All these high level responsibilities, give a considerable pressure to medical graduates. Above it, fear of malpractice, which may spoil medical professional life if found guilty as malpractice, is stressful.^[12]

This tool would cover comprehensive sets of natural built in attributes leading to better selection outcomes in terms of students' performance at the medical programme as well as at their postgraduate training. This tool would link the hardship of medical student life and later specialist training based on applicants' natural built in qualities. Evidence based improved battery of selection tool is obtained, which would help to select and counsel the medical students based on their natural built in talents during student and later as health professional.

CONCLUSION

This would provide an opportunity to explore the role of natural built in attributes and their correlation in prediction of performance within undergraduate and postgraduate medical programmes. However, this paper is a guideline towards such tool to be developed in near future, which would help to make a policy for selection of undergraduate and especially to postgraduate students to choose the speciality which is best based on their

natural attributes and ultimately more fruitful results in terms of community service are expected.

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