

## Short Literature Review of SJT and MMI for RANZCO

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### Situational Judgement Tests (SJT)

Situational Judgement Tests (SJTs) are a method designed to assess a candidate's judgement regarding a situation encountered in the workplace, targeting professional non-academic attributes rather than clinical knowledge (1). Candidates are presented with hypothetical scenarios and asked to identify an appropriate response from a list of alternatives (2). They are scored by comparing responses with a pre-determined scoring key agreed by subject matter experts (3).

SJTs are derived from behavioural consistency theory, which asserts that past behaviour is the best predictor of future behaviour (3). They are also believed to be a measure of prosocial Implicit Trait Policies (ITPs), which are shaped by socialisation processes that teach the utility of expressing certain traits in different settings (4). ITP theory proposes that individuals develop beliefs about the effectiveness or costs and benefits of different behaviours in particular situations, which are influenced by the individual's inherent tendencies or traits.

### Reliability

SJTs used in medical selection have been shown to have moderate to good reliability, regardless of the method used to assess reliability. Because they are a measurement method with no one single measurement type, each test needs to be evaluated independently to judge reliability (4, 5).

### Validity

SJTs have good levels of predictive validity. They have been shown to predict in-training performance and end-of-training competence (6), performance in relation to educational supervisors' ratings (7), performance in a clinical skills licensing OSCE (8) and in a selection centre (9).

### Fairness

Fairness in selection and the challenge of widening access are current priorities in selection for medical training world-wide. Research suggests that SJTs have less adverse impact regarding ethnicity and gender compared with other tools (4). They may also promote widening access compared to indicators of academic attainment.

### Multiple Mini Interviews (MMI)

It is recognised that cognitive ability is a necessary but insufficient selection requirement, necessitating the assessment of other competencies such as professionalism, ethics and communication (10). Multiple Mini Interviews (MMIs) apply the same principles used in assessment for the development of the Objective Structured Clinical Exam (OSCE) (11). This is a structured process in which applicants rotate every few minutes around a series of stations designed to assess the non-cognitive attributes that have often traditionally been assessed by means of panel interviews (12). Domains tested include critical thinking, ethical decision-making, communication skills and knowledge of the health system. A major strength is that the scenarios/ questions are flexible and can be moulded to assess attributes that best meet the requirements of the program (12) and can be developed fit-for-purpose by experts in a particular field, with wide sampling of competencies (13).

Specific learnt knowledge is not required, with assessment instead aimed to evaluate a candidate's ability to logically work through a problem and express ideas clearly. Since the MMI was first described, there has been wide uptake of this selection method with a growing body of evidence supporting its reliability, validity, feasibility and acceptability (5, 12, 14).

### **Reliability**

The reliability of the MMI is moderate to high (5, 14-17). Increasing the number of interviewers has the effect of diluting the degree to which candidates are selected based on their chance assignment to a compatible interviewer team (11). Unlike traditional interviews, ratings are given independently for each component and are therefore less likely to be influenced by access to other information about the candidates or the non-verbal communication between members of the interviewing team (11). The problem of poor test- retest reliability is overcome, as is context specificity where the measurement of an attribute in one context does not necessarily transfer to another (14). A major factor affecting reliability is interviewer subjectivity, highlighting the importance of appropriate rater training (13). Another way to improve reliability is to increase the number of questions rather than the number of interviewers within each interview (18). Reliability can also be improved by replacing an easy station with a more challenging one, paying attention to the scoring rubric (19).

### **Validity**

Blueprinting maximises content validity and ensures an optimal match between the curricular tenets of the program and characteristics of the individual accepted onto it (11, 13). In terms of content validity, there is a positive association with reasoning in humanities and social sciences, written communication and ethical decision-making and poor correlation with the personal interview, undergraduate grades and an autobiographical sketch (12).

In terms of predictive validity, evidence from a Canadian medical school shows MMI performance to be a strong predictor for subsequent OSCE and clerkship performance, as well as qualifying exams (15, 16, 20).

### **Acceptability**

The MMI is perceived as fair (21), transparent (19) and free from gender, cultural and socio-economic bias (19, 22). In addition, it appears that it is unaffected by previous coaching (23); however, as performance improves with practice of a particular task, stations should be rotated annually. Both applicants and interviewers have reported a positive experience with the MMI (11).

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