INReSH London 2014

Programme

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Medical Schools Council

ASME Association for the Study of Medical Education

International Network for Researchers in Selection into Healthcare

Organising panel

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Work Psychology Group, UK

Katie Petty-Saphon
Medical Schools Council, UK

Chris Roberts
University of Sydney, Australia

Axel Themmen
Erasmus MC, Netherlands

Introduction

On behalf of the organising panel, we are delighted to welcome you to the inaugural meeting of the International Network for Researchers in Selection into Healthcare (INReSH) in London. This is an exciting opportunity to meet with other esteemed academics from around the globe to share expertise in different areas of selection research. Our intention is to promote the production of authoritative and cutting-edge research to develop a future research agenda for selection issues in healthcare that has relevance internationally. We want to promote the development of new, critical, and imaginative research, scholarship and theorising on admissions and selection issues, identifying gaps to be addressed in the evidence base.

INReSH was conceived to encourage and support academics engaged in selection research by providing a platform for multi-disciplinary engagement and dissemination of their work. This two-day meeting gives an opportunity to work collaboratively with fellow researchers and provide a space for exchanging ideas, generating new thinking and establishing constructive working relationships.

Our aim is to bring together established and newer researchers within the field to advance our scientific insights and stimulate intellectual enquiry. We hope that this will be the first of many meetings, and that we can all use this opportunity to scope the future research agenda within this exciting area of academe, with practical applications that may shape the future of selection in healthcare internationally.

Our inaugural conference will centre around four themed symposia, each with internationally known speakers to start discussions. The themes are:

- Values-based recruitment
- Predictive validity of selection methods
- Widening participation
- Theoretical developments in selection

There will be interactive poster sessions on each day relating to the key themes, as well as working group discussions. We have purposively limited the size of the meeting to facilitate discussion and debate. Our discussions will be scribed, so that we can capture the ideas generated during this unique opportunity to have so many thought-leaders together in one place. Our intention is to disseminate our ideas internationally, to promote a research agenda and research collaborations.

We hope you enjoy your time with us in London, and look forward to working together over the next two days.

Fiona Patterson & Jen Cleland

Contents

Timetable

Monday 10th of November 2014

09:30 – 10:00	Coffee and registration
10:00 – 10:15	Welcome and introductions from Iain Cameron, Jennifer Cleland, Fiona Patterson
10:15 – 11:45	Themed symposium 1 **Widening Participation** Speakers - Axel Themmen, Erasmus MC, Netherlands - Liz Thomas, Edge Hill University, UK - Jennifer Cleland, University of Aberdeen, UK - Sandra Nicholson, Queen Mary University of London, UK
11:45 – 12:30	Working group discussions
12.30 – 12.45	Plenary round up
12:45 – 13:30	Lunch
13:30 – 14:45	Interactive poster session
14:45 – 16:15	Themed symposium 2 **Predictive Validity of Selection Methods** Speakers - Kelly Dore, McMaster University, Canada - Filip Lievens, Ghent University, Belgium - Chris McManus, University College London, UK
16:15 – 16:45	Coffee
16:45 – 17:30	Working group discussions
17:30 – 18:00	Plenary round up
18:00 – 19:30	Evening reception

Tuesday 11th of November 2014

08.30 – 09:00	Coffee and arrival
09:00 – 09:15	Introductions
09:15 – 10:45	Themed symposium 3 **Values-Based Recruitment** Speakers - Fiona Patterson, University of Cambridge, UK - Helena Edwards, Work Psychology Group, UK - Anton Botha, United Nations, USA
10:45 – 11:30	Working group discussions
11.30 – 11.45	Plenary round up
11:45 – 13:00	Interactive poster session
13:00 – 13:45	Lunch
13:45 – 15:15	Themed symposium 4 **Theoretical Developments in Selection** Speakers - Stephan Motowidlo, Rice University, USA - Eamonn Ferguson, University of Nottingham, UK - David Good, University of Cambridge, UK
15:15 – 16:00	Working group discussions
16:00 – 16:30	Plenary round up and close

Speakers

Axel PN Themmen, Institute of Medical Education Research Rotterdam (iMERR), and Department of Internal Medicine, Erasmus MC, Netherlands

The promise of academic and non-academic selection criteria: Widening access and prediction of medical school achievement

This presentation gives an overview of the results of studies using a selection method for admission to medical school consisting of two steps. In the first, 'non-academic' step participants were assessed according to the quality and extent of their extracurricular activities before application, while the second, 'academic' step consisted of a series of five tests on a medical subject representative of assessments in the first year of medical school. This procedure selected students with a lower risk of early dropout and a higher clerkship GPA than lottery-admitted controls. The relative importance of the separate selection steps for medical school performance will be discussed. In brief: the lower dropout rate of selected students is related to self-selection of applicants and mostly to the academic selection step. The higher clerkship GPA of selected students was almost exclusively related to the non-academic selection step. Thus it appears that non-academic criteria can be used to select for students with a good clinical performance.

The second subject concerns our studies on the ethnic and social disparities in performance in medical school selection. We found that non-Western ethnic minority and first-generation university students performed worse in the academic step of the selection procedure described above, where the higher failure rate of the first generation students and some of the ethnic minority subgroups was partially explained by additional socio-demographic variables and pre-university GPA. Success in the non-academic step showed no difference between the different ethnic and social groups. This absence was promising regarding social and ethnic diversity, although it cannot be ruled out that self-selection instigated by the selection procedure may have played a role.

Axel PN Themmen PhD (1955) is Professor in Experimental Endocrinology and Medical Education at the Erasmus University Medical Center Rotterdam, The Netherlands. He supervises a research team in the Laboratory of Endocrinology of the Department of Internal Medicine at Erasmus MC (research area: hormones and metabolism). He is one of the founding members of the Institute of Medical Education Research Rotterdam (iMERR). His main research interests in medical education are the development of evidence-based methods of selection and admission of students at different stages of medical education (pre-med, medical school, pre-residency and residency) and the effects of widening access of students to medical school programmes.

Liz Thomas, Widening Participation Research Centre, Edge Hill University, and Academic Development Unit, Staffordshire University, UK

Alternative approaches to equality in recruitment and selection to higher education

This session will introduce alternative ideas about, and approaches to, equality in recruitment and selection to higher education. It will consider different notions of equality and how these are operationalised within institutions – drawing on evidence and examples from institutional Widening Participation Strategic Assessments and other national and institutional research. In particular it will consider how different types of contextual data can be used in the admissions process to contribute to improving equality of outcomes. The use of contextual data enables an equality outcomes approach to be operationalised, in contrast to more simplistic notions of formal equality, thus contributing to widening access and excellence in higher education.

Liz Thomas is an independent researcher and consultant for higher education, Professor of Higher Education at Edge Hill University and Professor of Academic Development at Staffordshire University. Liz has over fifteen years' experience of undertaking and managing research about widening participation, and she is committed to using research to inform national and institutional policy and practice. Liz led the analysis of the 129 Widening Participation Strategic Assessments (WPSAs) submitted to the Higher Education Funding Council for England (HEFCE) by English higher education institutions. She contributed to two similar reviews in Wales in 2009 and 2011/12 for the Higher Education Funding Council for Wales (HEFCW). Liz is currently working in partnership with the Equality Challenge Unit and four higher education institutions in Scotland to review and implement change to improve the recruitment of a diverse student population in higher education. She has just completed a country review to improve social inclusion in Croatia for the Peer Learning for the Social Dimension project, funded by the European Commission Lifelong Learning Programme.

Jennifer A Cleland, Division of Medical and Dental Education, University of Aberdeen, UK

Taking context seriously: Explaining widening access policy enactments in UK medical schools

Since the 1970s, the UK medical student body has become increasingly diverse when it comes to gender, ethnicity and age, but not in terms of socio-economic background. This variance may be linked to individual medical schools interpreting and putting widening access policy into practice very differently. However, attempts to theorise what happens when policy enters practice is neglected in medical education. This short talk uses the framework of policy enactment to give a novel perspective on widening access practices across UK medical schools. Drawing on individual telephone interviews with Admissions Deans and/or Admissions staff from 24 UK medical schools, the data illustrate how widening access policy is played out differently in local contexts. This can inform decision making as to what might be open to change, and how best to direct change in this area.

Jennifer Cleland is John Simpson Chair of Medical Education Research, University of Aberdeen; Chair of the Association for the Study of Medical in Education (ASME) and Chair Elect of the Association for Medical Education Europe (AMEE) Research Committee. Since 2002, she has researched selection, performance and assessment in medical education, and has published widely on these topics. She led a team commissioned by the General Medical Council (GMC) in 2012 to carry out a mixed methods programme of research into selection and widening access in UK medical education, and has been awarded funding by the Selecting for Excellence Executive Group (SEEG) and the Medical Schools Council (MSC) on two separate occasions to further explore these topics. She is Co-Chair of the International Network for Researchers in Selection into Healthcare (INReSH).

Sandra Nicholson, Institute of Health Sciences Education, Queen Mary University of London, UK

Exploring the academic experience of UK medical students who come from non-traditional lower socio-economic groups

Students from lower socio-economic groups remain under-represented in UK medical schools. Most research highlights the inequalities in access to medical school places (largely due to educational disadvantage) and initiatives designed to overcome this. However there is scant research that examines the experience of the small numbers of such non-traditional students who are admitted to UK medical degrees beyond attrition data. This presentation aims to explore the perspectives of medical students to better understand how students from lower socio-economic backgrounds may be perceived, their experience of an undergraduate medical curriculum, and the issues concerned with what is required for them to learn in order to become doctors, that may differ from their more traditional peers.

Presented research data are derived from a conceptual framework that encompassed both sociological and sociocultural learning theories that enable the professional development and learning processes of medical students, and students from lower socio-economic backgrounds in particular, to be better understood. An interpretive methodology including focus groups and individual interviews was used to access the perspectives of medical students from across the curriculum of one medical school. Analysis used *a priori* concepts and a modified grounded theory approach.

The findings of this research provide a platform from which the relational aspects between student practice and medical school structures, including the medical culture, can be further examined. For some non-traditional students differing patterns of socialisation, issues with developing an effective medical habitus and resultant professional identity, and reduced or less effective participation in authentic learning activities were identified.

Sandra Nicholson is Reader of Medical Education at Queen Mary University of London; Chair of the UK Clinical Aptitude Test (UKCAT); Member of the UKCAT Research Panel; and Co-Chair of the Heads of Undergraduate General Practice Teaching (HOTS). Her research interests include selection and widening access, academic performance and professional development of non-traditional medical students, medical undergraduate experience of general practice, and medical professionalism. She has peer-reviewed journal articles,

book chapters, and international presentations concerning selection, aptitude testing and widening access.

Kelly Dore, Faculty of Health Sciences, McMaster University, Canada

Abstract to be distributed on the day of the conference.

Kelly is a Senior Scientist in the Program for Educational Research and Development and an Assistant Professor in the Departments of Medicine, Surgery, Obs/Gyn, and Pediatrics. She also holds an affiliated appointment with the Department of Clinical Epidemiology and Biostatistics. She is Director of the Masters of Health Science Education Program. Her current interests include assessment/evaluation, measures of admission (including personal and professional characteristics), the process of clinical handover, and the psychological factors relevant to health professions education and clinical decision making.

Kelly completed her PhD in Health Research Methodology with a focus on Health Professions Education Research and Cognitive Psychology. She has held multiple grants from both the Medical Council of Canada and the National Board of Medical Examiners (Stemmler Grant).

Filip Lievens, Department of Personnel Management, Work and Organizational Psychology, Ghent University, Belgium

Long term use of SJTs in medical school admission: Validity and coaching effects

In recent years, there has been substantial interest to assess interpersonal ("soft") skills in addition to cognitive factors in medical school admission. To this end, situational judgement tests (SJTs) have been used for over a decade in the admission process in the Flemish part of Belgium. This long-term study presents empirical evidence regarding two issues. First, are SJT scores valid for predicting various outcome measures such as medical curriculum grades and physicians' job performance? Second, how coachable is performance on SJTs?

This study used a longitudinal and multiple-cohort design (N= 5,444) for investigating the validity of the SJT scores. The coachability of SJT performance was examined in a sample of 1,085 individuals who participated in 2008 in the admission exam and who responded to a survey asking them about their test preparation activities.

SJT scores were found to be valid predictors for interpersonal grades during the curriculum and for physicians' job performance. The criterion-related validity of the SJT scores was not degraded by the availability of coaching. Organisationally endorsed coaching was sometimes more effective than commercial coaching.

Generally, this study illustrates that SJTs might be useful instruments for assessing interpersonal skills in medical student admission. Concerns about potential unfairness of coaching can be countered by making effective coaching available to all examinees, in the

form of organizationally endorsed coaching.

Filip Lievens is currently Professor at the Department of Personnel Management, Work and Organizational Psychology at Ghent University, Belgium. He has also been a visiting professor at various other universities such as University of Minnesota, Ludwig-Maximilian University München, University of Capetown, and Singapore Management University. Filip Lievens is a world renowned authority in the field of selection and assessment. He has published over 130 articles in the areas of high-stakes testing, assessment centres, structured interviews, situational judgment tests, and web-based assessment. He has also given over 200 presentations, workshops, and invited keynote presentations across the globe.

Chris McManus, Research Department of Clinical, Educational and Health Psychology and Academic Centre for Medical Education, University College London, UK

Validity, validity, validity: Fairness, fairness, fairness

Selection has to be fair, and that means that the methods used in selection have to be valid (and fairness without validity is little but a lottery). Validity and fairness are paramount in all selection studies, but both have problems in their interpretation.

Definitions of validity have changed over the decades, and are still far from fully resolved, with many taxonomies and classifications being proposed in the literature. Predictive validity is rarely contested as being a major form of validity, but it is difficult to attain, particularly over the long time-scales which are necessary from the selection of medical students through to a life-time of clinical practice. Predictive validity alone, though, is not acceptable, as it can merely result from atheoretical empiricism, and it requires backup from educational and psychological theory. Other forms of validity are often invoked as a temporary, stop-gap, solution to the absence of predictive validity, and they do have their theoretical advantages, but ultimately are probably only of use because they themselves claim to be indicative of a predictive validity embedded in theory.

Fairness is also difficult to define, not least because it is often invoked only at the level of individuals who are being selected, rather than in a broader, more societal, sense. Differences in performance of subgroups are a recurrent issue within selection, and many approaches have been suggested over the past few decades. Assessing whether tests are biased against sub-groups is most frequently carried out using the Cleary Test, first proposed in 1968, but it does have problems. Recent workers, particularly Meade and Fetzer, have proposed a modified Cleary Test, mainly because the conventional Cleary Test does not take reliability into account, and differences in regression intercept can also result from unmeasured variables.

Assessing validity is far from straightforward, and assessing fairness is equally problematic. This paper looks at various sets of data, in undergraduate and postgraduate medicine, which have attempted to consider both validity and reliability, particularly in the context of long-term studies and looking at group differences.

Chris McManus is Professor of Psychology and Medical Education at University College London. Chris trained as a doctor in Cambridge and Birmingham, and then after Foundation doctor roles in Birmingham and County Durham returned to Cambridge and

submitted a PhD on the neuropsychology of cerebral lateralisation. He then gained a lectureship at St Mary's Hospital Medical School, from which, after repeated reorganisations of the University of London, he eventually ended up at UCL Medical School. Chris' medical education research, which began at St. Mary's in collaboration with the late Peter Richards and became a London MD thesis, centres around several large-scale cohort studies of medical school applicants, which began in 1980, 1985 and 1990, and are still being followed up. Since 1996 he has also been educational advisor to the Membership of the Royal Colleges of Physicians of the United Kingdom, on which he has carried out much research. His work on handedness and lateralisation was described in a popular science book Right Hand, Left Hand, which won the Aventis Prize in 2003. In 2002 he also won an Ignobel prize for a now infamous 1976 paper combining his interests in laterality and art. In 2007 he was elected a Fellow of the Academy of Medical Sciences, and he is also a Fellow of the Royal Colleges of Physicians of London and Edinburgh.

Fiona Patterson, University of Cambridge and Work Psychology Group, UK

Selecting for values in healthcare recruitment: Evidence from a literature review

Compassion, benevolence, respect and dignity are important for any healthcare professional to ensure the provision of high quality care and patient outcomes. This paper presents a structured search and thematic review of the research evidence for values-based recruitment (VBR) within healthcare. Several different databases, journals and government reports were searched to retrieve studies relating to VBR published between 1998-2013, both in healthcare settings and other occupational contexts. Limited published research related to VBR directly, so the available theoretical context of values is explored alongside an analysis of the impact value congruence. The implications for the design of selection methods to measure values is explored beyond the scope of the initial literature search. Research suggests some selection methods may be appropriate for VBR, such as situational judgement tests (SJTs) and structured interviews. Personality tests were also identified as having the potential to compliment other methods as part of a VBR agenda. Methods including personal statements, references and unstructured/'traditional' interviews were identified as inappropriate for VBR. Practical implications are discussed in the context of VBR in the healthcare context. Theoretical implications of our findings imply that prosocial implicit trait policies, which could be measured by selection tools such as SJTs and structured interviews, may be linked to individuals' values via the behaviours individuals consider to be effective in given situations. However, further research is required to state this conclusively, and methods for VBR represent a relatively unchartered territory for further research.

Fiona is a leading expert in the field of selection and assessment in organisations. She is a Principal Researcher in the Department of Psychology at the University of Cambridge and a Director for the Work Psychology Group, a research-led consulting practice based in the UK and Australia, providing advice to organisations internationally. Having trained initially as a practitioner in the corporate sector, Fiona's approach to her academic research is to focus on optimising practical applications, and as such, her research in several domains has had major impact on government policy and across many organisational sectors internationally.

Following completion of her PhD at the University of Nottingham in the UK, she started her research into selection for the healthcare professions, initially focusing on GP selection in the UK. This became the start of a long-term award winning research programme that has had a major impact of how clinicians are now selected and assessed. Her current research focuses on how best to assess important non-cognitive attributes such as empathy, integrity, communication skills and teamwork, especially in high stakes environments. In 2012 Fiona was awarded an Honorary Fellowship by the UK Royal College of General Practitioners in recognition of her ongoing contribution to the selection process for GP specialty training. In 2013, she won the ASME Silver Quill Award for the highest impact publication in Medical Education, the leading journal in this field. Fiona publishes regularly in the highest ranking internationally recognised journals and alongside her collaborators, and she is the Co-Chair for the International Network for Researchers in Selection into Healthcare (INReSH).

Helena Edwards, Work Psychology Group, UK

Selection methods for values: An analysis of policy and practice

The Mid-Staffordshire National Health Service (NHS) Foundation Trust Public Enquiry (Francis, 2013) report highlighted the significance of staff values and behaviours on the level of care and patient experience. A values-based recruitment (VBR) system that prioritises the assessment of an individual's values when selecting for NHS roles and NHS-funded training courses has been identified as an important means of achieving an NHS workforce aligned with the values outlined in the NHS Constitution.

An online survey was distributed in spring 2014 to higher education institutions (HEIs) offering NHS-funded healthcare programmes. The survey aimed to understand the recruitment methods currently undertaken with a focus on how these are used to assess values. The survey was structured around four key stages: attraction, screening (or 'shortlisting'), selection and evaluation.

Responses were provided by 538 programmes representing an impressive 95% response rate. Results provide insight into the most frequently used selection tools (application forms and structured interviews) as well as identifying interesting trends across programmes (e.g. multiple-mini interviews are more commonly used for medical/dental programmes with group interviews more commonly used for nursing and midwifery programmes).

Implementing robust selection tools within significant resource constraints is challenging. This survey provides insight into the different approaches used by HEIs to achieve VBR suggesting there are varying degrees of quality. The need for longitudinal evaluation data examining the impact of selection methods on the values of the resulting workforce is of paramount importance, as is the requirement to take a multifaceted approach looking beyond recruitment issues alone.

A Chartered Occupational Psychologist, Helena specialises in the development and evaluation of high-stakes assessment and selection methods with a particular interest in the assessment of non-technical skills within the healthcare sector. Alongside colleagues at Work Psychology Group, Helena led on Project Three of the VBR Programme. This

included undertaking a literature review into VBR and investigating current recruitment practices undertaken within Higher Education Institutions (HEIs) and NHS Trusts to inform the development of the National VBR Framework. Helena has also been involved in the design, development and psychometric evaluation of the Situational Judgement Test (SJT) used as part of selection to the UK Foundation Programme and she is currently leading on the validation of the this selection process. As well as working within the NHS, Helena has worked within private sector and international healthcare organisations.

Anton I Botha, Department of Management, United Nations, USA

Situational judgment tests at the United Nations

With 250 000+ job applicants from 193 countries for just over 400 positions annually, the United Nations is faced with a number of staff selection challenges. These challenges include (i) large applicant pools entitled to fair and equal treatment, (ii) a need to improve predictive validity, and (iii) resource scarcity.

In order to meet these challenges and to narrow down applicant pools, the UN has embraced automated online selection tests. Among one of the methods chosen to assess applicants on mass is the use of Situational Judgment Tests (SJTs) based on the UN's Values and Competencies Framework.

This presentation looks at the methodology for the creation of value-and-competency-based SJTs, along with data from a large assessment campaign for UN Peacekeeping involving more than 12,500 candidates from 166 countries. Item characteristics and differences among candidate subgroups based on gender and nationality are deliberated. The conclusion discusses the lessons learnt and identifies opportunities for the UN to build long-term collaborative and mutually-beneficial research relationships with interested academic parties.

Anton Ivan Botha works as an Industrial Psychologist for the United Nations Secretariat in New York and is primarily responsible for the development of global staff selection assessments used by the UN. Born in South Africa, he is a recipient of the Mandela Rhodes (2008), the Trent Lott (2009), and the Fulbright (2011) Scholarships. He has Bachelor degrees in Human Resource Management, Business Management, and Philosophy as well as Masters Degrees in Psychology and Industrial Psychology from the Nelson Mandela University in SA and Montclair State University in the USA. He taught at universities in SA and Germany in fields as diverse as Human Resource Management, Finance, Research Methods, and Psychology and worked as a part-time consultant for Coca Cola and Mercedes Benz in SA. Prior to working in Academia he was employed by the Lord Chancellors Department in the United Kingdom running some of the UK's first technology-driven assessment centers.

Stephan J Motowidlo, Department of Psychology, Rice University, USA

Implicit trait policies about prosocial professionalism in medical practice

Prosocial implicit trait policies (ITPs) are beliefs about the professional utility of prosocial expressions. For physicians, they are beliefs about the professional utility of acts expressing compassion, caring, and respect for patients. Borrowing from literature about accentuation effects in judgments about the value of behaviors that express various traits, our central premise is that people who are highly prosocial accentuate the difference in the effectiveness of prosocial and antisocial acts more than people who are less prosocial do. Accordingly, we measure prosocial ITPs about medical professionalism by asking people to judge the effectiveness of specific prosocial and antisocial actions a physician might perform. We predict that the larger the difference between judgments about the effectiveness of prosocial and antisocial physician actions, the more prosocial a person is and the more likely he or she is to practice medicine with compassion, caring, and respect. The presentation will describe the development of a situational judgment test in a new, single-response format (instead of the traditional multiple-response format) to measure prosocial ITP for medical practice. I will report a series of studies that document relations between prosocial ITP, medical students' clinical effectiveness, and undergraduates' performance in role-play simulations of physicians' interactions with patients. He will also report studies that show prosocial ITP is correlated with agreeableness, benevolent values, social interests, emotional intelligence, and ethical ideology, but not with course grades based on academic content or admissions tests that are saturated with cognitive ability.

Stephan J Motowidlo is Herbert S. Autrey Professor of Psychology at Rice University. He received a BA degree in Psychology from Yale University in 1969 and a PhD degree in Industrial and Organisational Psychology from the University of Minnesota in 1976. Prior to his appointment at Rice University, he held academic positions at the University of Toronto, the State University of New York at Binghamton, the Pennsylvania State University, the University of Florida, and the University of Minnesota. He has published on various aspects of applied psychology in journals such as the Journal of Applied Psychology, the Journal of Personality and Social Psychology, Organizational Behavior and Human Decision Processes, Personnel Psychology, Academy of Management Journal, Academy of Management Review, the International Journal of Assessment and Selection, and the Journal of Applied Social Psychology, among others. Currently, his primary research interests are in the areas of affective experiences at work including emotion, mood, job satisfaction, and stress; personality antecedents of job performance; prosocial work behavior especially in professional occupations such as medicine and law; and non-traditional approaches to assessing characteristics related to personality expressions, such as situational judgment tests.

Eamonn Ferguson, Faculty of Science, University of Nottingham, UK

Personality: Myths, misconceptions and misunderstandings – implications for current and future medical education, selection and training

A number of myths and misconceptions exist about personality traits, such as, (1) traits (and trait expression) are stable and not open to change, (2) traits as distal predictors that lack predictive power, (3) traits have no diagnostic value, (4) some traits are good (e.g. conscientiousness) and other are bad (e.g. neuroticism). I will draw on current evolutionary theory and contemporary models of personality to dispel these myths and show that traits offer a much richer tool in medical education than the rather static deterministic manner in which they are currently used.

Drawing on our own and others studies (longitudinal and experimental) in medical selection and outside this domain and interpreting these within a contemporary theories of personality and trait expression in biology (evo-devo model), ecology (behavioural reaction norms), economics (technology models) and psychology (socio-genomic models; cost-benefit-trade off models).

This presentation will show that trait expression is best characterized as probability density function, giving traits an inherent flexibility. This flexibility can lead to change in mean trait expression depending on context (e.g. medical training). Further, all traits have costs and benefits and selection on one trait (like conscientiousness) can have short tern benefits but may be longer term costs. Thus I will argue that a dynamic assessment procedure is utilised and a more theatrical use of traits adopted.

Professor Eamonn Ferguson is chartered health and occupational psychologist, a Fellow of the Royal Society for Public Health, an Associate Fellow of the British Psychological Society, and co-founding president of the British Society for the Psychology of Individual Differences (www.bspid.org.uk/). He was recently awarded the honour as a "Distinguished International Affiliate" of the division of Health Psychology of the American Psychological Association. He is currently Professor of Health Psychology at Nottingham University.

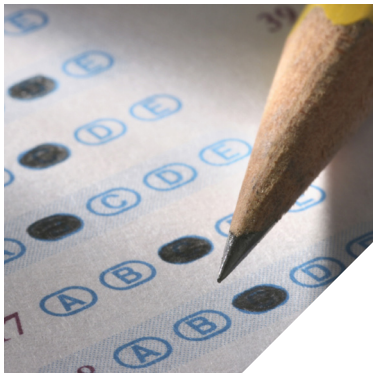
Professor Ferguson has published 146 peer reviewed academic journal articles to date (including in BMJ, Annals of Behavioural Medicine, Transfusion, Health Psychology, BMC Medicine; Psychosomatic Medicine) and his work has been funded by the HSE, ESRC, DEFRA, and Chief Scientists Office – Scotland amongst others.

His areas of academic interest are the integration of personality theory, health, and altruism. His theoretical work focuses on the integration of personality theory and behavioural economics and focuses on personality and pro-social preferences, risky decision making and the role of message framing. His applied work examines personality theory with respect to the selection and training of medical students and integrating economic, biological and psychological models to understand blood and organ donor behaviour.

David Good, Department of Psychology and King's College, University of Cambridge

Theoretical developments in selection discussant

From 2000 to 2008, Dr David Good was Education Director for the Cambridge MIT Institute and conducted a number of projects designed to develop Engineering, Enterprise and Innovation skills in students. Since October 2011 he has been Director of Education for the School of Biological Sciences in the University with responsibility for developing the educational provision for students studying the biological sciences and pre-clinical medical students. His research focuses on the application of psychology to technical, policy and assessment issues. With Prof Fiona Patterson he developed the Situational Judgment Test for selection into the Foundation Programme for UK medical students. With Dr Sara Savage he has been working on ideas concerning integrative complexity and the prevention of violent extremism. With Dr Alan Blackwell he directs the Crucible Network dedicated to interdisciplinary work in technology design with the specific goal of bringing together expertise from the Humanities and Social Sciences with that in Technology.



Poster abstracts

Ability of the UKCAT to predict performance in year 3 of medical school: A national study

Paul Tiffin, Hannah Hesselgreaves

Background

The UKCAT has been used in medical and dental student selection since 2006, providing a continuous metric of cognitive ability. Previous research suggests modest but statistically significant prediction of performance in years 1 (McManus et al. 2013). Smaller scale studies suggest this effect may persist into the clinical years of undergraduate medical training (Husbands et al. 2014; Sartania et al. 2014). We present evidence from the first national study to seek wide-scale evidence of predictive ability of the UKCAT in the clinical years, and establish to what, if any, extent, it adds value over and above that provided by traditional measures of academic attainment. Here we present some preliminary and provisional findings on year 3 progression.

Method

Data were provided by 16 UK universities. The outcome variables were dichotomised year 3 progression results for 6,866 medical students consisting of 'passing the year' first time versus 'other academic outcome' (e.g. resit exam or year). Predictor variables were UKCAT scores for all applicants standardised by year of sitting and A level UCAS tariffs standardised for students by year of entry.

Data were analysed using multilevel logistic regression. Medical school-level effects and previous A level attainment were adjusted for.

Results

Our univariate analyses showed that the odds of passing year 3 at the first attempt could be significantly predicted from all the UKCAT subscale scores. However, the verbal reasoning subscale (OR 1.26 95%CI 1.10-1.44) and overall UKCAT scores (OR 1.23 95%CI 1.05-1.45), when adjusted for A level performance, also demonstrated significant incremental predictive ability, over and above that provided by school educational achievement.

Main conclusions

Our findings are consistent with previous findings that the UKCAT has a significant ability to predict progression through medical school. This research demonstrates that although educational attainment can account for variance in performance in the clinical years,

overall UKCAT scores, and in particular verbal reasoning (VR) add incremental value in the prediction of academic success at medical school.

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Self-regulated learning; a new selection criterion?

Susanna M Lucieer[1], Wendy E de Leng[1], Remy MJP Rikers[2], Axel PN Themmen[1]
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Context

Medical schools all over the world aim to select those applicants who are able to graduate from medical school and become excellent health care providers. A broad range of selection criteria have been used that aim to measure important characteristics for medical professionals, ranging from cognitive ability to 'softer' skills such as empathy and integrity.
A highly needed skill for medical professionals that has not been used in selection is the ability to self-regulate one's learning, i.e. being a lifelong learner. Since self-regulated learning skills are not only important in the medical profession, but are also expected to be helpful to learn more effectively, it is of interest to investigate whether the level of these skills is related to academic performance and thus, could be an attractive criterion for admission.

Methods

The Self-Regulation of Learning Self-Report Scale (SRL-SRS) was used to investigate the first-year medical students' SRL skills planning, monitoring, evaluation, reflection, effort and self-efficacy (N=595, 73.9%). Students were divided into quartiles based on their first-year GPA. The questionnaire was validated and multinomial logistic regression analysis was used to investigate the relation between self-regulated learning and first-year GPA.

Results

SRL skills explained some of the variance in first-year GPA: $R^2 = .09$, Model χ^2 (18) = 1592.61, $p < .001$. Students with the first, the lowest quartile GPA (< 5.4) reported significantly less reflection ($\beta = -.10$, $p < .001$) and effort ($\beta = -.11$, $p = .003$) than students with the fourth, the highest quartile GPA (>6.5). In addition, students with the second quartile reported significantly less monitoring ($\beta = -.13$, $p = .01$) and reflection ($\beta = -.05$, $p = .015$) than students with the fourth quartile GPA.

Conclusions

A clear relationship between the self-regulated learning skills reflection, effort and monitoring, and first-year academic performance was identified. Since self-regulated learning is an important skill for medical professionals and the relation with academic performance is established, we argue that self-regulated learning could be an attractive criterion for admission.

Variation in widening access between UKCAT medical schools

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Background

Despite much activity and investment to widen access (WA), medicine in the UK remains dominated by those from a higher socio-economic status (SES)[1, 2]. A review of the literature and publicly available data, such as medical school webpages indicated that UK medical schools differ in their approaches to WA and there is little evidence of effective WA activity in medicine[3,4]. We sought to assess the variation between schools in the SES of applicants and those who obtain an accepted offer.

Methods

This was a retrospective observational study using data from 2009-2012 from the UK Universities and Colleges Admissions Service (UCAS) and UK Clinical Aptitude Test (UKCAT) registration data for 22 UK medical schools that require applicants to sit the UKCAT. UK domiciled applicants aged ≤20 years were examined, and defined as being low SES if their parents were National Statistics Socioeconomic Classification (NS-SEC) 4 or 5. For each school, the proportion of applicants, applicants with a conditional or unconditional offer, and applicants firmly accepting an offer who were NS-SEC 4 or 5 were calculated, and schools compared using risk ratios. Based on publicly available data, schools were defined as having high or low WA activity on a four-point scale, and associations between this and their applicant and offer characteristics examined.

Results

The 22 medical schools in this study varied in the percentage of applicants from NS-SEC 4/5 (2.3-8.4%), the percentage of applicants gaining a conditional or unconditional offer (6.0-36.2%) and the percentage of applicants firmly accepting that offer (2.5% – 26.1%). Levels of WA activity did not correlate with either applicant and offer rates. Schools appearing to have higher applicant rates had lower offer rates, and conversely those with lower NS-SEC 4/5 applicant rates had higher offer rates.

Main Conclusions

This study identified that significant variation between medical schools exists in terms of applications from, and offer rates to, those from a lower SES. This suggests effective strategies may be available. However, there was no association with the observable level of WA activity. Understanding variation will require a more detailed analysis of how schools implement WA and why their applicants and selection vary, which is required to underpin evidence-based approaches to WA.

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Variations in selection methods between UK medical schools for entry to undergraduate medical programmes

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Background

Selecting students for entry to medical school raises questions. Should the process ensure equity, predict human behaviour and define the characteristics of a good doctor? Although admissions for all higher education are rising, most medical students still come from higher socioeconomic groups[1]. This leaves medical schools open to criticism that existing selection methods do not grant equal and fair access to the medical profession. From data provided by medical schools in 2013, 7.5% of students were classed as having widening participation characteristics.

The General Medical Council (GMC), the UK regulator for doctors, commissioned research[2] to look into the effectiveness of selection methods used by medical schools and of widening access initiatives to promote fair access to medicine. The research showed that some methods are more effective than others, e.g. multiple mini interviews (MMI) over more traditional interviews. It is harder to see from the research how widening access benefits from different selection methods.

Subsequently in 2013 the GMC created the first central record of selection methods used for each UK undergraduate medical course. This poster presents a summary analysis.

Method

The GMC prepared the selection process flowcharts using information taken from medical school websites. They were emailed to the relevant admission lead at each medical school for comment and validation. The charts grouped together those with similar selection methods for each course type and included widening access methods.

Results

For full 5/6 year medical programmes, 26% of schools shared two selection paths and 13% shared a further two. The remaining 61% each had a different selection process. The majority of schools (87%) used an aptitude test as part of the selection process. For the full programme, 71% used the UK Clinical Aptitude Test (UKCAT). For graduate entry programmes, 13% used the Graduate Medical Schools Admission Test (GAMSAT).

On interview style for full programmes, 29% used MMI and 13% were structured or semi-structured. 58% conducted traditional style interviews.

On widening access, 13% of schools used contextual data (additional data to supplement stated qualifications and entry criteria) as part of the full programme selection process. For one year pre-medicine foundation courses, 75% collected this.

Main conclusions

The poster will show the large divergence in selection methods across medical schools. As a consequence of this work the schools have formed the Selection for Excellence Executive Group to look at consistency within selection methods. The GMC are monitoring selection processes yearly to track progress.

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Examining a widening participation initiative through a Figured Worlds lens

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Background

This research focuses on a long term widening participation (WP) initiative set up by the dental faculty of a highly selective higher education institution (HEI). This initiative centres on support for selected mentee pupils at secondary schools in socioeconomically deprived areas of London. The pupils are mentored from year 9 through to entry into higher education (HE), by dental students at the HEI. This study is a qualitative longitudinal study of stakeholders' (pupils', teachers', dental students' and HEI staff) evolving perceptions of this new (and rapidly evolving) outreach activity. It is hoped that an understanding of stakeholders' perspectives may provide insights that could enhance this initiative and inform other, similar, WP activities. The data include transcripts of semi-structured interviews (with pupils, school teachers, HEI staff) and focus groups (with dental student mentors), ethnographic field notes of events (e.g. introductory talks to Year 8 pupils) and documentary artefacts (e.g. information packs). Preliminary data analysis is on-going and will inform subsequent data collection.

Methodology

Discourses on educational underachievement frequently frame low participation of individuals from disadvantaged backgrounds in a deficit model perspective, such as lack of social capital. I aim to interpret the activities of this WP initiative through a 'Figured Worlds' perspective, expounded by Holland, Lachicotte, Skinner and Cain[1]. Figured Worlds are "socially produced, culturally constituted activities" ([1], p. 40-41). Individuals are recruited into Figured Worlds as a result of their social position and personal history.

Through the activities and interactions of participants in a Figured World, new symbols, meanings and identities are generated via improvisation and production of artefacts. This can also lead to a change in the Figured World that mediates the change.

Preliminary data analysis

Aspects of Figured Worlds (recruitment, interpersonal interaction, agency, appropriation of artefacts and identity development) are identified through theory-led data analysis. Some examples are dental students' agency in interacting with mentee pupils and the appropriation of information as artefacts by mentee pupils. These aspects of the data will direct future data collection.

Discussion

This study examines identity formation (e.g.,being a successful mentor) through interpersonal interaction (e.g. relationship between mentors and mentee pupils), individual agency (e.g., pupil selection by school staff) and choice in the Figured World of this WP initiative. Viewed from this theoretical lens, this study may advance knowledge of WP initiatives beyond the static notions of achievement and underrepresentation in HE.

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Are selection scores and course outcomes related for undergraduate medical students?

Annette Mercer[2], Margaret Hay[1], Katrina Simpson[1], Ian Puddey[2], Ben Canny[1], Wayne Hodgson[1]

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Background

Selection processes for undergraduate medical courses at the University of Western Australia (UWA) and Monash University utilising three components: an academic score based on performance in state-wide examinations (Australian Tertiary Admissions Rank, ATAR); an aptitude test widely used in Australia and New Zealand (Undergraduate Medicine and Health Sciences Admission Test, UMAT) and an interview.

Methods

Demographic, selection and assessment data were collected for commencing medical students from 2002 to 2011. Latent Growth Curve modelling, using M-plus, was undertaken to determine the profiles of the selection components across three time points: T1 (transition from campus-based to clinically-based training), T2 (transition to pre-internship), and T3 (end of course). The selection scores were used as predictors of achievement in the course to evaluate the trajectory of change (through latent intercept and slope) across the three time points.

Results

Complete data across the three time points were used for 1388 students (51% female).

There was good fit for the model (RMSEA= 0.05, CFI= 0.99, TLI= 0.96, SRMR =0.01). Chi square was statistically significant, possibly due to the large sample ($\chi 2(8)= 35.64$, p= 0.00). Intercepts across time were positive for AGE (z= 2.20, p= 0.03); ATAR (z= 14.01, p= 0.001); INTERVIEW SCORE (z= 3.861, p= 0.001) and negative for UMAT3 (non-verbal reasoning) (z= -2.55, p= 0.01). A general decline was seen in results (inter-individual) across time, but this was not consistent for all students. Covariance of intercept and slope of change (intra-individual) showed that those who performed well at the beginning continued to do so. INTERVIEW SCORE was the only predictor to be positively associated with increased results over time (z= 2.446, p<0.001).

Conclusions

Our model showed good fit to the data. Age, ATAR and interview score were positive predictors across time. High-achieving students generally remain as high achievers, in spite of a general decline in results for all students across the course. INTERVIEW SCORE showed a positive trajectory over time, indicating greater association with achievement in the course in the later clinical years.

Acknowledgment

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Stakeholder views on selection to undergraduate medicine in Ireland

Maureen E Kelly, Richard Arnett, Thomas Dennehy, Eileen Duggan, Fidelma Dunne, Niamh Gallagher, Martina Hennessy, Susan Lapthorne, Jason Last, Deirdre Mc Grath, Andrew W Murphy, Laragh Stevens, Siun O'Flynn

Background

Stakeholder views are an important measure of selection tool validity. Categorised as political validity[1], this is an under-researched aspect of selection. Since 2009 selection to Irish undergraduate medical schools is based on the school exit Leaving Certificate Examination (LCE) and the Health Professions Admission Test-Ireland (HPAT-Ireland), with an approximate 2:1 weighting. HPAT-Ireland is a multiple choice test covering: 1. Logical Reasoning/ Problem Solving; 2. Interpersonal Understanding and 3. Non-Verbal Reasoning[2]. The aim of these studies was to establish stakeholder opinion on the acceptability and appropriateness of Irish medical school selection tools.

Methods

Five separate studies were conducted with a range of stakeholders over 3 years. Study 1 Medical School Applicants[3]; Embedded mixed methods, postal survey; n=1229, response rate 37%. Study 2 Medical students[4]; Embedded mixed methods, questionnaire; n=291, response rate 77%. Study 3 Career guidance counsellors[5]; Embedded mixed methods, questionnaire; n=187, response rate 15%. Study 4 General Practitioners[6;] Quantitative, postal survey; n=122 response rate 79%. Study 5 Doctors from various clinical specialities[7]; Qualitative, semi structured individual interviews; n=15.

Results

The Leaving Certificate is broadly endorsed by all stakeholder groups with 93.4% of

applicants (n=1148); 98.3% of medical students (n= 286), 97.8% of guidance counsellors (n=183) and 96.7% of general practitioners (GPs) (n=118) viewing it as appropriate. The use of aptitude tests in principle was supported by 73.8% of applicants (n=907), 68% of medical students (n= 198), 52% of guidance counsellors (n= 97) and 69.7% of GPs (n= 85). However questions were raised about the face validity and job-relatedness of HPAT-Ireland in particular Section 3, which 35.6% of applicants (n=437) and 43.4% of GPs (n=53) thought irrelevant. Conversely Sections 1 and 2 were viewed as relevant with some doctors calling to "expand the middle section" to include analysis of a "video or even an auditory clip" 7 Other concerns centered on questions of fairness. With respect to gender 36.7% of medical students (n=107) thought HPAT-Ireland would be easier for males. However doctors perceived that it was "..a complex assessment for either male or female candidates"[7]. Doctors expressed concerns that socioeconomic factors could disadvantage some students particularly as they viewed that HPAT-Ireland was susceptible to coaching. 42.5% of applicants (n=535) consider that a HPAT-preparatory course impacted positively on their performance.

Main Conclusions

While there is some support for the revised entry and selection criteria in Ireland equity of access, equal opportunity and job-relevance are common concerns across all stakeholder groups.

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Predictive validity of recruitment into public health specialist training in the UK

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Background

In 2009 an assessment centre, looking at critical thinking (Watson Glaser Critical thinking Appraisal) and numerical reasoning numeracy (Rust Advanced Numerical Reasoning Appraisal) was introduced to identify candidates to invite to a selection centre for recruitment into public health speciality training in the UK. In 2010 a situational judgment test (SJT) developed for use in the public health context, was added to the assessment centre. These three tests have been used consistently since then.

Method

A cohort analysis of the 2009-2012 appointees was undertaken to explore the association between performance in the overall recruitment process (i.e. assessment and selection centre) and progression through the training scheme, as evidenced by success rates in the Part A and Part B UK Faculty of Public Health professional exams, and by the likelihood of obtaining a satisfactory Annual Review of Competence Progression (ARCP)

Outcome

Results: Of the 281 registrars appointed between 2009-12, 223 appointees had sat the Part A exam; 134 (60%) had passed, 42 (19%) had failed, and 47 (21%) had banked one or other of the two parts of the exam. Of the 155 who had taken the Part B exam, 140 (90%) had passed and 15 (10%) had failed. Of the 195 who had an ARCP recorded, 172 (88% had a satisfactory outcome 1; 90% of unsatisfactory ARCPs were in registrars who had not passed Part A at the first attempt.

A discrimination analysis using receiver operating characteristic (ROC) curves found that each of the different elements of the recruitment process independently contributed to the likelihood of passing Part A and Part B. The odds ratio of individuals with a high score in the overall recruitment process compared to those with a low score of passing Part A first time was 2.64 95% CI 1.52-4.58 and Part B was 3.09 95% CI 1.00- 9.52. ARCP seems not to be an independent outcome measure of progress in training.

Main conclusions of the study

The recruitment process for public health specialist training demonstrates good predictive value with progression as defined by passing key professional exams of Part A and Part B in a timely manner. The overall AC score is better prediction than individual test components, and the overall recruitment score is better prediction than AC or SC separately.

However, the sample size is small, particularly for prediction of Part B performance, and further work needs to be done to extend the cohort to confirm these details.

The challenges of conducting a multi-institutional predictive validity study

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Background

This Australian multi-centre study is investigating the predictive validity of the Undergraduate Medicine and Health Sciences Admission Test (UMAT) and other admissions criteria on medical course performance. A file of admissions data (Year 12 academic performance, Interview and UMAT scores) and within course assessment scores has been established for students who commenced study from 2006 to 2013 at 10 Universities. Compilation of data across 10 universities presented a significant challenge. The purpose of this presentation is to share our solutions to these challenges so that others undertaking a multi-centre study may benefit from our experiences.

Method

The Deans of the 11 Australian and New Zealand universities who use the UMAT in selection of medical students were invited to join the study. Ten institutions participated. Each received AUD$10,000 to assist with data collection. The lead institution prepared the content for submission to each institution's research ethics committee, which initiated engagement in the study. A Qualtrics survey was used to obtain details of admissions and course-related assessment data so that a template could be designed to collect data in a standard format. Few universities used the template, instead submitting data in a range of formats making standardisation of data onerous. Difficulties arose from inconsistencies with variable format (age or date of birth), large variability in assessment data format (pass/fail vs. grades/percentages), and varying levels of engagement with the project across participating universities.

Data were sent to an independent source (ACER) for de-identification. The Monash team merged the de-identified data into a single file. The file consists of 10471 medical students across 10 universities, admissions and within course assessment data for 8 commencing and 2 completing medical student cohorts. This represents the most comprehensive database of student admissions and within course performance data ever established in Australia and New Zealand. The admissions scores (UMAT, Year 12 and Interview score) will be used as predictors of achievement in the course across specific time points. We look forward to sharing our findings in early 2015.

Acknowledgment

The UMAT Consortium for funding the research project

Validation of the FY1 selection tools

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Background

Since 2012, selection to the UK Foundation Programme (FP) has consisted of an Educational Performance Measure (EPM) and a Situational Judgement Test (SJT). In combination, the scores from the two measures determine the rank allocation of around 8,000 medical graduates to FP places annually. The present study seeks to establish the predictive validity of the selection tools by examining the extent to which performance on each measure is associated with training outcomes achieved during Foundation Year One (F1). SJTs used in other high stakes settings, including in medicine, have been found to have good levels of predictive validity (see: Lievens et al, 2008; Prideaux et al., 2011; Patterson et al, 2012) however this study represents the first analysis of the predictive validity of the F1 SJT.

Method

This study will examine the application scores of a sample of 391 F1 doctors who were the first cohort to undertake the new application process for entry to FP 2013. Data were gathered from trainees who had received the highest and lowest overall application scores across five foundation schools (n=160 high scorers, n=231 low scorers). Training performance data were gathered using a bespoke questionnaire which was designed based on an established methodology (see: Patterson et al, 2012) with items criterion matched to the domains identified as important for an F1 doctor. Data were also gathered relating to trainees' Annual Review of Competency Progression (ARCP) outcomes and any incidence of remedial action received during F1.

Results

Analysis is currently underway and is due to be completed by end of November 2014. Results will examine the relationship between performance on the selection tools and performance during F1. Differences in performance ratings between high and low scorers will be established using independent sample t-tests. The significance of the relationship between application scores and ratings during training will be established using correlations. Independent sample t-tests and Chi-squared tests will be used to establish the significance of differences between application scores for trainees that received satisfactory and unsatisfactory ARCP outcomes and trainees that did and did not receive remedial action.

Main Conclusions

The results from this study will inform the future direction regarding the F1 application process, including the appropriateness of the weighting of the two components (SJT and EPM) which are currently equally weighted. The results will also inform the appropriateness of using application scores as a means of identifying trainees who may be at risk of experiencing difficulties during F1 (i.e. receiving an unsatisfactory ARCP outcome or remedial action).

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Free admission to medical school: Does a knowledge-based end-of-first-year exam impact the profile of future doctors?

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Background and aims

Using reliable and valid methods is considered essential to select students with the greatest potential to become efficient, professional and caring future doctors. To date, the admission process of students to medical school varies among and within countries[1]. Cognitive tools such as MCAT and GPA are the strongest predictors of medical students' undergraduate success[2], as well as non-cognitive tools, such as MMI, SJT and some psychological traits (i.e. conscientiousness and extraversion), although weaker[3,4,5,6]. In Geneva, Switzerland, admission to medical school is free and students are actually selected at the end of their first study year. In fact it is the capacity to train students during the clinical years that sets the number of students who will be admitted to pursue the entire curriculum of medical studies. The first-year is highly competitive since there is nearly 500 applicants to 170 places. Students are selected on the basis of their scores on an end-of-first-year knowledge-based MCQ exam. The question arises whether this cognitive-only selection process could disadvantage students with suitable non-cognitive qualities such as empathy, openness, extraversion[7]. This study aims at: comparing the profile of selected and non-selected medical students using a set of cognitive and non-cognitive features; investigating the predictive validity of these features on first-year exams scores.

Method

First-year medical students(class 2012, n=364) answered a self-reported questionnaire assessing their professional motivations (intrinsic, extrinsic, care), deep and surface learning approaches (2R-SPQ), task-focused, emotional or avoidant stress coping (CISS), personality traits (NEO Big five), i.e. openness, conscientiousness, extraversion, agreeableness and neuroticism, empathy (JSE), self-reported high school final grade (GPA), cognitive abilities (EMS[8]). Multivariate ANOVA was used to compare the profiles of selected and non-selected students. Multivariate linear regression was used to predict whether and how each feature predicted exams scores. The role of gender is considered because of gender-sensitivity of some features.

Results

Compared to non-selected ones, selected students demonstrated higher cognitive abilities (higher GPA and EMS, $p<0.001$), were less surface learners ($p<0.04$), more conscientious and open ($p<0.001$), and more frequently male ($p<0.001$). Regression on exam scores explained 30% of the total variance ($p<0.001$). Higher GPA, EMS, and conscientiousness predicted higher scores on exams.

Main Conclusions

Selection based on highly-competitive MCQ exams advantaged conscientious students

with high cognitive abilities. It did not disadvantage students showing qualities presumably important for caring doctors such as agreeableness and empathy. The challenge remains to enhance selection of students with such qualities.

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Student perceptions of selection criteria for medicine: Do attitudes differ by social and educational background?

Jo Emery, Sarah McElwee, University of Cambridge

Background

The majority of UK medical schools now use admissions tests alongside other selection criteria, such as academic attainment, relevant work experience, traditional interviews and Multiple Mini Interviews (MMIs). Given the desire to widen access to medicine it is important that selection criteria do not differentially deter applicants from particular social groups. We wished to investigate the perceptions of potential medical applicants towards different selection criteria, with particular emphases on whether these criteria are perceived as fair and valid, daunting, or a deterrent to application. A major aim was to compare the views of students from different educational and social backgrounds.

Method

A questionnaire survey of prospective medical school applicants was employed (N=749). Gender, ethnicity, school type and widening participation (WP) indicators were collected. A mix of Likert-scale and open-ended questions generated both quantitative and qualitative data. For each Likert-scale question the criteria compared were: academic attainment

(GCSE grades, A-level predicted grades); UCAS form information (references, personal statements); relevant work experience; different admissions test skills (verbal and numeric reasoning, abstract reasoning, subject-specific skills, writing skills, behavioural skills); traditional interviews; MMIs. Analyses investigated the percentages of each response to each criterion and compared the ratings of different participant groups. Qualitative data are presented to illustrate key findings.

Results

Admissions tests, interviews and MMIs were perceived as similarly daunting but received low ratings as a deterrent to application. Most selection criteria were seen as somewhat open to the impact of external help but personal statements and relevant work experience received the highest modal ratings here. Few differences were seen between state versus independent school participants or between WP versus non-WP participants. Gender differences were more notable; females rated most selection criteria as more daunting than did males and males had more confidence that they could perform well on all criteria (although confidence was also fairly high for females). Independent school and non-WP participants rated traditional interviews as very slightly more fair and valid than did state and WP participants. However, all participant groups rated the fairness and validity of admissions tests, MMIs and interviews quite positively.

Main Conclusions

The results give no cause for concern that particular selection criteria are a deterrent to application. Admissions tests, interviews and MMIs are generally perceived as valid and as a fair way to compare students from different backgrounds.

Situational judgement and script concordance testing: New ways to assess international medical graduates

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Background

The Alberta International Medical Graduate (AIMG) Program uses several evaluations to identify IMGs appropriate for entrance into postgraduate medical training. These include a national MCQ exam[1], a national OSCE[2], and a locally administered multiple mini-interview (MMI)[3]. However, narrative workplace-based assessments (WBAs) still indicate that clinical reasoning and the "intrinsic", or non-medical expert, CanMEDS roles[4] are areas of weakness in some candidates. In an effort to screen for these attributes at an earlier point in our evaluation process, we developed the Clinical Aptitude Exam (CAE).

Methods

We created the CAE, a computer-based exam composed of script concordance[5] and situational judgement[6] items. Subject matter content was contextualized for a Canadian generalist practice. We referenced exam performance of applicants to the 2014 cycle of the AIMG Program against that of University of Calgary final-year medical students. AIMG Program candidates were then randomly selected to participate in a four-week workplace-based assessment (WBA). We are exploring the correlations among IMG performance

on the MCQ exam, OSCE, MMI, CAE and WBAs, to determine the incremental validity contributed by the CAE.

Results

Preliminary analysis of the CAE results revealed less concordant thinking between IMGs and Canadian medical students in the areas of psychiatry and paediatrics, relative to internal medicine and surgery. Further detail will be provided as the analysis continues.

Conclusions

Initial quantitative data from the CAE supports qualitative WBAs. Further iterative validation comparisons will determine to what extent the exam identifies characteristics not currently highlighted in the AIMG program evaluation process.

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Selecting for professionalism in medical school: The added value of a situational judgement test

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Introduction

Recent studies have started to show the usefulness of Situational Judgement Tests (SJTs) for selection purposes in the context of medical education, in particular for first year medical students, for the UK Foundation programme and for postgraduate medical education. In this study we aimed to assess the potential usefulness of SJTs for selection of sixth year medical students into a fast track for specialty training. To reduce time for test takers and to prevent "reduced cognitive function" that may result from a long test[1],

we purposefully selected a small number of items for our SJT.

Methods

A 20-item SJT intending to assess professionalism in medical school was tested within two samples of master students: applicants for the fast track (N=48) and regular master students (N=91) at Erasmus MC Medical School in the Netherlands. Items were selected from an existing 70-item SJT developed in the UK. We tested reliability, validity and applicant (and non-applicant) perceptions of SJT fairness.

Results

Firstly, contrary to expectations, results of both samples neither supported the criterion-related validity of the SJT nor its incremental validity over a cognitive predictor in predicting students' clerkship performance. Secondly, in the applicant sample, the incremental validity of the SJT over résumé ratings was also tested yet not supported. Furthermore, contrary to expectations of fairly low criterion-related validity of résumé ratings, résumé ratings correlated moderately positively with students' clerkship performance. Thirdly, in both samples, the mean of student perceptions of SJT fairness was significantly lower than expected. Fourthly, in the fast track sample, a comparison of estimates of internal consistency and test-retest reliability yielded mixed results with respect to the most adequate method to assess SJT reliability. Finally, in the regular master student sample, the cognitive predictor accounted for approximately 16-17% of the variance in the criterion.

Discussion

Our results suggest that a number of 20 SJT items might be too limited, especially for differentiating within a homogenous sample of students from one medical school. In addition, our results imply that one should be cautious in using SJTs developed elsewhere and tailored to specific contexts. As such, the present study contributes to the literature by shedding light on the circumstances in which SJTs may not be effective. As our findings may be due to our relatively small sample size rather than the number of SJT items, our intention is to expand our study with an additional sample of fast track applicants.

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Attributes of core and specific competencies important for selection and development in training in Irish general practice: A qualitative study

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Background

Professional competence has been defined as 'an individual's ability to make deliberate choices from a repertoire of behaviours for handling situations and tasks in specific contexts of professional practice, by using and integrating knowledge, skills, judgement, attitudes and personal values, in accordance with professional roles and responsibilities'

Lawrence et al[1]. The role of the Medical General Practitioner (GP) is constantly evolving. The tasks a GP has to perform are determined by the health care system in which the GP works and the changing needs and demands of the patients[2]. The GP role requires maintenance of competencies to ensure the delivery of good quality care to patients. Patterson et al[3] devised a competency framework covering 11 domains with specific behavioural indicators considered essential to the role of the GP in the UK. The aim of this study is to review a job analysis validated competency questionnaire (VCQ) designed by Patterson and colleagues[3,4] to see whether the competencies identified match those relevant to the role of the Irish GP. Furthermore, this study sought to refine or identify new competencies that might better reflect the needs of the current and future Irish GP.

Summary of work

A focus group of 10 experienced GPs involved in postgraduate medical education were tasked with the objective of evaluating the relevancy and applicability of the VCQ to GP training in Ireland. Template Framework Thematic analysis King[5] using the VCQ as a template was used to guide data collection and analysis.

Summary of results

A number of core themes emerged 'competencies essential at selection', those needing 'to be developed during training', 'modified competencies' and 'difficulties associated with the assessment of competencies' at point of selection.

Conclusions

The VCQ proved a comprehensive framework instrument. All competencies were deemed important to develop during training, more importantly a high level of agreement among participants, identified key competencies; empathy and sensitivity, professional integrity, coping with pressure and conceptual thinking, which, if not present at point of selection, were considered difficult to develop or advance in the course of training.

Take-home message

Stakeholders identified key non-academic competencies which if not present at selection were difficult to develop throughout training in the specialty of General Practice.

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Using Multiple Mini Interview in an internationally diverse student population

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Background

International medical students, those who study medicine outside of their country of citizenship, account for a growing proportion of medical students worldwide[1] – up to 7.5% in the UK, and over 15% in Australia[2,3]. A recent systematic review called for research into the use of Multiple Mini Interview (MMI) in different cultural contexts[4]. Ireland graduates significant numbers of international medical students annually. The aims of this study were to run a MMI in an internationally diverse student population to establish its a) Fairness with respect to age, gender, socioeconomic group and candidate background, b) Predictive validity, and c) Stakeholder (MMI candidates and assessors) acceptability.

Methods

A mixed methods, explanatory sequential design was used. All newly enrolled First Year students were invited to sit a previously validated 10 station MMI. Quantitative data comprised: demographics, current selection tool scores, MMI scores and First Med results. Qualitative data were generated from focus group with stakeholders: two MMI Assessor groups (n=7 and 6), one EU student (n=7) and one Non-EU student group (n=8).

Results

N= 109 students. 41.3 % (n=45) were Non-EU and 35.8% (n=39) did not have English as first language. MMI Scores were not impacted by Age (r=0.15, n=109, p=0.12); Gender (Females (n=68) 66.9%; Males (n=41) 67.3% p=0.83) or Socioeconomic Class (SEC 1&2 (n=81) 67.1%; SEC 3/4/5 (n=24) 66%, p=0.66). Non-EU students and those without English as first language achieved significantly lower MMI scores (difference in mean 11.9% and 12.2%, P<0.001). MMI was associated with International English Language Testing System score (r=0.5, P<0.01). MMI predicted EU student performance on a communication/ clinical skills OSCE (r=0.27; p=0.03; n=64), but this was not significant for the non-EU group. Two themes emerged: Authenticity and Cultural Awareness. MMI was seen to offer deep "insight into how you cope and handle things" (Non-EU student). Cultural specificity and English language proficiency were perceived to disadvantage international students. "...it is so difficult because our cultures are different so I can't put empathy there" (Non-EU student reflecting on a station concerning alcohol misuse). Equally assessors had concerns: "I'm assessing from my...cultural viewpoint .. I'm probably not ...very reliable" (Assessor). Stakeholders' recommendations included assessor cultural awareness training, developing culturally neutral stations and lengthening station duration to accommodate non-native English speakers.

Main Conclusions

Understanding the influences for differences in performance of international candidates, and responding to recommendations to counteract these influences is important to help ensure the fairness and acceptability of MMI.

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Admissions into veterinary medicine in the UK: Evaluation of a Situational Judgement Test to assess professional attributes

Máire Kerrin, Fiona Patterson, Emma Rowett, Liz Mossop, Karen Braithwaite

Background

Admissions into Veterinary Medicine in the UK is highly competitive. Annually, Nottingham School of Veterinary Medicine & Science (NSVMS) attracts approximately 1,900 applicants for just 100 places. This presents challenges for the delivery of a practical, robust and fair admissions process. Best practice suggests that selection should be underpinned by the principles of good assessment and alignment to the role, utilising multi-method programmatic approaches and employing sophisticated measurement models (Prideaux et al., 2011). Previous research has shown that for selection into medical schools, when based on a thorough role analysis and developed using psychometric best practice, Situational Judgement Tests (SJTs) are among the best and most valid method of selection (Cleland et al., 2012). The aim of this research was to develop, and improve, the current approach to selection at NSVMS.

Method

A role analysis was conducted to identify the professional attributes required for the role of a veterinary student. This was used to inform the design of an SJT targeting four key attributes: Empathy & Building Client Relationships, Professional Integrity & Trust, Team Work and Resilience. Scenarios were developed based on best practice (Patterson et al., 2012). All SJT items were developed in collaboration with Subject Matter Experts (SMEs). Following a pilot alongside live admissions in 2012, the SJT was evaluated in terms of psychometric properties and candidate reactions. The SJT was then used as a sifting tool during live admissions in 2013.

Results

The live selection data (N=1707) returned a normal distribution, suggesting that the SJT is able to differentiate between applicants. Analysis of group differences on the test showed that there were no significant differences in SJT total scores between males and females. Item-level analysis showed that the majority of the SJT items worked satisfactorily. The

reliability for the SJT was α=.73; sufficient for an SJT used in high stakes selection.

Main Conclusions

Psychometric analysis provides evidence to suggest that an SJT is a reliable measurement methodology in this context, which is able to differentiate between candidates and has favourable candidate reactions.

These findings build on the existing evidence base, highlighting the importance of designing SJT scenarios to be relevant for the target role, to enhance face validity and candidate acceptability. SJT design should be conducted in collaboration with SMEs. For the SJT to continue to differentiate between candidates and remain effective, it is recommended that an annual cycle of further development and piloting is conducted.

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The importance of contextualisation in test development: Evidence from a Situational Judgement Test to assess non-academic attributes for entry to medicine in Singapore

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Background

Each year the National University of Singapore (NUS)'s Yong Loo Lin School of Medicine attracts 2000 applicants for a place onto their medical programme. Prior to 2013, a 2-stage selection process was used; this process involved the evaluation of an online application, a portfolio, a written essay and two unstructured interviews. In 2013 a programme of improvement was launched to improve face validity and fairness in the selection process, whilst widening the inclusion of the various sub-groups of candidates in the region. One key aspect of such programme was the development and implementation of a Situational Judgement Test (SJT) to assess for non-academic attributes in the selection of medical students.

Summary of work

A role analysis was carried out in 2013 to identify three non-academic attributes that are

targeted in the NUS SJT: Integrity and ethical responsibility, empathy and interpersonal skills. Subsequent stakeholder consultation was carried out in 2014 to refresh the details of the attributes ensuring close alignment to contemporary practice. As part of the test development, emphasis was given to contextualisation interviews, local expert reviews, and concordance panels that were held with members of the NUS admissions task-force to refine items and produce response keys that are suitable and highly relevant to the local context. The SJT was used live in April 2014 (N= 816).

Summary of results

Evaluation of the 2014 operational SJT reported good levels of reliability (α=.84-.86). Many participants reported that the SJT was a fair, relevant and appropriate method for selection; that it also provided insight into a medical career. No significant sub-group differences were found. Evidence of criterion-related validity was established as applicant scores on the SJT correlated significantly with their results on a Multiple Mini Interview assessment (r=.132) that was administered in parallel.

Conclusions

Evaluation provides evidence to suggest that the contextualised NUS SJT is a fair, reliable and valid selection methodology for assessing non-academic attributes for entry to medical school in Singapore. In addition to providing support for the importance of contextualisation during test development, these findings also suggest that the methodology utilised to enable contextualisation is effective.

Promoting and assessing values using a bespoke SJT: A case study from residential care

Analise La-Band, Fiona Patterson, Helena Edwards, Mike Falvey

Background

Concerns regarding the unsatisfactory treatment of patients in the health and social care system have been increasingly highlighted in recent years, most notoriously via the Mid Staffordshire National Health Service (NHS) Foundation Trust Public Inquiry (Francis QC, 2013). The report highlighted the significant impact of staff values and behaviours on the level of patient care, recommending increased emphasis on, and commitment to, common values throughout the healthcare system and the enhancement of recruitment practices, amongst other areas, to integrate such values. In addition, the costs of poor staff retention in the social care sector have been identified as unsustainable (Skills for Care, 2011), highlighting a need to consider recruitment practices which are fit for purpose in this context. This poster presents the development of a bespoke values-based Situational Judgement Test (SJT) to be utilised as part of selection for recruiting frontline care staff. There is good evidence from healthcare settings that appropriately designed SJTs are a useful methodology to evaluate a range of professional attributes (e.g. Lievens & Patterson, 2011).

Method

A prototype SJT is currently in development as an initial proof of concept and in order to inform further development of the tool. In accordance with best practice, a collaborative approach to development involving current job incumbents and others closely involved

with the role is being undertaken. Following prototype development, the SJT will be further developed and piloted alongside existing selection processes as part of the selection of carers. A thorough psychometric analysis and evaluation of the pilot data will inform further refinement of the SJT prior to its use in live recruitment.

Results

Early consultation and development activity within the case-study organisation highlighted some important considerations and potential challenges for measuring values in this context. These include the applicant population consisting largely of individuals with a lower level of educational achievement, for which English may be a second language and who may have limited or no previous experience in an employment context. Furthermore, there is a need to ensure engagement with the process and a commitment to delivery of values-based recruitment more broadly is achieved.

Conclusion

This case study presents a novel approach to values-based recruitment, specifically within the context of social care where there is an absence of any evidence-based literature. In addition as there is limited evidence in the broader selection literature of the appropriate methods for assessing values, the case study is well-placed to provide insight and have an impact in this area.

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Supporting the widening participation agenda in medical and dental admission selection in the UK: Early evidence from the SJT

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Background

The UK Clinical Aptitude Test (UKCAT) is used in the selection process by a consortium of UK university medical and dental schools to help universities to make more informed choices from amongst the many very highly qualified applicants who apply for the medical and dental degree programmes. A Situational Judgement Test (SJT) to evaluate important non-cognitive attributes was introduced in 2013 and sits alongside tests of verbal, quantitative and abstract reasoning and decision analysis. Approximately 26,000 applicants take the UKCAT tests to compete for 8,000 places annually. In addition to being an effective, valid and reliable tool, a key aim was to develop an SJT solution that is supportive of the widening participation agenda and reduces the differences between

demographic groups that are often observed for more traditional tests.

Method

The SJT targets three domains: integrity, perspective-taking and team-involvement. On an annual basis, scenarios are developed based on best practice (Patterson et al., 2012) in collaboration with Subject Matter Experts (SMEs). A key challenge in the item development process is that the test content should not directly or indirectly measure declarative or procedural knowledge of the role, whilst maintaining content and face validity. Following a pilot alongside live admissions in 2012, the SJT was introduced live in 2013.

Results

Results from 2013 (N=25,679) show the SJT differentiates effectively with good internal reliability (α=.77-.80) and alternate form reliability (α=.73-.77). Evidence of criterion-related validity was established as SJT scores correlated significantly with verbal and decision-making tests. Score effect sizes regarding differences in applicants' socioeconomic status were notably lower for the SJT than for UKCAT cognitive tests. In addition, no clear trend was found regarding the means for the differing occupational groups. Unlike the cognitive ability tests, those in the higher occupational classes did not always score higher than other groups.

Main Conclusions

Early evidence shows that the UKCAT SJT is a reliable test that can effectively differentiate between applicants. Preliminary validation research has found encouraging results regarding correlations between SJT scores and in-training performance variables. Analysis of socio-economic based group differences shows positive early evidence of support for widening participation. From a theoretical perspective, Implicit Trait Policies (beliefs shaped by experiences in the form of fundamental socialisation processes i.e. parental advice or modelling (Motowidlo & Beier, 2010)) provide a useful framework on which to further understand how SJT solutions can contribute to the widening participation agenda.

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Situational Judgement Tests in medical admission: Are there differences between socioeconomic groups?

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The importance and benefits of developing strategies to increase access to medical

education for students from under-represented minority (URM) backgrounds has been emphasized in the literature[1,2]. In the UK, one of these initiatives has been to develop a medical admissions test for entrance in medical or dental education (The UK Clinical Aptitude Test or UKCAT) that aims to minimise any potential discrimination of groups from URM backgrounds, while at the same time not caving in on its ability to predict academic success. Since 2012, the four cognitive ability tests that make up the UKCAT have been supplemented by a situational judgment test (SJT) that assesses noncognitive skills. In other countries, such SJTs have been shown to be of added value for broadening the constructs measured and predicting interpersonal performance in medical school[3]. The objective of the present study is to investigate if socioeconomic status (SES) has an effect on UKCAT scores in two separate cohorts (2012 and 2013). In line with the documented correlation between SES and SAT scores in the US[4], we hypothesize that applicants with high SES would obtain higher scores on the cognitive ability tests than people with low SES. As measures of noncognitive skills, SJTs typically evidence lower subgroup differences in test scores[5]. Therefore, we expect that for SJT scores people's SES would not play a role. Information provided by applicants about their parent(s) occupation served as our measure of SES. High SES (2012: N = 19,057; 2013: N = 20,015) and Low SES (2012: N = 1,645; 2013: N = 1,831) variables were created. Given the large sample sizes we focused on effect sizes to interpret the practical meaning of the results[6,7]. Across parallel forms of the UKCAT, we found robust evidence of a substantial effect of SES on cognitive ability test scores, 2012: d .35, 95% CI [.30–.40]; 2013: d .36, [.31–.40]. For the SJT this effect was negligibly small, 2012: d .03, [-.02–.08]; 2013: d .10, [.05–.15]. These results suggest that –apart from the typical focus on cognitive ability test scores – additional reliance on SJT scores in deciding who to offer access to medical education could increase the chances of applicants from disadvantaged socioeconomic backgrounds to get selected into medical education.

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Predictive validity of the UK Clinical Aptitude Test: Preliminary findings from a national study

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Background

The UK Clinical Aptitude Test (UKCAT) contributes to the selection systems of the majority of UK medical schools. It includes four cognitive ability tests (abstract reasoning, quantitative reasoning, verbal reasoning, and decision analysis) as well as measures of non-cognitive qualities.

Previous research has reported that the UKCAT has predictive validity for performance in the first year of medical school[1], which may extend into later years[2]. Here we present some preliminary findings on the predictive validity of the cognitive subscales of the UKCAT for performance in the clinical years of medical school, based on a large-scale national study.

Method

A series of univariate regression analyses was conducted to investigate the predictive validity of the four UKCAT subscales on medical school performance (theory and skills scores) in years three (n=4449) and four (n=3452). Performance scores were standardised within year and medical school.

These analyses were re-run, controlling for school educational performance (A level or Scottish or Irish equivalent) in order to estimate the incremental predictive validity of the UKCAT scores.

Results

Univariate regression analyses indicated that all four UKCAT cognitive subscales predicted both theory and skills performance during years three and four of medical school.

Controlling for the effect of school educational performance, all four UKCAT cognitive subscales predicted both theory and skills performance during the third year of medical school. During the fourth year of medical school, theory performance was predicted by all four UKCAT cognitive subscales, but skills performance was predicted by the abstract reasoning and verbal reasoning UKCAT subscales.

School educational performance predicted theory and skills performance during the third year of medical school, but only predicted theory performance during the fourth year of medical school.

Main conclusions

These preliminary findings indicated that the UKCAT can predict theory and skills performance in the later years of medical school, over and above school educational performance. Furthermore, whereas school educational performance did not predict fourth year skills performance, the abstract reasoning and verbal reasoning subscales of the UKCAT did offer predictive validity for fourth year skills performance.

Further data are likely to become available as approximately 25% of the medical school entrants have yet to be linked to the UKCAT scores. Once more complete linkage is

achieved these analyses will be repeated.

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Exploring the relationship between the Multiple Mini Interview and UKCAT Situational Judgement Test scores

Adrian Husbands, Matthew Homer, Jonathan Dowell

Background

In 2013, the United Kingdom Clinical Aptitude Test (UKCAT) introduced a non-cognitive Situational Judgement Test (SJT) to be used by medical and dental schools in addition to the aptitude component. SJT constructs (perspective taking, integrity and team involvement) show considerable overlap with those of the Multiple Mini Interview (MMI), and it is possible that some aspects of MMIs with its resource-intensive administration could be more efficiently assessed using SJTs. The overall aim of this research is to establish the concurrent validity of the SJTs using demonstrably reliable MMIs as the benchmark.

Methods

A total of 5 UK medical schools (Dundee, Norwich, Nottingham, St. George's, Aberdeen) and 2 dental schools (Cardiff, Dundee) agreed to participate in this study and submitted data. Across institutions MMI station content comprised of 7-10 observed interactions with a role-player and traditional face-to-face structured interview stations, each ranging in duration from 5 to 7 minutes. Relationships between SJT, MMI scores and demographic variables (gender, age at application, ethnicity, nationality, and socioeconomic class) were analysed using graphical, ANOVA and correlation techniques.

Results

Raw SJT scores and MMI standardised (z) scores were matched for 2940 of 3021 (97.8%) 2013-2014 MMI candidates. A modest correlation of .12 ($p < .05$) was observed between MMI and SJT overall, with 4 out of 7 institutions showing significant correlations of between .14 ($p < .05$) and .30 ($p < .01$). Relationships between SJT and MMI scores were stronger among the less affluent socioeconomic classes 4 and 5 (.45, $p < .01$ and .28, $p < .05$ respectively) compared to classes 1 to 3 (.07, $p = .39$ to .10, $p < .05$ respectively). MMI-SJT associations were also stronger for overseas domiciled compared to applicants from the UK (.29, $p < .01$. and .10, $p < .01$ respectively).

Main Conclusions

Relationships between MMI and SJT scores provide modest support for the concurrent

validity of MMIs and SJTs as assessments of shared non-cognitive skills. Variations in the strength of this relationship across institutions suggest this relationship is moderated by variation in MMI content and administration across institutions. Smaller MMI-SJT associations within social classes 1-3 and UK domiciled applicants may highlight the influence of coaching or sociocultural factors on the discriminatory power of these assessments. Further analysis will investigate the influence of MMI station type, sitting MMIs at more than one institution and the effect of confounding variables on SJT-MMI relationships.

Assessing value expressive behaviours

Lyn Dale, Sarah McElwee, University of Cambridge

The Cambridge Personal Styles Questionnaire (CPSQ) is a personality trait assessment which has been developed over four years in liaison with medical, nursing and healthcare schools. It is based on the five-factor model of personality but modified to focus on traits which previous research implicated in educational and professional outcomes (e.g. Vidal et al. (2009); Lievens et al. (2009); O'Connor & Paunonen (2007); McManus et al. (2004)). The online questionnaire measures 13 individual traits which can be combined to assess broader behavioural styles such as the 'social style' of caring, helping and working with others.

CPSQ supports the values-based recruitment agenda by measuring instrumental values. Social psychologist Milton Rokeach (1973) proposed two sets of values: terminal values or desired end states such as friendship, equality, security, and instrumental values which are the actions through which people demonstrate and live their values. Terminal values can be measured by asking people about what they believe. However, for selection purposes this is unlikely to effective because values are often so deep rooted many people are not aware of them. Also, values-based questions are likely to be transparent and easy to fake a good answer. The solution founded on Rokeach's taxonomy is to assess values by finding out what people do i.e. instrumental or 'value expressive' behaviours.

In an ideal world selectors would observe candidates' behaviour but for many recruiters this is not realistic in terms of resources. Asking people what they do is a practical and valid solution with adaptations to increase assessment effectiveness. CPSQ uses an advanced rate/rank format to build in faking good resistance and increase score accuracy. A meta-analysis by Salgado and Táuriz (2014) highlights the power of this type of personality instrument to predict academic and occupational outcomes with equal to or larger validities than other selection methods, including rigorous approaches like structured interviews and assessment centres (multiple exercises).

Responses to CPSQ are reported against a framework of entry level competencies (abilities, behaviours, attitudes, interpersonal skills) which are aligned with National Health Service values. The closer candidates' responses match competency requirements, the greater the potential person-career fit. To test this assumption the Admissions Testing Service is currently involved in a programme of criterion-related (outcome) validation research with healthcare faculties.

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