From Waitressing to Whitehall: Occupational psychology in a changing world

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Overview

1. Research & consulting work streams on selection in the medical profession
   - Organisational context
   - Job analysis studies
   - Selection methods (SJTks)
   - Validity studies

2. Personal reflections regarding implications for science, practice and, on being an OP
Selecting doctors in the UK
Background

• In 2002-2007 the Dept Health re-engineered the entire training & career development pathway for doctors in all specialties (Modernising Medical Careers)

• Gateways to progression changed placing emphasis on developing robust assessment systems
Doctor training & selection gateways

Medical student

Postgraduate trainee

Independent Practitioner

Selection

Selection

Selection

Medical School

F1 F2

ST 1 2 3 4 5 6 7

Foundation Training

Specialist Training

Consultant

4-6 years

2 years

7 years

~ 16 specialty routes
Selection through the ages…

“Work for me, son – I knew your father.”

“Fill out the application form for HR and the job is yours, mate.”

“It isn’t an interview – just be an informal chat in the mess, sweetie. Just a formality.”

1970

THE BAY

1980

1990
Financial costs of training doctors

- 5 year medical schooling: £250k per student
- Medical school - Consultant takes minimum of 15 years
- 3-year training programme for one GP costs £275k
- 3,250 GPs are appointed each year
- Approx 30,000 GPs in UK.
- Wage bill is several £billion per annum

- Given high human & financial stakes targeting appropriate selection criteria & using valid screening tools are paramount.
Struck-off gynaecologist given NHS contract

August 1, 2002

Dr Neale was struck off in Canada in 1985 following the deaths of 2 patients. He returned to the UK, where he practised normally despite his judgement. In 1995 he was paid off & given a clean reference to leave after concerns were raised about his performance…..

Only in 2000 did he appear before the GMC, charged with 35 counts of clinical incompetence…
Context

• High profile, high stakes, strong public interest
• Large applicant numbers - security risks
• Context of major (& controversial) organisational change
• Legal scrutiny of selection processes
• Applicants above average cognitive ability
• Strong professional ‘Union’ (BMA)
• Monopoly employer
• Independent coaching firms - sole purpose is to help applicants be successful in selection
Key questions

*What attributes are important to be an effective clinician?*

*What methods are available to test these in high stakes selection (distal & proximal predictors)?*

*Should we use personality testing & cognitive ability tests?*

*Beyond some basic assessment – is a lottery the best option??*
Why not use a lottery system?

Dutch medical schools abandon selection for lottery system for places

Jan Coebergh Newcastle

Two Dutch medical schools will no longer independently select some students as these students do not perform better at medical school.

Until 1999, admission into the nine Dutch medical schools was based entirely on a lottery. Based on academic grades, the average chance of getting a place was 35%, rising to 70% for those with the highest grades.

The law changed in 1999 after a media row over a bright girl who was not allowed to enter medical school three years in a row. Universities were allowed to select up to half their

Some used this allowance to promote entry of mature students, graduates, and ethnic minorities.

In recent evaluations at four universities, three found that selected students did not get higher grades than those given places by the lottery. They concluded that selection was not beneficial. Two universities will stop selecting since the costs are high and will return to the lottery admission policy. One university did find that selected students performed better and will continue.

In contrast to the experiences
Selecting GPs in the UK

- 8,000 applicants per year for 3,250 training posts
  - job analysis to develop selection criteria
  - longitudinal validation studies
  - utility analyses
  - analysis of applicant reactions
GP Job Role

3 independent job analysis studies:

- Group-based CIT with GPs (n=35)
- Behavioural Observation of GP Consultations (n=33)
- CIT Interviews with Patients (n=21)

1) Empathy & sensitivity (sensitive to patient's emotions & feelings)
2) Communication skills (active listening, clarity of explanation)
3) Problem-solving (identifies root cause & decision-making)
4) Professional integrity (respect, vocational enthusiasm)
5) Coping with pressure (calm under pressure)
6) Clinical expertise (clinical process awareness, identifying options)
GP Job Role

“…establish immediate empathic rapport…define nature, history of problems, the aetiology, patient ideas, concerns, expectations, effects of problems….consider other continuing problems/at-risk factors…reach shared understanding of problems with patient….choose appropriate action for each problem…use time/resources appropriately” (Pendleton et al, 1984)

- GP role requires rapid decision-making in an interpersonal environment, involving complex & significant cognitive/ non-cognitive demands of the individual
Clinical Problem Solving (CPS)

- Applying clinical knowledge in relevant contexts, e.g. diagnosis, management
- Developed by SMEs
- Item types:
  - Extended match items
  - Single/multiple best answer multiple choice
- Operational test: 100 items, duration 90 minutes
## Reduced Vision

| A. Basilar migraine                  | F. Central retinal vein occlusion |
| B. Cerebral tumour                  | G. Optic neuritis (demyelinating) |
| C. Cranial arteritis                | H. Retinal detachment             |
| D. Macular degeneration             | I. Tobacco optic neuropathy       |
| E. Central retinal artery occlusion  |                                   |

For each patient below select the **SINGLE** most likely diagnosis from the list above. Each option may be selected once, more than once or not at all.

1. A 75 year old man, who is a heavy smoker, with a blood pressure of 170/105, complains of floaters in the left eye for many months and flashing lights in bright sunlight. He has now noticed a "curtain" across his vision.

2. A 70 year old woman complains of shadows that sometimes obscure her vision for a few minutes. She has felt unwell recently with loss of weight and face pain when chewing food.
Situational Judgement Test (SJT)

- Situational Judgement Tests (SJTs) are a measurement methodology designed to assess judgement in work-relevant situations:
  - Present challenging situations likely to be encountered at work
  - Make judgements about possible responses
  - Scored against pre-determined key

- Validity (predictive & incremental) is well-established
SJTs – Example (FBI)

You are shopping when you notice a man robbing the store. What would you do?

(choose most likely & least likely response)

A. Leave the store as quickly as possible and call the police.
B. Try to apprehend the robber yourself.
C. Follow the man and call the police as soon as he appears settled somewhere.
D. Nothing, as you do not wish to get involved in the matter.
Example SJT item for a junior doctor

You are reviewing a routine drug chart for a patient with rheumatoid arthritis during an overnight shift. You notice that your consultant has inappropriately prescribed methotrexate 7.5mg daily instead of weekly.

Rank in order the following actions in response to this situation (1= Most appropriate; 5= Least appropriate)

A  Ask the nurses if the consultant has made any other drug errors recently
B  Correct the prescription to 7.5mg weekly
C  Leave the prescription unchanged until the consultant ward round the following morning
D  Phone the consultant at home to ask about changing the prescription
E  Inform the patient of the error
What do SJTs offer?

• Cost-effective to develop, administer & score
• Generally smaller subgroup differences than cognitive ability tests
• Favourable applicant reactions & high face validity
How do SJTs work?

- SJTs reflect complex situations & events tailored to the particular context/level
- Relationship with cognitive ability & non-cognitive aspects may vary widely depending on design parameters
- Research shows construct validity is problematic
- For GP selection we targeted professional dilemmas focusing on non-cognitive attributes in complex interpersonal scenarios (empathy, integrity, coping with pressure; Patterson et al, 2009)
GP Selection: Predictive & Construct validity

Study 1. Predictive validity of short-listing
Study 2. Supervisor ratings 1 year into training
Study 3. End of training outcomes (exam) after 3 years
Study 4. Associations between CPS, SJT & two cognitive ability tests
Study 5. Path analysis to determine incremental validity for each selection method
Evaluation of three short-listing methodologies for selection into postgraduate training in general practice

Fiona Patterson,1,2 Helen Baron,2 Victoria Carr,2 Simon Plint5 & Pat Lane4

OBJECTIVE This study aimed to evaluate the effectiveness and efficiency of three short-listing methodologies for use in selecting trainees into postgraduate training in general practice in the UK.

METHODS This was an exploratory study designed to compare three short-listing methodologies. Two methodologies – a clinical problem-solving test (CPST) and structured application form questions (AFQs) – were already in use for selection purposes. The third, a new situational judgement test (SJT), was evaluated alongside the live selection process. An evaluation was conducted on a sample of 463 applicants for training posts in UK general practice. Applicants completed all three assessments as part of the selection process that resulted in their selection into non-CSPT training posts.

RESULTS Results indicate the structured AFQs, CPST and SJT were all valid short-listing methodologies. The SJT was the most effective independent predictor. Both the structured AFQs and the SJT add incremental validity over the use of the CPST alone. Results show that optimum validity and efficiency is achieved using a combination of the CPST and SJT.

CONCLUSIONS A combination of the CPST and SJT represents the most effective and efficient battery of instruments as, unlike AFQs, these tests are machine-marked. Importantly, this is the first study to evaluate a machine-marked SJT to assess non-clinical domains for postgraduate selection. Future research should explore links with work-based assessment once training programs start to address them.
A new selection system to recruit general practice registrars: preliminary findings from a validation study

Fiona Patterson, Eamonn Ferguson, Tim Norfolk, Pat Lane

Abstract

Objective To design and validate a new competency based selection system to recruit general practice registrars, comprising a competency based application form, referees' reports, and an assessment centre.

Design Longitudinal predictive validity study and a matched case comparison.

Setting South Yorkshire and East Midlands region, United Kingdom, comprising three deaneries.

Participants 46 of 167 doctors were followed-up in training after three months in practice, and 20 general practice trainers selected using traditional recruitment methods.

Main outcome measures Trainer ratings of trainee performance in practice on targeted competencies.

Results Performance ratings of targeted competencies at the assessment centre predicted trainer ratings of performance in the job.

Furthermore, those trainees recruited through the new competency based process performed significantly better in the job than those recruited through traditional recruitment processes.

Conclusion A new competency based selection process using assessment centres improves the validity of selection of general practice registrars compared with traditional selection techniques.

Eleven competencies have been described for general practice. Of these, six were targeted for the selection process: empathy and sensitivity, communication skills, clinical expertise, problem solving, professional integrity, and coping with pressure. The remaining five competencies were judged to be more appropriate for training (for example, awareness of legal and ethical issues).

The validity of this process is addressed by two research questions. Firstly, does performance at an assessment centre predict performance in a job (predictive validity) and, secondly, do doctors recruited through this process perform better in a job than those recruited through traditional selection processes?

Methods

We used a longitudinal design and a matched case comparison to tackle the two research questions. Independent assessors were blinded at all stages of selection and in practice three months into training.

Samples

Intervention group Table 1 details the demographics and sample sizes at each stage of the selection process. From an initial sample of 354 doctors applying for a training programme within three deaneries of the former Trent region during 2001–02, a random stratified sample
Evaluating candidate reactions to selection practices using organisational justice theory

Fiona Patterson,1,2 Lara Ziberras,1 Victoria Carr,2 Bill Irish3,4 & Simon Gregory4,5

OBJECTIVES This study aimed to examine candidate reactions to selection practices in postgraduate medical training using organisational justice theory.

METHODS We carried out three independent cross-sectional studies using samples from three consecutive annual recruitment rounds. Data were gathered from candidates applying for entry into UK general practice (GP) training during 2007, 2008 and 2009. Participants completed an evaluation questionnaire immediately after the short-listing stage and after the selection centre (interview) stage. Participants were doctors applying for GP training in the UK. Main outcome measures were participants’ evaluations of the selection methods and perceptions of the overall fairness of each selection stage (short-listing and selection centre).

Conclusions selection methods at both the short-listing and selection centre stages were consistently high over the 3 years. Similarly, all selection methods were considered to be job-related by candidates. However, in general, candidates considered the selection centre stage to be significantly fairer than the short-listing stage. Of all the selection methods, the simulated patient consultation completed at the selection centre stage was rated as the most job-relevant.

CONCLUSIONS This is the first study to use a model of organisational justice theory to evaluate candidate reactions during selection into postgraduate specialty training. The high-fidelity selection methods are consistently viewed as more job-relevant and fairer by candidates. This has important implications for the design of recruitment systems for all specialties and, potentially, for medical school
Study 5. Theoretical model showing selection methods & their link to job performance

Lievens & Patterson (in press) *Journal of Applied Psychology*.  

Note. CE = Clinical Expertise, E = Empathy, C = Communication, PS = Problem Solving, PI = Professional Integrity, and CP = Coping with Pressure.
Implications for practice

- Strong **predictive validity** translates into gains in **utility**
- **SJT** is an innovation in this context. We are designing SJTs for all specialties, for medical school admissions & internationally
- **Selection criteria** are being reviewed informed by new job analysis studies with the RCGP
- **Political validity** is an important concept in this setting
- Focus on **organisational change** rather than ‘selection’ per se
Personal reflections regarding implications for science, practice and, on being an OP
From Waitressing to Whitehall

1986
University
Waitressing

1990
Ford Motor Company
PT PhD
Chartership

1995
Boots Corporation
PT PhD

1998
University of Nottingham
Publications

2000
IWP, Sheffield University
Research income

2003
City University
Work Psychology Group Ltd

2006
Work Psychology Group Ltd
City University

2010
Work Psychology Group Ltd
University of Cambridge

Dept of Health Whitehall

Dept of Health Whitehall
Lessons Learned?

- Be clear of your own motives - integrity
- Proactivity, resilience & tenacity
- Make it happen - flexibility
- Delayed gratification?
- You’re only as good as those around you
- Invite others to challenge your thinking regularly
- Health & happiness are paramount
Concluding messages
From Waitressing to Whitehall

- Future of OP relies upon influencing corporate & governmental *policy* agendas
- Our work must aim to be both *practically relevant* & *scientifically meaningful*
- Maximising opportunities for practising *pragmatic science* - artificial ‘science vs. practice’ debate
- Reflections on *career development*
Thank you

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