

UNIVERSITY OF  
BIRMINGHAM

*Evaluating the impact of postgraduate  
education in manipulative  
physiotherapy on clinical reasoning*



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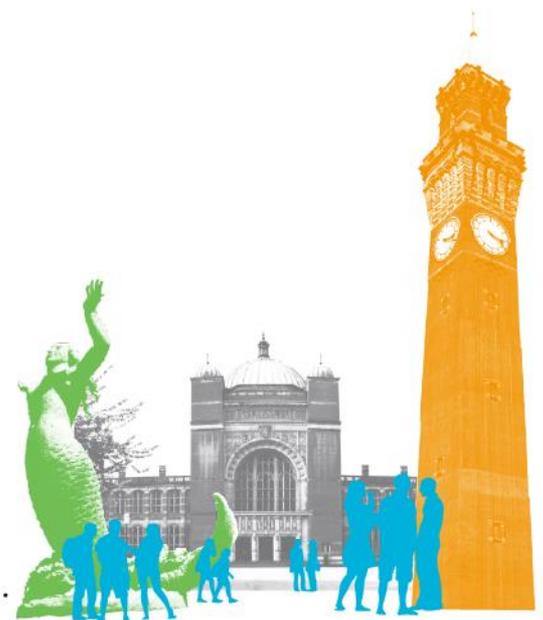
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# Overview

- Background
- Education in OMT
- Impact and professional development
- Clinical reasoning tools
- Summary

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# Background

- Advanced clinical reasoning skills: cornerstone of advanced OMT (Rushton and Lindsay, 2010)
  - Clinical reasoning processes
  - Knowledge
  - Metacognition (Higgs et al, 2008)
- Promotes clinical autonomy and expertise (Edwards and Jones, 2007)
- Prerequisite for senior clinical posts in the UK (NHS, 2005; Green et al., 2008).
- IFOMPT Educational Standards aim to promote ‘excellence of clinical and academic standards for manual /musculoskeletal physiotherapists’ (<http://www.ifompt.com/>)

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# OMT Education

- Theory and practice based modules/ units aimed at developing clinical reasoning skills
- Range of evidence supporting the use of educational approaches, such as
  - problem-based learning,
  - guided observation,
  - capturing and reflecting on therapists' reasoning style (Ryan and Higgs, 2008)
  - actual or simulated patients (Edwards and Rose, 2008)
  - case reports (Rivett and Jones, 2008)
  - etc.

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# Scope of Practice: Dimensions & Competencies

**Dimensions:** EBP, Biomedical, Clinical and Behavioural Sciences, Knowledge, Communication, Practical Skills, Clinical reasoning, Research, Clinical expertise and commitment to CPD

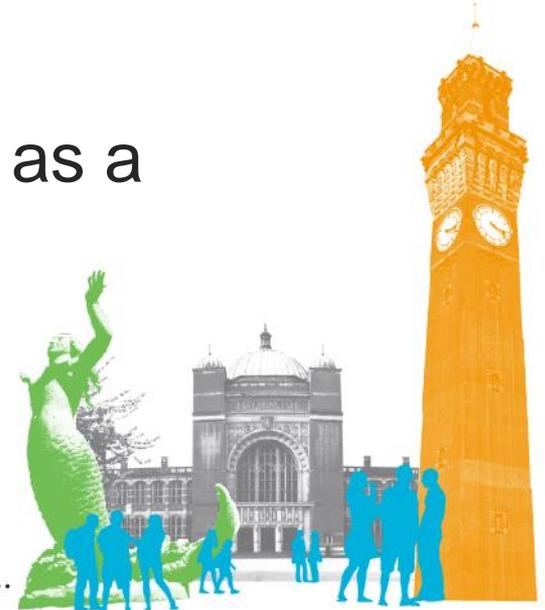
(IFOMPT, 2008)

## Competencies

Components of each dimension stated as a performance outcome.

- Knowledge
- Skills
- Attributes

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# Professional development and expertise

- Differences between novices and experts (Doody and McAteer, 2002; King and Bithell 1998; Petty et al., 2011)
- Career progression (Green et al., 2008; Perry et al., 2011, Petty et al., 2011, Constantine and Carpenter, 2012)
- What is less clear is the **IMPACT** of different educational approaches on changes in reasoning.

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# IMPACT

- Measuring impact – change in **practice, knowledge** and **beliefs** (Turner & Simon, 2012)
  
- Conceptual approach to education (Kennedy, 2005):
  - Deficit training mastery model (technical skills, procedural knowledge)
  - Transformative (theory-practice, metacognitive skills)
  - Transmission  transformative
  
- Need to understand the **processes** and **mechanisms** that facilitate change

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# IMPACT

- Impact evaluation paramount in guiding professional development investment (James & McCormick, 2009)
- However...existing evaluation frameworks (Guskey, 2002), Logic Models (Tallis, 2010) offer “one size fits all”
- May fail to acknowledge the localised nature of PG initiatives designed and delivered *in situ*.
- **Challenge** – construct learning evaluation tools that account for how individuals learn in different situations, and in turn, how learning cultures (e.g. PG programme) influence the practices, actions and dispositions of individuals

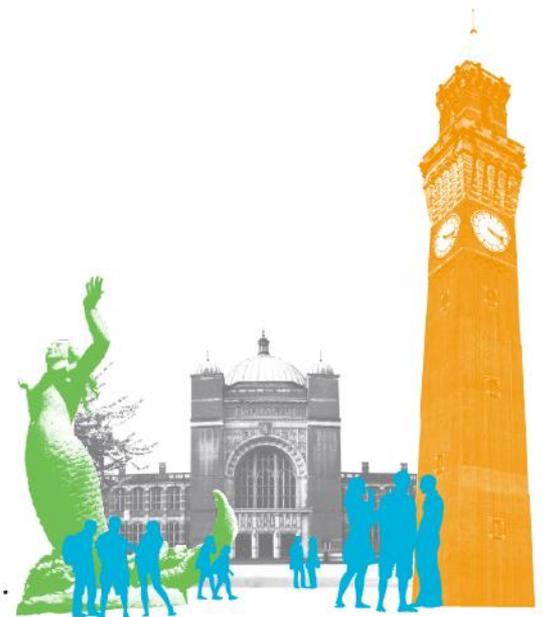
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# Measuring clinical reasoning

- How to measure clinical reasoning
- Range of assessment approaches which use pre-defined criteria e.g masters level
- Applied subjectively to evaluate change
- Diagnostic Thinking Inventory
- Script Concordance Test

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# Diagnostic Thinking Inventory

- 41 item self-administered questionnaire to quantitatively measure the diagnostic reasoning style of medical doctors (Bordage et al., 1990)
  - knowledge structure
  - thinking flexibility
- reliable and valid measure within outpatient physiotherapist population (Jones, 1997)

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# DTI - example questions

## 1. When the patient presents his symptoms,

I think of the symptoms in the precise words used by the patient

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I think of the symptoms in more abstract terms than the expressions actually used (e.g. acute/ bilateral)

## 2. In considering each diagnosis,

I try to evaluate their relative importance

--	--	--	--	--	--

I try to give them equal importance or weighting

## 3. In thinking of diagnostic possibilities,

I think of these possibilities early on in the case

--	--	--	--	--	--

First I collect the clinical information and then I think about it

## 4. When I am assessing a patient,

I often get one idea stuck in my mind about what might be wrong

--	--	--	--	--	--

I usually find it easy to explore various possible diagnoses



# Script Concordance Test

- Used in range of healthcare settings (Lubarsky et al., 2013)
- Measure changes in reasoning that occur with professional development (Meterissian, 2006)
- 25 brief 'cases scenarios' with three questions nested within each case
- Test developed using set guidelines to evaluate against experts
- Assess
  - reasoning in ill-defined clinical scenarios
  - the organisation of knowledge base

**I. A 55-year-old farmer came to your clinic complaining of right buttock pain.**

If you were thinking of:	And then you find:	This hypothesis become:					I have limited knowledge
		-2	-1	0	+1	+2	
a) SIJ dysfunction	Positive sacral compression test						
b) Lumbar referred pain	New pain is produced down the leg with L4 springing/PAIVMs						
c) Hip arthritis	Pain is reduced with passive hip ROM in supine.						

**-2 : The hypothesis is much less likely than it was before the new information became available**

**-1 : The hypothesis is a little less likely than it was before the new information became available**

**0 : The hypothesis is neither more nor less likely than it was before the new information became available**

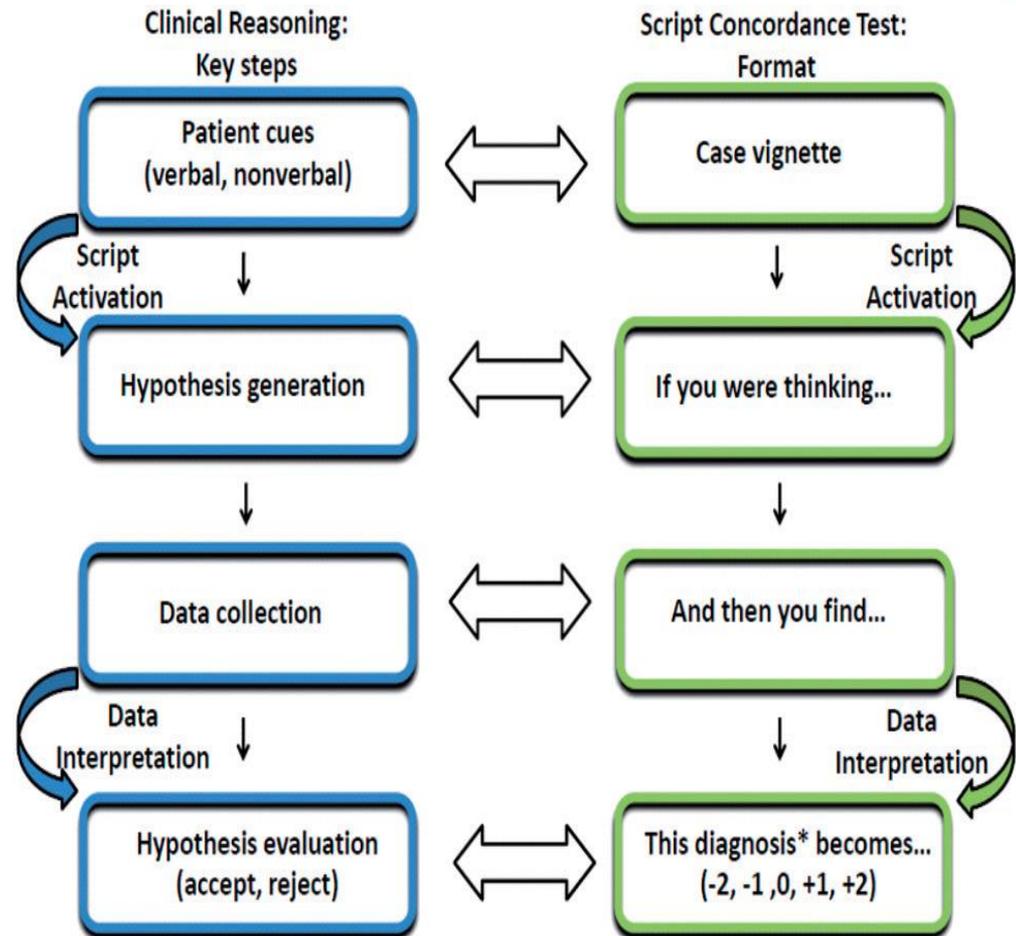
**+1 : The hypothesis is a little more likely than it was before the new information became available**

**+2 : The hypothesis is much more likely than it was before the new information became available**

# SCT

- Does not allow for examination of
  - ability to generate appropriate hypotheses or collect important information in a given clinical context
  - data interpretation/hypothesis evaluation stage of clinical reasoning

(Lubarsky, 2013)



\* Or investigation, or treatment

# Discussion

- Useful aid to evaluate aspects of clinical reasoning
- Limitations of tools
  - Validity of SCT and to certain extent DTI untested in OMT populations
  - Valid for specific aspect of clinical reasoning
  - Appropriateness?
  - Responsiveness?
  - Interpretability?
  - Feasibility of SCT (test development, number of questions, analysis method)

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# Summary

- OMT programmes through adoption of minimum internationally agreed standard strive to promote 'excellence of clinical and academic standards for manual /musculoskeletal physiotherapists'
- Wide range of educational processes utilized to promote clinical reasoning
- Withstanding limitations tools are available to evaluate clinical reasoning although evidence of use to measure impact of PG programmes
- **Processes** and **mechanisms** that facilitate change within programmes are not well understood, supporting the need for further research in this field.

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Underpinning Assumptions	Your planned work – what you intend to do		Your intended results – what you expect to happen		
	RESOURCES / INPUT (positive or negative factors influencing development)	ACTIVITIES (what is done with the resources)	OUTPUTS (the direct product of activities/what we do)	OUTCOMES (changes in participants due to programme) (Rushton & Lindsey, 2010)	IMPACT (changes in organisations, communities or systems due to the programme)
Programme has a role in supporting OMT development					
Change is positive					
Traditionally practice has had a culture of CPD	Programme support	Dedicated qualified staff, SVL, mentors	The range of learning/educational activities	High level background knowledge	Improved clinical reasoning in professional practice - leading to expertise in advanced manipulative physiotherapy and best patient care
Historically, professional development underpinned by formal qualifications	Experience / qualifications of lecturing/mentoring	Programme of assessed modules which assist the development of skills, knowledge and attributes in OMT across the 10 dimensions of the IFOMPT Standard document)	Raise the profile OMT professional development	Increased problem solving skills and justification for decision making	
Improving clinical reasoning skills will improve quality of patient care	Learning and teaching	Create a sustainable network of support	A collegial approach to knowledge dissemination and development of EBP	High level psychomotor skills	
Learning through social interaction	Planning and funding	Lecturing, supervision and mentoring	Raise expectations	Patient centred approach	
Need to create a culture of learning	Resources: library, journals, facilities	Facilitate regular group meetings with contributors and participants	Build relationships and self esteem	Adaptability	
	Virtual learning environment			Critical approach to practice	
				High level of metacognition	
				Creative practice	
				Increased confidence	
				Critical analysis of EBP	
				CPD	

# OMT Physical Therapist: Roles

- The competencies are central to the practice of an OMT Physical Therapist (See IFOMPT Standard Document, 2008)
- 1) The OMT Physical Therapist as an expert / clinical decision-maker / clinician
- 2) The OMT Physical Therapist as a communicator
- 3) The OMT Physical Therapist as a collaborator
- 4) The OMT Physical Therapist as a manager
- 5) The OMT Physical Therapist as a health advocate
- 6) The OMT Physical Therapist as a scholar
- 7) The OMT Physical Therapist as a professional

(<http://www.deptmedicine.utoronto.ca/CanMEDS.htm>)

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