

PATTERN RECOGNITION IS A CLINICAL REASONING PROCESS IN MUSCULOSKELETAL PHYSIOTHERAPY

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STATEMENT OF ORIGINALITY

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I hereby certify that the work embodied in this thesis is the result of original research, the greater part of which was completed subsequent to admission to candidature for the degree.

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ABSTRACT

Pattern recognition is a non-analytical clinical reasoning process which has been reported in the medical and allied health literature for some time. At a time when clinical problem solving was largely considered to consist of the analytical process of hypothetico-deductive reasoning, pattern recognition was introduced in the literature with observations of greater efficiency and accuracy. The research that followed these apparent opposing models of clinical reasoning resulted in significant growth in the understanding of problem solving in healthcare. On commencing this thesis the knowledge surrounding pattern recognition in physiotherapy was insufficient for its inclusion in educational design. Consequently the aims of the study described in this thesis were to clearly identify pattern recognition using high fidelity case methods and observe its relationship with accuracy and efficiency.

The study utilised a single case study with multiple participants. A real clinical case with a diagnosis of high grade lumbar spine spondylolisthesis was simulated using a trained actor. This provided a high fidelity case study method allowing the observation of more realistic problem solving practices as compared with the common low fidelity paper case approach.

Two participant groups were included in the study to investigate the common belief that pattern recognition is an experience based reasoning process. The expert group comprised ten titled musculoskeletal physiotherapists with a minimum of ten years overall clinical experience and greater than two years experience following the completion of postgraduate study. The novice group included nine physiotherapists in their first year of clinical practice following completion of an undergraduate degree.

Qualitative data collection methods included observation of the participant taking a patient history of the simulated client and a stimulated retrospective recall interview with the participant. The mixed method analysis used in the

study provided methodological triangulation of the results and supported the presence of pattern recognition in musculoskeletal physiotherapy. The quantitative research findings indicated that pattern recognition was significantly more likely to produce an accurate diagnostic outcome than analytical reasoning strategies during a physiotherapy history. However its use was not a guarantee of success with only three of the four experts using pattern recognition identifying the correct diagnosis. Although four experts utilised pattern recognition as compared with only one novice, no significant overall differences were found in the use of pattern recognition between the expert and novice participant groups. The findings relating to time data found that expert participants took longer to conduct the client history than novices. Similarly those participants identified using pattern recognition also required more time which seemingly contradicts the view of pattern recognition being an efficient clinical reasoning process. This finding was limited by the incomplete nature of the study which did not include a physical examination or any client management.

ABBREVIATIONS

APA	Australian Physiotherapy Association
E	Expert
HDR	Hypothetico-deductive reasoning
LBP	Low back pain
MPA	Musculoskeletal Physiotherapy Australia
N	Novice
PR	Pattern recognition
SIJ	Sacro-iliac joint