

## Diagnostic Knowledge Structure of Expert Physiotherapists When Diagnosis Low Back Pain Complaints

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**PURPOSE:** The purpose of this study was to investigate how expert physiotherapists' diagnostic knowledge is structured for diagnosing low back pain patient' complaints. **RELEVANCE:** Studies in medical diagnosis had demonstrated that the most important predictor of successful diagnostic problem solving is the quality of the hypothesis generated early in the process (Elstein, Schulman and Sprafka 1978; Neufeld, Norman, Feigtner and Barrows 1981; Norman 1988). Research findings also suggested that experienced clinicians activate the knowledge network associated with these hypotheses. In doing so, clinicians are able to anticipate the patient's answers and the results of some specific tests and exams (Norman, Brooks, Coblenz and Badcock 1992). **SUBJECTS:** Four physiotherapists, who met certain criteria of expertise, were observed over the initial encounter with a low back pain patient. **METHODS AND MATERIAL:** Data was collected through non- participant observation, semi- structured interview, memos and field notes. Immediately after the session the clinician was interviewed based on what they have done during the session (recorded in video). Data was analysed and reported by means of a case study approach. Coding was used to identify the hypothesis categories and the reasoning strategies to generate and refine those hypotheses. Case studies, representing the clinical practice of each therapist, were constructed using a descriptive framework. From these individual case studies, composite case studies were constructed (incorporating the views of the four interviewed physiotherapists). From these a final thematic cross case comparison was performed. **RESULTS:** The study finds that expert physiotherapists are flexible in the way they recognize or analyse patient's features and anticipate further clinical signs and symptoms. In some situations, experience, in the sense of a repertoire of cases, seems to provide the clinicians with the ability to almost automatically recognize a potential diagnostic category and in others there is a need for analysing each instance according to its typicality. **CONCLUSIONS:** The way categories are represented in the clinicians mind (prototypes or instances) seems to have a major impact in the activation of the preliminary diagnostic hypothesis. This flexibility in knowledge structure could be relevant to the ability that experienced clinicians showed to generate better hypothesis when compared with novices, which can have a potential impact in the learning strategies selected for undergraduate education.