**ABSTRACT**

**Background**

The ability of physiotherapists to make clinical decisions is a vital component of being an autonomous practitioner, yet this complex phenomenon has been under-researched in cardiorespiratory physiotherapy. The purpose of this study was to explore clinical decision-making (CDM) by experienced physiotherapists in a scenario of a simulated patient experiencing acute deterioration of their respiratory function.

**Objectives:**

The main objective of this observational study was to identify the actions, thoughts, and behaviours usedby experienced cardiorespiratory physiotherapists in their clinical decision-making processes.

**Design**: A multiple-methods (qualitative) design employing observation and think-aloud, was adopted using a computerised manikin in a simulated environment.

**Setting:**

The participants clinically assessed the manikin programmed with the same clinical signs, under standardised conditions in the clinical skills practice suite, which was set up as a ward environment.

**Participants**: Experienced cardiorespiratory physiotherapists, recruited from clinical practice within a 50-mile radius of (\*anon for review).

**Methods**

Participants were video-recorded throughout the assessment and treatment and asked to verbalise their thought processes using the ‘think-aloud’ method. The recordings were transcribed verbatim and managed using a Framework approach.

**Results**:

Eight cardiorespiratory physiotherapists participated (mean 7 years clinical experience, range 3.5 −16 years). CDM was similar to the collaborative hypothetico-deductive model, five-rights nursing model,reasoning strategies, inductive reasoning and pattern recognition. However, the CDM demonstrated by the physiotherapists was complex, interactive and iterative. Information processing occurred continuously throughout the whole interaction with the patient, and the specific cognitive skills of recognition, matching, implying and predicting were identified as being used sequentially.

**Conclusions**:

The findings from this study were used to develop a new conceptual model of clinical decision making for cardiorespiratory physiotherapy. This conceptual model can be used to inform future educational strategies to prepare physiotherapists and nurses for working in acute respiratory care.

**Highlights**

* A new conceptual model of clinical decision making is proposed
* The model includes seven key stages and seven key cognitive skills used sequentially
* Knowledge , situational awareness and good communication skills are part of the complex process
* The model can inform educational and clinical practice

**Keywords**

Cardiorespiratory physiotherapists, clinical decision-making, clinical judgment, problem solving, think-aloud, video-ethnography, simulation-based education, human patient simulators