

**RESEARCH REVIEW** 



# Clinical decision-making in the assessment and management of sedation in intensive care

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# Aitken LM, Marshall AP, Elliott R, McKinley S. Critical care nurses' decision making: sedation assessment and management in intensive care. J Clin Nurs 2009;18(1):36–45.

#### **KEYWORDS**

Decision-making; Sedation; Critical care; Nursing management **Summary** This research review aimed to critically appraise the study by Aitken et al. on the clinical decision-making process that ICU nurses use when assessing and managing sedation in critically ill patients.

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# Introduction

Management of sedation represents an important component of the care of critically ill patients. Sedatives are administered to reduce patient's anxiety and promote comfort and sleep in a highly stimulating intensive care environment. Accurate assessment of the need for sedation is a prerequisite for appropriate management, yet remains challenging for nurses. To date, there is little understanding of how critical nurses make decisions regarding the assessment of sedation and the appropriate administration of pharmaceutical agents. The study aimed to examine the nurses' decision-making process when caring for the critically ill, in particular the attributes and concepts that were used to determine sedation needs. The study also aimed to determine the influence of the implementation of a sedation guideline on the decision-making process.

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## Methods

A naturalistic approach was used, with data collected from the "think aloud" method and direct participants' observation. A follow-up interview was also conducted to facilitate clarification of the "think aloud" transcript and the observed activities. The study participants were expert nurses, defined as registered nurses with a critical care qualification; with more than 5 years critical care experience and working a minimum of 2 days per week: and who considered themselves to be an expert in the field. They were informed about the purpose of the study, but not the specific interest in sedation practices until after all data collection had been completed. Training in the technique of thinking aloud was conducted prior to commencement of the study and both methods ("think aloud" and observation) were pilot tested.

### Results

Seven nurses (four females; three males) with between 5 and 23 years of critical care experience participated in the study. They all had undertaken a critical care nursing course at hospital certificate, graduate certificate or graduate diploma level. Concepts were identified as sedation; sedatives; agitation and anxiety; pain, pain relief, and comfort; neurological assessment and status; communication and comprehension; respiratory status; and miscellaneous. A large number of attributes related to assessment, physiological and treatment aspects of sedation were described by participants with an average of 48 attributes depicted prior to implementation of the sedation guideline and 57 after. This small difference was likely to be due to patients' different characteristics rather than the effect of the guideline.

# Discussion

Nurses used a large number of attributes common to sedation and specific to other individual characteristics. Difficulties of linking the attributes to the concepts reflect the complexity of decision-making in critical care. The broad range of attributes used during this process should inform educational strategies to help novice nurses to develop their expertise in the field.

#### Critique

Nurses working in the intensive care are constantly faced with the challenge of balancing the potential benefits and complications of sedation. Research in this area has focused on developing scoring systems, algorithm, and clinical guidelines in attempt to assist health professionals assessing and managing sedation in critically ill patients. Use of these tools in clinical practice has demonstrated various degree of efficacy. When assessment tools provide guidance to attribute a sedation score, critical care nurses still have to interpret this score in the context of a particular patient and make decisions about different therapeutic strategies. The study by Aitken and colleagues has the merit to address this much needed area of research.

The authors chose a naturalistic approach, using the ''think aloud'' and observation methods, to investigate the concept and attributes of decisionmaking related to assessment and management of sedation in real-life setting. The naturalistic decision-making theory assumes that decisions are made in a dynamic, contextual environment and are influenced to different degrees by personal and situational factors. This is particularly pertinent in the intensive care environment where there is a wide spectrum of different clinical situations and where nurses have varying levels of competency.

The "think aloud" method employed in the study has been widely used to assess cognitive processes in clinical reasoning research.<sup>1</sup> This method is, however, predicated on the respondent's ability to verbalise their judgments and the information being considered in the process.<sup>2</sup> In the study by Aitken and colleagues, the participants were not told about specific interest in sedation practices until after all data collection had been completed. When this was intended to replicate normal practice as much as possible, one may wonder whether the participants would have been able to fully reflect on their practice in relation to sedation and verbalise their thoughts, if they were not specifically instructed to do so in this particular situation. However, strategies, such as training in the "think aloud" technique and the combination of "think aloud" with simultaneous observation and follow-up interviews guaranteed complete and unambiguous data collection.

Another issue that may have influenced the nurses' ability to express their thoughts is the extent of potential disruption caused by direct close observation. However, one may accept that observer bias is a fact of life in a naturalistic paradigm<sup>3</sup> and the authors of the study minimised

potential biases by interviewing participants to clarify the activities observed.

Decision-making in nursing is a complex process that encompasses different theoretical perspectives.<sup>2,4</sup> However, there is a general recognised view that clinical decision-making in nursing is based on a cognitive continuum representing all forms of human judgement from intuitive to analytic.<sup>5</sup> The study by Aitken and colleagues is an attempt to understand how nurses process complex information to make accurate and rapid decisions about the management of sedation of a patient who can be in a life-threatening condition. They identified and quantified concepts and attributes used to form clinical decisions. How these concepts and attributes have been identified is, however, unclear. Inclusion of the underlying conceptual framework for decision-making used in the study would have facilitated the explanation of data analysis and the difficulty encountered to identify a link between the attributes and the concepts.

Nevertheless, the results of this study are noteworthy and raise several pertinent clinical, educational and research questions. For instance, the fact that neurological status appeared to be a greater driver for intervention than pain and comfort could be explained by the hypotheticodeductive model of clinical reasoning, when nurses consider outcomes, risk attached, and context to make decisions.<sup>4</sup> As Aitken et al. reported clinical decision-making is a highly complex non-linear iterative process that comprises various attributes at different times. Underpinnings of decision-making may provide a framework to better understand the reasoning processes and thinking strategies used by nurses to review and analyse patient information in a timely fashion, evaluate its significance, and formulate alternative actions.

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