CONTENT VALIDATION OF BEHAVIORS AND AUTONOMIC RESPONSES ON A PAIN ASSESSMENT TOOL FOR CRITICALLY ILL ADULTS WITH BRAIN INJURY

Céline Gélinas, Nurse, PhD
McGill University

INTRODUCTION / AIM

Behavioral pain scales developed for critically ill adults unable to self-report are recommended for clinical use in practice guidelines of the Society of Critical Care Medicine (Barr et al., 2013). More specifically, two scales were recommended, including the Critical-Care Pain Observation Tool (CPOT; Gélinas et al., 2006). However, challenges related to the use of those scales in brain-injured patients hospitalized in the Intensive Care Unit (ICU) call for the need to adapt their content to make it more applicable to this group. In a previous study, we identified that brain-injured ICU patients react differently to pain. For instance, they were less likely to grimace and to become rigid but presented autonomic responses (e.g., eye weeping, face flushing) during painful procedures (Arbour et al., 2014). This study aimed to evaluate the content relevance of various behavioral and autonomic responses/indicators for the adaptation of the CPOT for use in brain-injured ICU patients.

METHODS

Critical care clinicians from four neurotrauma adult ICUs (3 from Canada and one from USA) were invited to complete a questionnaire about the clarity and relevance of behaviors and autonomic responses identified in a previous study, and their relevance for the assessment of pain in brain-injured ICU patients in accordance to their level of consciousness (LOC). Clarity was assessed by selecting between Not clear and Clear. The relevance of individual indicators for the assessment of pain was evaluated by clinicians on a 4-point Likert scale where 1 connotes a non-relevant, 2 a weakly relevant, 3 a somewhat relevant and 4 a very relevant indicator. Content Validity Index (CVI) was computed for each indicator and represented the proportion of clinicians who rated an indicator with a score of 3 or 4. CVI >75% were considered satisfactory.

RESULTS

A total of 77 clinicians completed the content validation questionnaire, of whom 61 were ICU nurses, 13 physicians and 3 physiotherapists. Over 80% of participants had been working in a neurotrauma ICU for at least 3 years. Overall, clinicians considered the description of behavioral indicators to be clear (>84%). Only levator contraction was considered unclear by 21%. Regardless of patients LOC, grimacing, brow lowering, and trying to reach the pain site were rated as the most relevant behaviors with CVI >75%. Conversely, blinking, activation of mechanical ventilator alarms and coughing were the least relevant behaviors across all LOCs with CVI <45%. Moaning and verbal complaints of pain were considered relevant for the assessment of pain by clinicians with CVI >85%, but mainly for conscious patients and those with altered LOC. Similarly, eye weeping was considered to be relevant for the conscious patients (CVI=79%); however, by only half of clinicians for those unconscious (CVI=52%).
DISCUSSION / CONCLUSIONS

In summary, many of the behaviors related to facial expressions, specific movements towards the pain site, and vocalization of pain were the most relevant for critical care clinicians. Relevance of some behaviors such as moaning and verbal complaints of pain can vary across LOCs, thereby calling forth adaptations of behavioral pain scales to patients’ LOC and ability to express certain behaviors indicative of pain.

OTHER AUTHORS

Madalina Boitor
Jane Topolovec-Vranic
Manon Choinière
Mélanie Bérubé
Francis Bernard
Aaron Joffe
Anne-Sylvie Ramelet
Kathleen Puntillo
David Streiner