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Symptom assessment in non-vocal or cognitively impaired ICU patients: Implications for practice and future research

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ABSTRACT

Background: Symptom assessment in critically ill patients is challenging because many cannot provide a self-report.

Objectives: To describe the state of the science on symptom communication and the assessment of selected physical symptoms in non-vocal ICU patients.

Methods: This paper summarizes a 2014 American Thoracic Society Annual International Conference symposium presenting current evidence on symptom communication, delirium, and the assessment of common physical symptoms (i.e., dyspnea, pain, weakness, and fatigue) experienced by non-vocal ICU patients.

Results: Symptom assessment begins with accurate assessment, which includes an evaluation of delirium, and assistance in symptom communication. Simple self-report measures (e.g., 0–10 numeric rating scale), observational measures (e.g., Respiratory Distress Observation Scale and Critical-Care Pain Observation Tool), or objective measures (e.g., manual muscle testing and hand dynamometry) have demonstrated utility among this population.

Conclusion: Optimizing symptom assessment with valid and reliable instruments with minimum patient burden is necessary to advance clinical practice and research in this field.

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Introduction

Critically ill, intensive care unit (ICU) patients experience many distressful symptoms associated with complex causes, such as acute illness or injury, critical care treatments and procedures, or pre-existing symptoms from underlying chronic conditions. Although the generally accepted definition of a symptom is the “self-reported perception of an individual’s experience of disease or physical disturbance,”¹ symptom assessment in the ICU involves unique challenges because many critically ill patients are limited in their ability to provide a self-report. Critical care professional

groups (e.g., the Society of Critical Care Medicine) endorse the use of alternative strategies, which primarily are based upon observational measures, when subjective symptom report (i.e., self-report) is unattainable.^{2,3}

In response to a growing awareness of the importance of promoting patient-centered symptom assessment in the ICU, a group of expert nurse scientists were invited to participate in a scientific symposium titled “Symptom Measurement during Critical Illness” at the American Thoracic Society Annual International Conference in San Diego, California, in 2014. This paper is a synthesis of the respective presentations from the symposium based on the most up-to-date evidence for each topic. First, we introduce strategies to overcome challenges of accurate symptom identification and effective symptom communication with non-vocal ICU patients. Next, we highlight the effect of delirium on symptom communication. In the subsequent sections, we address the challenges and strategies in the clinical identification and measurement of selected

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symptoms of high prevalence in critically ill patients including pain, dyspnea, weakness and fatigue.^{4,5} Moreover, we present implications for clinical practice and research.

Communication with non-vocal ICU patients

Common therapeutics in the ICU, including endotracheal intubation, mechanical ventilation, and sedation, often limit patients' ability to verbalize their symptoms or even minimally participate in symptom assessment. In addition, severe illness and complex therapeutics affect cognitive function and alter a given patient's ability to report the symptoms that he or she is experiencing. Problems with communication can lead to errors in symptom identification,⁶ missed symptoms, poor symptom management, and preventable adverse events.⁷

Clukey et al⁶ recently discovered unexpected pain in ICU patients who were intubated and sedated. Semi-structured interviews with 14 patients who were newly extubated revealed that the patients experienced uncommunicated distress from pain and respiratory tract intubation.⁶ Nurses drive the communication with non-vocal, critically ill patients⁸ and may ask about or identify symptoms from only their perspective, experience, and/or capability to treat. The classic example of misinterpretation of a symptom message is the intubated patient who received "pain" medication every time he asked the ICU nurses for "pants." This misinterpretation was discovered when a speech language pathologist conducted an individualized assessment and plan for communication support as part of the Study of Patient-Nurse Effectiveness with Assisted Communication Strategies (SPEACS) trial.⁹ Taken together, these examples show that individualized assessment of pain and other distressing symptoms is an important, yet challenging, aspect of care for non-vocal ICU patients.

Fully assessing the patient's ability to communicate is the essential first step in facilitating symptom assessment with critically ill and intubated patients. The SPEACS acronym can be used to guide communication assessment (Table 1). Once a reliable yes/no signal is determined for the patient, the information is posted at the patient's bedside to provide consistent direction for members of the healthcare team or patient's family when communicating with the patient. If patients have cognitive difficulty with focus and attention (e.g., delirium), and/or provide an ambiguous yes/no response (e.g., a head bobble), nurses can use the simple yet effective "tagged yes/no" technique.¹⁰ Following this technique, the question, "Are you having pain?" is anchored by the nurse also speaking the response choices "yes or no" (auditory) while simultaneously providing the accompanying nonverbal, visual signal (i.e., nodding the head up and down for "yes" or shaking the head from side to side for "no").¹⁰

When patients are able to point at something to indicate yes/no, communication boards—either digital or hard copy—can and should be used. For patients who are unable to point but still can indicate yes/no (e.g., by blinking his or her eyes), nurses or family members can systematically point to options for the symptom assessment. This can be accomplished with a simple bullet-point list of common symptoms that the nurse composes by writing in large print on a notebook, pointing to each item on the list, and then asking the patient to indicate symptom presence by signaling yes or no. A more formal, pre-printed tool, such as a large-font version of the Condensed Memorial Symptom Assessment Scale (MSAS-C), adapted for mechanically ventilated patients¹¹ or a common symptom list with intensity and/or distress ratings can also be used.⁴

The SPEACS intervention was tested as a multi-level intervention using a three-group (i.e., *Control*, *Basic Communication Skills Training and Tools*, and *Enhanced Training, Communication Devices, and Speech-Language Pathology Consultation*) sequential cohort

Table 1
SPEACS-2 communication assessment guide.

Sensory	Does patient use glasses/hearing aids? Are they available?
Point/write	Point to your feet/picture/person Write your name/favorite color
ETT vs. oral movement	Count from 1 to 10 What was your first job?
Attention/cognition	Is patient alert/following commands? Raise your arm and make a fist Blink your eyes twice
Clear yes/no	Does patient need comprehension support? How does patient signal yes/no? Are patient's responses reliable?
Speaks/reads English	Any language barriers? Is patient literate?

design with 89 patients and 30 nurses. The SPEACS intervention groups demonstrated significant ($p = .03$) improvements in the success of communication exchanges about pain.⁹ Moreover, data reveal an increase in the use of augmentative and alternative communication tools in the intervention groups over the control group.

Tablet computers and touch pad devices present options for communication during critical illness and mechanical ventilation, and these devices recently have been tested in the acute and critical care setting.^{12–14} Mobile communication boards are now available as smartphone or tablet applications, which feature message options for pain and other symptoms (e.g., nausea, thirst, difficulty breathing, and worry). Pain messages include not only location and intensity ratings, but also qualitative descriptions (e.g., sharp, throbbing, and burning). Some applications have voice output and multiple language translation features. Table 2 provides a list with relevant features.

Delirium

Delirium is a complex, acute brain dysfunction syndrome with a prevalence range of 32–87% among ICU patients.^{15–19} The causal mechanisms of delirium are complex and remain difficult to determine. Although delirium is associated with poor outcomes in hospitalized patients,^{20–23} ICU delirium is related to increased length of stay,²⁴ increased duration of mechanical ventilation,²⁵ and may be related to impaired cognitive recovery following ICU discharge.¹⁹ Patients with delirium demand higher nursing attention and time.²⁶

Assessing the presence of delirium is essential to symptom assessment because care and communication processes are greatly altered and require special consideration when the patient is delirious. Critically ill patients with delirium rate communication with nurses as being more difficult than non-delirious patients.⁵ Communication frequency and success are significantly lower with delirious patients than non-delirious patients, perhaps due to delayed responses or lack of attention to the interaction.⁵ Delirious patients are less likely to initiate symptom communication with nurses; therefore, nurses assume much of the responsibility for and control of communication interactions, symptom identification, and interpretation with these patients.⁵

Sub-types of delirium include hyperactive, hypoactive, and mixed type.²⁷ A majority of ICU clinicians are familiar with the agitated patient with delirium. However, ICU clinicians are less aware of the fact that delirium can be experienced in patients who are quiet and calm—especially critically ill older adults.²⁸ Patients with mixed-type delirium pose additional problems with symptom communication due to unpredictable periods of agitation and

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