ASSESSMENT OF DELIRIUM IN THE INTENSIVE CARE UNIT: NURSING PRACTICES AND PERCEPTIONS

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Background Despite practice guidelines promoting delirium assessment in intensive care, few data exist regarding current delirium assessment practices among nurses and how these practices compare with those for sedation assessment.

Objectives To identify current practices and perceptions of intensive care nurses regarding delirium assessment and to compare practices for assessing delirium with practices for assessing sedation.

Methods A paper/Web-based survey was administered to 601 staff nurses working in 16 intensive care units at 5 acute care hospitals with sedation guidelines specifying delirium assessment in the Boston, Massachusetts area.

Results Overall, 331 nurses (55%) responded. Only 3% ranked delirium as the most important condition to evaluate, compared with altered level of consciousness (44%), presence of pain (23%), or improper placement of an invasive device (21%). Delirium assessment was less common than sedation assessment (47% vs 98%, \( P < .001 \)) and was more common among nurses who worked in medical intensive care units (55% vs 40%, \( P = .03 \)) and at academic centers (53% vs 13%, \( P < .001 \)). Preferred methods for assessing delirium included assessing ability to follow commands (78%), checking for agitation-related events (71%), the Confusion Assessment Method for the Intensive Care Unit (36%), the Intensive Care Delirium Screening Checklist (11%), and psychiatric consultation (9%). Barriers to assessment included intubation (38%), complexity of the tool for assessing delirium (34%), and sedation level (13%).

Conclusions Practice and perceptions of delirium assessment vary widely among critical care nurses despite the presence of institutional sedation guidelines that promote delirium assessment. (American Journal of Critical Care. 2008;17:555-566)
Delirium is characterized by an acutely changing or fluctuating mental status, inattention, disorganized thinking, and altered level of consciousness. Although patients with delirium are classically described as hyperactive (eg, patients are agitated and combative), current epidemiological evidence suggests that more patients in intensive care units (ICUs) who have delirium are hypoactive (eg, have psychomotor slowing) or have a mixed pattern. In the ICU, delirium is associated with higher mortality, prolonged ICU stay, and greater health care costs. The primary risk factor for delirium is preexisting cognitive impairment. Other risk factors include a higher age, the presence of acute systemic illnesses or medical comorbid diseases, and the use of certain medications (eg, benzodiazepines).

Delirium occurs in up to 87% of mechanically ventilated patients in the ICU. Because delirium reportedly occurs in up to 87% of ICU patients receiving mechanical ventilation, the Society of Critical Care Medicine practice guidelines recommend that ICU patients be routinely screened for delirium by using a validated screening tool. Prompt recognition of delirium in the ICU allows caregivers to differentiate patients’ symptoms (eg, pain, anxiety) from other conditions with similar features (eg, psychomotor agitation) and facilitates the initiation of both drug and non-drug therapies.

Until recently, ICU clinicians had no instrument to detect delirium in patients receiving mechanical ventilation, because available instruments for detecting delirium (eg, the Confusion Assessment Method) required verbal communication. Since 2000, however, 2 highly sensitive, reliable, and easy-to-use screening instruments (the Intensive Care Delirium Screening Checklist [ICDSC] and the Confusion Assessment Method for the Intensive Care Unit [CAM-ICU]) have been developed specifically for the detection of delirium in nonverbal ICU patients by nonpsychiatric personnel. Because delirium is multidimensional and fluctuating, a cursory one-time-only evaluation is usually ineffective in detecting it. Thus, because of their contact with patients for an entire 8- or 12-hour shift, bedside nurses are ideally positioned to screen for delirium in the ICU.

Although most critical care nurses report routinely using a validated tool (eg, the Sedation-Agitation scale) to evaluate level of sedation in their patients, nurses’ practices and preferences for delirium screening are currently unclear. In a 2002 survey of Canadian intensivists, Mehta et al found that only 3.7% use a delirium scoring system in the ICU. In a survey of 912 ICU clinicians by Ely et al, only 40% of respondents routinely screened for delirium, and only 16% used a validated delirium assessment tool. However, nurses represented only 15% of the respondents in the survey.

Few data are available on nurses’ current practices in delirium assessment, potential barriers to delirium assessment, and the training that nurses have received in delirium assessment. The feasibility and success of nursing assessments for delirium among ICU patients depend on gaining a better understanding of nurses’ beliefs about and attitudes toward delirium assessment. Therefore, we developed and administered a survey questionnaire to determine ICU nurses’ current practices and perceptions of delirium assessment. The results were stratified among a number of different demographic factors, and delirium assessment practices were compared with sedation assessment practices.

Methods

Sedation assessment was considered the most useful comparison for delirium assessment for the purposes of the survey because (1) sedation is usually assessed by nurses, (2) the impact of sedation assessment on patients’ outcomes is well established, and (3) the Society of Critical Care Medicine sedation...
guidelines state that sedation should be assessed as a part of ICU care.\textsuperscript{7,17–19} Other potential assessments to compare with delirium assessment (eg, pain assessment) were not incorporated in the survey because of the large number of methods that can be used to evaluate pain in the ICU.\textsuperscript{7}

Instrument Development

The survey instrument was developed through a deliberate series of steps that included item generation and construction and then pilot testing and clarification. Delirium was defined as an acutely changing or fluctuating mental status, inattention, disorganized thinking, and an altered level of consciousness.\textsuperscript{20} A panel of experts with experience in disorganized thinking, and an altered level of consciousness were not incorporated in the survey because of the large number of methods that can be used to evaluate pain in the ICU.\textsuperscript{7}

Sample and Setting

The survey was distributed to registered nurses working in adult ICUs. A random numbers table was used to select the hospitals that were surveyed from the acute care hospitals in the Boston, Massachusetts, area that had at least 1 ICU where sedation guidelines stated that delirium should be assessed. This process continued until 3 academic teaching and 2 community hospitals had been selected. Nurses working in ICUs at these institutions where delirium assessment was not promoted in sedation guidelines were not surveyed. At these 5 hospitals, surveys were distributed to 601 critical care nurses who worked in the following types of ICUs: 4 medical, 4 surgical, 2 mixed medical-surgical, and 1 coronary. Nurses working in neurological, trauma, and burn ICUs were excluded from the study because the sedation guidelines in place in these units at the survey hospitals do not incorporate delirium assessment. The 5 ICUs selected were a convenience sample and represented the most common types of ICUs in the United States.\textsuperscript{21}

Procedures

When needed, approval for distributing the survey was obtained from the institutional review boards at the institutions where the survey was distributed. Identical versions of the survey (Figure 1) were distributed electronically via e-mail and as a hard copy at ICU bedside. Each respondent received a description of the project survey and a rationale for completing the survey. Web-based software (Survey Monkey, Seattle, Washington) was used to send the survey at biweekly intervals to each nurse twice. Paper surveys were distributed to nurses either through the nurses’ hospital mailboxes and/or at patients’ bedside and contained a stamped, addressed return envelope. Nurses were instructed to complete either the electronic or the paper version of the survey and to complete it only once. All responses were anonymous, and no incentives or compensation were offered to survey responders. Costs associated with the survey were covered by departmental research funds.

Deliurn is associated with increased mortality, ICU stay, and health care costs.

Ninety-eight percent of nurses routinely assess sedation level, whereas only 47% assess for the presence of delirium.
Nursing Practices and Perceptions Towards Delirium* in the Intensive Care Unit

*Delirium = acutely changing or fluctuating mental status, inattention, disorganized thinking, and an altered level of consciousness

1. Of the following potential conditions that may occur in an ICU patient, please RANK (1-5) the order of importance in which you feel they should be evaluated by nurses over the average shift by placing a ‘1’ beside the factor that you think is most important to evaluate and a ‘5’ beside the factor that you think is LEAST important to evaluate.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altered level of consciousness</td>
<td></td>
</tr>
<tr>
<td>Improper placement of invasive devices</td>
<td></td>
</tr>
<tr>
<td>Presence of agitation</td>
<td></td>
</tr>
<tr>
<td>Presence of delirium</td>
<td></td>
</tr>
<tr>
<td>Presence of pain</td>
<td></td>
</tr>
</tbody>
</table>

2. My ICU has a sedation protocol/guideline. (please circle)    
   Yes     No     Not sure

3. Does your ICU sedation protocol specify a frequency by which delirium should be assessed? (please circle)  
   Yes     No     Not sure

4. For the ICU patients whom you care for, how often do you evaluate patients for level of sedation and presence of delirium? For example if you usually evaluate for the presence of delirium frequently then place a √ beside “presence of delirium” in the “frequently” column.

<table>
<thead>
<tr>
<th>Level of sedation</th>
<th>Never</th>
<th>Rarely</th>
<th>Frequently</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of delirium</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. For the ICU patients for whom you DO evaluate level of sedation and/or for the presence of delirium, please indicate the frequency per every 12-hour shift that you conduct each evaluation. For example if you usually evaluate for the presence of delirium twice per shift then place a √ beside “x 2-3” in the “Presence of Delirium column.”

<table>
<thead>
<tr>
<th>Per 12-hour shift</th>
<th>Level of Sedation</th>
<th>Presence of Delirium</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>X 2-3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>X 4-6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>X &gt;6</td>
<td></td>
</tr>
</tbody>
</table>

6. For the ICU patients for whom you evaluate the presence of delirium, please indicate how frequently you use each of the following in your delirium assessment. Note: Please indicate frequency per every 12-hour shift. If you do not assess for delirium in your ICU patients, please indicate “never use” under each column.

<table>
<thead>
<tr>
<th>Per 12-hour shift</th>
<th>Ability to follow commands</th>
<th>Agitated Related Events</th>
<th>Confusion Assessment Method-ICU (CAM-ICU)</th>
<th>CIWA-Ar Scale</th>
<th>Intensive Care Delirium Screening Checklist</th>
<th>Psychiatry Consult</th>
<th>Other (please specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Heard Of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never Use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rarely</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X 2-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X 4-6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X &gt;6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 1

continued
7. From the following list of factors that might prevent you from evaluating your patient for the presence of delirium, please RANK the TOP 3 in order of importance by placing a ‘1’ beside the factor that you think is MOST common or significant and a ‘3’ beside the factor that is third most important.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Delirium assessment tools are too complex to use</td>
</tr>
<tr>
<td>2</td>
<td>Difficult to interpret in intubated patients</td>
</tr>
<tr>
<td>1</td>
<td>Do not feel confident in my ability to use delirium assessment tools</td>
</tr>
<tr>
<td>2</td>
<td>Do not feel that using delirium assessment tool improves outcome</td>
</tr>
<tr>
<td>3</td>
<td>Inability to adequately document delirium assessments</td>
</tr>
<tr>
<td>1</td>
<td>Inability to complete assessment in the sedated patient</td>
</tr>
<tr>
<td>2</td>
<td>Not enough time to perform assessment (too time consuming)</td>
</tr>
<tr>
<td>3</td>
<td>Nurses are not required to screen for delirium in my ICU</td>
</tr>
<tr>
<td>1</td>
<td>Physicians already complete delirium assessments</td>
</tr>
<tr>
<td>2</td>
<td>Physicians do not use my assessment in their decision-making</td>
</tr>
<tr>
<td></td>
<td>Other: ________________________________________________________________________________</td>
</tr>
</tbody>
</table>

8. I have received education regarding ICU sedation assessment and ICU delirium assessment by the following means: (Please insert √ in ALL applicable boxes below)

<table>
<thead>
<tr>
<th>Sedation Assessment</th>
<th>Delirium Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have never received education</td>
<td>Have never received education</td>
</tr>
<tr>
<td>Live, out-of-hospital CE lecture</td>
<td>Live, in-hospital lecture or inservice delirium assessment tools</td>
</tr>
<tr>
<td>Teaching at the bedside tool improves outcome</td>
<td>Teaching at the bedside tool improves outcome</td>
</tr>
<tr>
<td>Other: ________________________________________________________________________________</td>
<td>Other: ________________________________________________________________________________</td>
</tr>
<tr>
<td>Inability to complete assessment in the sedated patient</td>
<td>Inability to complete assessment in the sedated patient</td>
</tr>
</tbody>
</table>

9. Please indicate your agreement with the following statements that pertain to delirium in the ICU by placing a √ in the column that most closely aligns with your agreement.

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Moderately agree</th>
<th>Strongly disagree</th>
<th>Moderately disagree</th>
<th>Neither agree nor disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Delirium is an underdiagnosed problem.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Delirium is a common response to the ICU environment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Delirium is a problem that requires active interventions on the part of caregivers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Delirium is associated with higher patient mortality.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) ICU patients with delirium are rarely agitated.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f) Initiation of antipsychotic therapy (e.g., Haldol) should be the initial intervention for all patients with delirium.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g) Delirium is challenging to assess in ICU patients.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h) Patients with delirium usually have symptoms that are consistent over the entire nursing shift.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Is there anything else you would like to tell us about delirium assessment in the ICU setting?

Thank you for your response to these questions. Now that we have this information, we would like to know something about you. Please complete the following questions:

10. What is your age? _______ years

11. What is your HIGHEST nursing degree? (please check)
   □ Diploma  □ Associate  □ Baccalaureate  □ Masters  □ Doctorate

12. How many years have you worked in an ICU setting? _______ years

13. How many hours do you work per week on average in the ICU? _______ hours

Figure 1 Continued
Of the total hours you work in an ICU setting, please indicate the % of time you work each of the following shifts. Please indicate 0% if you do not work a particular shift.

12-hour shifts
Day (7am-7pm) _____ %
Night (7pm-7am) _____ %

8-hour shifts
Day (7am-3pm) _____ %
Evening (3pm-11pm) _____ %
Night (11pm-7am) _____ %

15. Which type of hospital do you primarily work at? (please check)
- Major Medical Center (teaching)
- Community (teaching)
- Community (non-teaching)
- Government (e.g., VA, military)
- Other

16. Please estimate the number of active beds at your primary institution. _____ beds

17. Which type of ICU do you primarily work in?
- Medical
- Surgical
- Coronary
- Mixed Medical-Surgical

18. Please specify the number of beds that are in the primary ICU you work in. _____ beds

19. Which of the following best describes your current position? (check all that apply)
- Staff nurse
- Charge nurse
- Nurse manager
- Clinical educator
- Nurse practitioner
- Clinical nurse specialist
- Other

THANK YOU FOR COMPLETING THE SURVEY!

Data Analysis
Data from the survey were entered into a relational database (Microsoft Access, Seattle, Washington). Data were stratified to a number of demographic variables, including years of experience, highest degree, type of ICU, type and size of hospital, and time of most commonly worked shift. In some instances in which they were spread over multiple categories, responses were collapsed into 2 categories to permit comparisons among various demographic and practice variables. Responses were analyzed by using standard statistics, including t test, χ² analysis, and Mann-Whitney test, when appropriate (SPSS version 14.0, SPSS Inc, Chicago, Illinois). A P value less than .05 was deemed significant.

Results
Of the 601 nurses who were sent surveys, 331 (55%) responded. Most respondents had a baccalaureate degree and worked in a medical or surgical ICU at a teaching hospital (Table 1). The nurses who responded had a mean age of 40.2 (SD, 9.8) years, had worked in an ICU for a mean of 13.6 (SD, 9.1) years, and currently worked a mean of 35 (SD, 6.4) hours per week. More nurses who responded worked predominantly day shifts (78%) rather than night shifts (22%).

Although only nurses from ICUs with sedation protocols that include delirium assessment were surveyed, 40% of respondents stated that their unit’s sedation protocol either does not specify that delirium should be assessed or they are not sure if the protocol does specify such assessment (Table 2). Substantially more nurses routinely assess level of sedation (either

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Demographic characteristics of the 331 respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Highest degree % Total respondents</td>
</tr>
<tr>
<td>Baccalaureate</td>
<td>75</td>
</tr>
<tr>
<td>Diploma/associate’s</td>
<td>9</td>
</tr>
<tr>
<td>Master’s</td>
<td>10</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Nursing position % Total respondents</td>
</tr>
<tr>
<td>Charge</td>
<td>6</td>
</tr>
<tr>
<td>Educator</td>
<td>1</td>
</tr>
<tr>
<td>Staff</td>
<td>92</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Hospital type % Total respondents</td>
</tr>
<tr>
<td>Community</td>
<td>17</td>
</tr>
<tr>
<td>Teaching</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>Type of intensive care unit % Total respondents</td>
</tr>
<tr>
<td>Coronary</td>
<td>7</td>
</tr>
<tr>
<td>Medical</td>
<td>36</td>
</tr>
<tr>
<td>Mixed medical-surgical</td>
<td>20</td>
</tr>
<tr>
<td>Surgical</td>
<td>37</td>
</tr>
</tbody>
</table>

Figure 1 Continued
Nurses’ perceptions of delirium and its assessment are presented in Figure 5. When compared with nurses who either always or frequently evaluate their patients for delirium, nurses who never or rarely evaluate their patients for delirium were less likely to respond that delirium in the ICU is an underdiagnosed problem (*P* = .02) and that ICU patients with delirium are rarely agitated (*P* < .001). However, these nurses were more likely to state that initiation of antipsychotic therapy should be the initial intervention for patients with frequently or always) than assess for the presence of delirium (98% vs 47%, *P* < .001). For the nurses who assessed both sedation and delirium, the assessment frequency (at least twice per 12-hour shift) was similar between delirium (88%) and sedation (94%, *P* = .42).

Although the number of nurses employed at community hospitals who assess level of sedation was similar to the number who do so in teaching centers (95% vs 96%, *P* = .82), far fewer nurses employed at community hospitals assessed for the presence of delirium (13% vs 53%, *P* < .001). Other demographic parameters associated with a greater frequency of delirium assessment (either frequently or always) included nurses who worked in a medical ICU vs those who worked in a surgical or cardiac ICU (55% vs 40%, *P* = .03) and nurses who worked 36 hours or more per week (62% vs 38%, *P* = .002). The frequency of delirium assessment did not differ between nurses who were less than 40 years old (49%) and nurses 40 years or older (43%, *P* = .08). Of possible conditions that nurses deemed important to routinely evaluate in their ICU patients, delirium (3%) ranked far lower than altered level of consciousness (44%), presence of pain (23%), improper placement of invasive devices (21%), and the presence of agitation (9%; Figure 2).

Of the 6 possible methods to evaluate for the presence of delirium that were presented in the survey (Figure 3), assessment of ability to follow commands was evaluated most frequently (at least once per 12-hour shift, 78%), followed by evaluation of agitation-related events (71%), use of the CAM-ICU (36%), use of the ICDSC (11%), a psychiatry consultation (9%), and last, use of the Clinical Institute Withdrawal of Alcohol Scale, Revised (7%). Compared with nurses employed at community hospitals, nurses at teaching hospitals were more likely to use the CAM-ICU (33% vs 13%, *P* = .01) or the ICDSC (19% vs 0%, *P* < .001). The most commonly reported barriers to delirium assessment by nurses in the ICU included intubation (38%), the complexity of tools for assessing delirium (34%), and the inability to complete assessments of delirium in sedated patients (13%, Figure 4).

More respondents stated that they had never received training of any type regarding delirium assessment compared with training about sedation assessment (37% vs 12%, *P* < .001). When sources of training were compared between delirium and sedation assessment, nurses were more likely to have received training about delirium assessment in the past year in a live out-of-hospital continuing education lecture (46% vs 30%, *P* = .01) and were less likely to have received training about delirium assessment via either a hospital in-service training session or bedside teaching (68% vs 26%, *P* < .001).

<table>
<thead>
<tr>
<th>Frequency by which presence of delirium is assessed</th>
<th>% Total respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never/rarely</td>
<td>53</td>
</tr>
<tr>
<td>Frequently/always</td>
<td>47</td>
</tr>
<tr>
<td>Once per 12-hour shift</td>
<td>10</td>
</tr>
<tr>
<td>2-3 times per 12-hour shift</td>
<td>39</td>
</tr>
<tr>
<td>≥4 times per 12-hour shift</td>
<td>49</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequency with which level of sedation is assessed</th>
<th>% Total respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never/rarely</td>
<td>2</td>
</tr>
<tr>
<td>Frequently/always</td>
<td>98</td>
</tr>
<tr>
<td>Once per 12-hour shift</td>
<td>4</td>
</tr>
<tr>
<td>2-3 times per 12-hour shift</td>
<td>17</td>
</tr>
<tr>
<td>≥4 times per 12-hour shift</td>
<td>77</td>
</tr>
</tbody>
</table>

Nurses’ perceptions of delirium and its assessment are presented in Figure 5. When compared with nurses who either always or frequently evaluate their patients for delirium, nurses who never or rarely evaluate their patients for delirium were less likely to respond that delirium in the ICU is an underdiagnosed problem (*P* = .02) and that ICU patients with delirium are rarely agitated (*P* < .001). However, these nurses were more likely to state that initiation of antipsychotic therapy should be the initial intervention for patients with
delirium (P < .001) and that patients with delirium usually have signs and symptoms that are consistent throughout the entire nursing shift (P < .001). Nurses who reported receiving any training about delirium assessment in the past year were more likely to disagree with the statements that ICU patients with delirium are rarely agitated (P < .001) and that patients with delirium usually have signs and symptoms that are consistent throughout the entire nursing shift (P = .01). Nurses’ perceptions of delirium did not differ when stratified among nurses who reported using a validated tool to assess for delirium and nurses who did not use an assessment tool.

**Discussion.**

Fewer than half of the respondents reported screening regularly for delirium despite local institutional guidelines advocating assessment of delirium and the crucial role that delirium assessment plays in enabling nurses to reassure and comfort patients. Although these same nurses uniformly reported evaluating level of sedation, 28% were not sure if their unit’s sedation protocol included assessment of delirium, and 12% said that it did not. Although patients agree with nurses about the importance of determining presence of pain, the higher importance that nurses give to assessing altered level of consciousness or agitation suggests the nurses also may be unaware of patients’ needs and preferences. Finally, nurses think that hallucinations and paranoia can be mitigated by sedation, whereas this notion does not correspond to ICU patients’ self-reported experiences.

Several reasons may account for the low frequency reported for assessment of delirium. Although the Society of Critical Care Medicine sedation guidelines call for assessment of delirium in the ICU, screening has not yet been mandated by regulatory agencies such as the Joint Commission or Medicare. A focus in the ICU on the technical aspects of care (ie, a reliance on data from equipment for monitoring patients) rather than assessment of patients most likely also influences the low frequency of assessment. Respondents may have thought that the presence of an altered level of consciousness is synonymous with delirium, because alteration of consciousness is a criterion for delirium listed in the *Diagnostic and Statistical Manual of Mental Disorders: Text Revision.* Finally, the low frequency of delirium assessment reported most likely stems from a lack of any published studies evaluating the impact of delirium screening in the ICU on patients’ outcomes.

The greater frequency of delirium screening that occurs in medical ICUs (vs surgical and cardiac ICUs) is not surprising because of the far greater number of published reports of delirium assessment in medical patients. The far lower frequency of delirium assessment at community institutions compared with teaching hospitals may be a result of the tendency for care at academic institutions to be delivered by the same patient care team for all patients admitted to the ICU (ie, closed units), whereas at a community hospital, care may be delivered by a number of different physician providers (ie, open units). ICU policies and procedures are more standardized in closed units.

Nurses’ perceptions, when categorized by frequency of delirium assessment, provide some helpful clues about the low frequency of delirium assessment reported. Nurses who do not routinely evaluate patients
for delirium are unaware that (1) delirium is an underdiagnosed problem in the ICU, (2) patients with delirium are often hypoactive, (3) nondrug therapies should generally be considered before antipsychotic therapy, and (4) delirium is often associated with fluctuating signs and symptoms.29

The survey highlights 3 major barriers to assessment of delirium: (1) the difficulty in evaluating delirium in patients who are intubated, (2) the inability to complete a delirium assessment in sedated patients, and (3) the use of delirium assessment tools that are too complex. The last barrier contrasts with research showing that these tools are quick and easy to use and that only 5% of the nurses surveyed reported that delirium assessments were too time-consuming to perform.30,31 In addition, both the CAM-ICU and the ICDSC assessments incorporate a concomitant sedation assessment so that delirium assessments with these instruments are not attempted in heavily sedated patients.30,31 It is unclear if the increasing ratio of patients to staff nurses in some ICUs is compromising the ability of nurses to screen for delirium or if the increasing level of acuity of care of patients is resulting in deeper sedation of patients and a greater emphasis on sedation rather than delirium.31 Fewer than half of the respondents used a validated delirium screening tool (eg, ICDSC, CAM-ICU) as the primary means for assessing delirium. Relying on the presence of agitation-related events or the inability to follow commands (the 2 most commonly reported methods of detecting delirium) to detect delirium will cause nurses to miss many cases of delirium, particularly in patients who have hallucinations, disorganized thinking, or sleep disturbances and patients who are hypoactive.7

Surprisingly, despite the complexity associated with detecting delirium in the ICU, more than one-third of the nurses reported receiving no training about delirium. Nurses who did receive training in assessing delirium in the previous year were more likely to have received the training in a live, out-of-hospital event than through either an in-service training session or at the bedside. The lack of institutional teaching about assessment of delirium most likely is due in part to a lack of clarity about the optimal way to educate nurses about assessment of delirium or to decisions about the nursing curriculum being made by persons who are either not aware of delirium assessment in the ICU or who think that assessment of delirium is not important.32

Our findings highlight the importance of boosting educational efforts focused on assessment of delirium in the ICU. This training should emphasize the rationale for delirium assessment, the fluctuating and transient nature of delirium, the effect that screening for delirium may have on improving patients’ outcomes, and the importance of using a validated tool for screening. Interventions to help integrate efforts to assess delirium into everyday nursing practice in the ICU must be developed and tested.

Several limitations of our survey deserve mention. Although the response rate of 55% may lead to response bias, it is greater than the response rate for many other surveys of health care providers.33 Although the purpose of the survey was to determine the priority that nurses place on delirium screening relative to other clinical conditions in the ICU, the choices were not mutually exclusive in all instances, because both agitation and altered level of consciousness are hallmark signs of delirium. All data were self-reported; no validation with practice was available. Therefore, our survey is more closely modeled to be an assessment of nursing education needs (conducted by addressing self-perception among nurses) rather than a practice valida-
tion such as the validations implemented during quality assurance programs. The survey was sent solely to staff nurses and not to other health care professionals (eg, physicians or pharmacists) who may be involved in decisions surrounding assessment or treatment of delirium.

Furthermore, the survey results represent only nurses from a single US city and thus may not be representative of critical care nurses in other US cities or in other countries. The survey results represent only practices and perceptions of nurses working in medical, surgical, and cardiac units and not those of nurses working in trauma or neurological ICUs, where practices and perceptions related to delirium assessment may be different. Other limitations include the limited number of respondents from community hospitals and the exclusion of institutions where delirium assessment was not part of the protocol. Lastly, few nurses who responded work primarily at night, and thus our results do not reflect practices during the night shift. Despite these limitations, our results provide the first extensive view of practices and perceptions of ICU nurses related to assessment or treatment of delirium.

Conclusions

Practice and perceptions of delirium assessment vary widely among ICU nurses despite the presence of sedation guidelines in their ICUs that promote delirium assessment. Our results highlight potential areas for future research, including investigations of interventions to promote assessment of delirium by ICU nurses, the ideal educational strategy to promote assessment of delirium among nurses, the ideal frequency with which delirium should be assessed, and the effect that the routine assessment of delirium by ICU nurses has on patients’ outcomes such as duration of ICU stay or severity of longer-term cognitive abnormalities.

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FINANCIAL DISCLOSURES

None reported.

REFERENCES


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CE Test  Test ID A081706: Assessment of Delirium in the Intensive Care Unit: Nursing Practices and Perceptions. Learning objectives: 1. Characterize the signs and symptoms of delirium. 2. Identify the importance of assessing ICU patients for the presence of delirium. 3. Discuss the challenges associated with evaluation of delirium in ICU patients.

1. Which of the following are hallmark signs and symptoms of delirium?
   a. Confusion and hallucinations
   b. Tachycardia and tachypnea
   c. Altered level of consciousness and agitation
   d. Combativeness and sleep disturbances

2. Which of the following statements regarding delirium is truest?
   a. Delirium is associated with fluctuating signs and symptoms.
   b. Delirium is associated with consistent signs and symptoms.
   c. Delirium is best assessed by a nurse who is not caring for the patient.
   d. Patients with delirium are rarely hypoactive.

3. Which of the following patients is least likely to develop delirium?
   a. A patient with numerous comorbid illnesses
   b. A patient who is young
   c. A patient who has received a benzodiazepine medication
   d. A patient with preexisting cognitive impairment

4. Delirium occurs in what percentage of mechanically ventilated patients in the ICU?
   a. 20% to 30%
   b. 40% to 50%
   c. 60% to 70%
   d. 80% to 90%

5. The survey reported in this article compared the delirium assessment practices of ICU nurses to those of what other assessment practices?
   a. Sedation assessment
   b. Pain assessment
   c. Confusion assessment
   d. Anxiety assessment

6. Which of the following best describes the majority of nurses who responded to the delirium assessment survey?
   a. Baccalaureate degree, worked predominantly night shift
   b. Approximately 14 years of ICU experience, mean age of 25 years
   c. Worked predominantly day shift, worked in a medical or surgical ICU
   d. Worked in a teaching hospital, worked approximately 12-16 hours per week

7. Of conditions for which ICU patients were routinely evaluated, which did nurses rank lowest in importance?
   a. Presence of pain
   b. Presence of altered level of consciousness
   c. Presence of delirium
   d. Presence of improperly placed invasive devices

8. Nurses who rarely evaluated their patients for delirium were likely to agree with which of the following statements?
   a. Delirium in the ICU is an underdiagnosed problem.
   b. The signs and symptoms of delirium are usually consistent throughout an entire nursing shift.
   c. The initial intervention for patients with delirium should be removal of all sedating and/or narcotic medications.
   d. ICU patients with delirium are often hypoactive.

9. Of the 6 possible methods to evaluate for the presence of delirium presented in the survey, which was used most frequently by the nurses who responded?
   a. The Confusion Assessment Method for the Intensive Care Unit
   b. Assessment of the patient’s ability to follow commands
   c. Psychiatric consultation
   d. Evaluation of agitation-related events

10. Which of the following statements regarding education/training for nurses in delirium assessment and evaluation is truest?
    a. Training in delirium assessment is mandated by the Joint Commission and Medicare.
    b. Nurses are more likely to receive delirium assessment training in hospital than out-of-hospital.
    c. Delirium assessment training is essentially the same as the training for sedation assessment.
    d. Delirium assessment training should emphasize the rationale for assessment of delirium.

11. Current epidemiological evidence suggests that the behavior of ICU patients with delirium is more likely to be described as which of the following?
    a. Hyperactive only
    b. Hypoactive only
    c. Hypoactive and mixed hyperactive-hypoactive
    d. Mixed hyperactive-hypoactive

12. What was the most common barrier to evaluation of delirium in ICU patients that nurses respondents in the survey identified?
    a. Inability to complete delirium assessments in sedated patients
    b. Lack of confidence in ability to use delirium assessment tools
    c. Difficulty of evaluating intubated patients
    d. Assessments too time-consuming to perform

13. Further research in what area related to ICU delirium assessment is recommended by this article’s authors?
    a. Effect of routine assessment of delirium by ICU nurses on patient outcomes and patient lengths of stay
    b. Most effective medications for use in prevention and treatment of delirium
    c. Effective screening tools for identification of ICU patients most at risk for developing delirium
    d. Ideal treatment strategy for ICU patients with delirium

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1. a  2. a  3. a  4. a  5. a  6. a  7. a  8. a  9. c  10. a  11. c  12. c  13. c

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