

## Checklist of Nonverbal Pain Indicators (CNPI) Brief

The Checklist of Nonverbal Pain Indicators (CNPI) was designed to *observe and* measure pain behaviors in cognitively impaired elders. The tool includes six pain behavioral items commonly observed in older adults including nonverbal vocalizations, facial grimacing or wincing, bracing, rubbing, restlessness, vocal complaints. Each item is scored on a dichotomous scale (1=present, 0=not present) both at rest and on movement, for a possible range of scores from 0 to 6 points for each situation and a total of 12 points.

The CNPI was tested in a convenience sample of cognitively intact and cognitively impaired hospitalized older adults with hip fracture. The cognitively impaired group included individuals who were not severely demented. Moreover, observations were made by two gerontological nurse practitioners on the third postoperative day, which may indicate the patients would be experiencing less severe postoperative pain.

*Two subsequent studies tested CNPI in patients with predominantly persistent pain in the longterm care setting (Jones, 2005 & Nygaard, 2006). There was a wider range of mental impairment and ethnic diversity in follow-up samples. All studies had adequate sample size for tool evaluation. Nygaard contributed to face validity by establishing concurrent validity with caregivers' proxy perception of pain intensity as measured on VAS. Subsequent studies further support item selection but more specifically attribute restlessness and rubbing to resting pain observations.*

### Administration and scoring

Method of administration and scoring procedures are clearly described and appear simple to follow. No interpretation of tool score is provided however. Although the time needed to administer the tool has not been formally evaluated, it is short and appears easy to use. In the initial testing two gerontological nurse practitioners did assessments. *Nygaard showed reliable use of the tool in longterm care staff with mixed skill levels.*

### Reliability

- Internal consistency reliabilities were low but this may relate to the few items in the tool. *Internal consistency continued to be low in the Nygaard follow-up study.*
- Interrater reliability between two independent raters was good – very good (Feldt) *and inadequate – good (Nygaard)* for behaviors observed
- Test-retest reliability was not deemed an appropriate parameter to examine when assessing acute pain due to its changing nature. However, test-retest reliability should be established if used with persistent pain states.
- *Intrarater reliability (Nygaard): There was moderate to good intra-rater reliability for all six items except rubbing. Nurses had lower test-retest reliability than auxiliary nurses.*

### Validity

- Concurrent validity was evaluated by comparing CNPI scores with VDS scores for 64 subjects for whom both CNPI and VDS scores were available. For the total population Spearman correlations at rest were moderately significant. In the impaired group, Spearman correlations at rest correlated poorly, leading the tool developer to conclude that the tool is only valid for assessment of pain with movement.

- Construct validity was demonstrated by the data under concurrent validity because higher scores on the CNPI were attained during periods of movement eliciting discomfort than during periods of rest. *In all studies done so far, resting scores for pain are too low to interpret. Poor sensitivity of the tool found by Jones supports Feldt's suggestion that the CNPI observes acute pain behaviors and may not be strong in detecting persistent pain.*
- Nygaard found better correlation with the VAS among proxy ratings which may be included as part of the overall pain assessment in cognitively impaired older patients. *However, the meaningfulness of concurrent validity between an informant rating and an observer tool (CNPI and proxy-VAS) is limited when both tools are administered by the same person. Jones categorized responses into 4 levels of pain intensity (none, mild, moderate and severe) similar to the MDS, but found that ratings varied according to the intensity scale used. At this point there is no evidence that any number or nature of pain behaviors from the CNPI might correspond with these four levels of pain intensity.*

### Summary

The CNPI is a brief, clinically useful approach to assessing pain in older adults with cognitive impairment. Items included in the scale are conceptually sound. *There are no recommendations for a cut-off score.* Preliminary tool testing provides initial support for use of the tool at least with elders in acute care setting. The CNPI needs further evaluation to determine its usefulness with nonverbal elders including those in long term care settings. *Jones points out that only half of patients who were able to report pain actually displayed pain behaviors. It was concluded that observation alone did not disclose pain in these patients.* Addition of items that consider more subtle behaviors or changes in behaviors or interaction would improve comprehensiveness and ability to detect pain in those with less obvious behavioral manifestations. *The Nygaard study was able to demonstrate ease of use of the CNPI for a group of caregivers with different educational levels in Norwegian nursing homes but further investigation for reliable administration in US care settings is recommended.*

### Sources of evidence

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