The Non-Communicative Patient's Pain Assessment Instrument (NOPPAIN) Brief

The Non-Communicative Patient's Pain Assessment Instrument (NOPPAIN) is a nursing assistant-administered instrument for assessing pain behaviors in patients with dementia. This tool focuses on observation of specific pain behaviors while doing common care tasks. Pain is assessed at rest and with movement. The tool has four main sections: 1) care conditions under which pain behaviors are observed such as bathing, dressing, transfers; 2) six items about presence/absence of pain behaviors (pain words, pain noises, pain faces, bracing, rubbing and restlessness), 3) pain behavior intensity ratings using a six point Likert scale; 4) a pain thermometer for rating overall pain intensity.

The method of administration for using the NOPPAIN is described; however, scoring procedures are unclear. Moreover, no criteria are provided for establishing low-high intensity of pain behavior. Interpretation of tool score is unclear and there is no indication on how to proceed once rating of individual items is completed.

The tool requires little time to complete following a period of observation consistent with time to complete care activities. *NOPPAIN derives a level of pain intensity from the presence and intensity of behaviors observed. The tool developers called it a pain screening tool because diagnosis or analysis of observation is not within the scope of NA practice. NAs are asked to perform behavioral observation and rate intensity of behaviors prior to formulation of a global pain score in each patient. The basis for assessment of intensity of behaviors is not reported neither is the process of how NAs translate the NSR of behavior intensity into a VDS of pain intensity.*

The tool was clearly developed for use by nursing assistants. Thus, scope of practice for nursing assistants in screening for pain must be considered. It is unclear what investment in training of nursing assistants is needed to assure accuracy in tool completion. *Horgas (2007) tested the reliability and validity of the NOPPAIN when used as assessment instrument by nurses; she demonstrated that accuracy of administration might be improved with training.*

The NOPPAIN has been evaluated in two studies:

Study 1 involved research NAs who viewed videos of an actress portraying an individual with severe dementia receiving care from a NA. The NAs were mainly African-American, female, on average 37 years of age with high school diploma/GED and nearly 10 years of experience.

In study 2 The NOPPAIN was evaluated in 4 Houston nursing homes and a VA nursing home unit and involved severely demented residents; the sample was predominantly female and culturally diverse. The nursing assistants were mainly female African-American, average age 37 years with 50% holding a high school education.

The tool is complex and large sample sizes would be needed to establish internal consistency for all items. Using 5 subjects per tool item as a minimum requirement for this review, a minimum sample size of 35 subjects (7 items x 5 subjects) would be needed to test the six pain behaviors, their intensities and the global pain score on the pain thermometer. Study 2 (unpublished) and study 3 involving real patients met the minimum sample size requirement. More studies are needed beyond the laboratory setting and involving more diverse patient populations.

Reliability
- Internal consistency. No report of internal consistency is currently available.
- Interrrater reliability was evaluated in study 2 (see above) using videotapes of NAs performing morning care tasks with residents with dementia. Twenty six videos were shown to 6 untrained NAs and to 6 NAs who received one hour of training on use of the NOPPAIN. IRR's were moderate to strong for all tool items and improved with one hour of training. Horgas found interrater reliability *for presence of the 6 behaviors to be good. Average interrater reliability for pain intensity was very good.*
- Test-retest reliability was evaluated in study 2 with a subset of untrained NAs. Results indicate low to moderate test retest reliability at both 2 and 24 hours. Only the Pain thermometer was stronger at 2 hours than 24 hours. *In the Horgas study, each student rater re-scored 10% of the videos 1 week later: average κ of 0.7 and 0.86 for presence of pain. ICC >0.67 for pain intensity ratings (missing intra-rater consistency for pain words and rubbing).*

Validity
- Construct validity was evaluated in study 1 using standard videotaped patient scenarios representing a continuum of pain intensity levels using an actor to portray a bed-bound patient with severe dementia receiving care from a NA. NAs watched and rated videos using the NOPPAIN assessment process and completed global pain rating for each video. NAs global pain rating on the NOPPAIN and pain levels portrayed in the videos resulted in weighted Kappa=0.87. NAs identified videos showing the most pain from each of 15 pairs. The parameter estimates conformed to expected responses, although borderline. The lowest intensity pain condition had the smallest parameter, with parameter size increasing with each subsequent level of the pain response scale. All pain level comparisons were 82-10% correct.
- Construct validity was evaluated in study 2 comparing NOPPAIN ratings by untrained NAs to physician NOPPAIN ratings and physician pain classification (pain/no pain) using sensitivity/specificity. For the Pain Activity Summary Score sensitivity and specificity was moderate to strong. For the Pain Behaviors Summary Score sensitivity was strong, however specificity scores were low suggesting the tool may classify patients as having pain when they are not. Moreover caution is warranted due to low levels of pain in the sample that limits evaluation of tool ability to detect pain in those with higher pain levels.
- *Horgas compared nurse-ratings of pain intensity with videotaped behaviors of real patients believed to be in pain. Videos were coded extensively using the Keefe and Block Pain Behavior Measurement System. This additional standard for comparison adds to claims for convergent validity of the NOPPAIN even outside the laboratory setting.*
- *Horgas found strong correlations between NOPPAIN and self-reported VDS and NRS in the cognitively intact population only. This underscores the need for behavioral assessment in this population.*
- *The concern remains that the tool only captures typical pain behaviors and while raters consistently identify intensity as portrayed in an enacted sequence there is no validation that patients will present with this sequence as expression of intensity. A*

final concern is that, while caregivers can identify pain in video, they may actually under-detect pain within the caregiving context itself.

Summary

The NOPPAIN was developed for the purpose of nursing assistant's screening for pain in older adults with dementia. The tool has limited comprehensiveness with behaviors addressing only obvious and not subtle cues or changes indicated in the literature. However, preliminary testing has established that the screening tool is reliable and has preliminary validity, thus may be useful when combined with a more comprehensive screen for other indicators. Use of proxy report for pain severity in a nonverbal population has not been supported in the literature and this aspect of the tool should be evaluated in clinical samples. The tool has been tested in a racially/ethnically diverse sample, although further study is warranted. The tool appears to be clinically useful given the ability of nursing assistants to use and the limited time required for completion. Further psychometric testing is encouraged, including consideration of items to tap nursing assistant's knowledge of baseline behavior and recognition of subtle changes that might reflect presence of pain. Because assessment activities are outside the scope of nursing assistant practice, it will be important to determine if the expectations of the tool for NA's are actually screening activity. *The tool was used successfully by senior nursing students in the laboratory setting rating real patient videos.*

Sources of evidence

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