

Discomfort Behavior Scale (DBS) Brief

The stated purpose was to develop and test the psychometric properties of the Discomfort Behavior Scale for the identification of discomfort in persons with cognitive impairment and to improve pain management in nursing homes. The DBS is based on informant data in the MDS and builds on the Assessment of Discomfort of Dementia (ADD) protocol which uses a Behavior Symptoms List (BSL) to identify discomfort. The tool does not necessarily differentiate those in pain, but identifies those with discomfort that may be due to pain or other sources.

The tool includes at least one cue from each of the 6 categories of non-verbal pain behaviors in the AGS Persistent Pain Guidelines. Facial expression, Verbalizations/vocalizations, Body language and to some extent Changes in activity patterns or routines, Mental status changes and Changes in interpersonal interactions. However, nonverbal vocalizations (such as moaning) and bodily movements that accompany pain (e.g. rubbing, bracing, or limping) are absent due to limitations within the MDS data set itself.

The DBS focus is on discomfort, rather than pain, and there could be issues related to meaning of the tool score. However, many of the behavior indicators included represent possible pain indicators and capturing changes in them may reflect pain behavior. The tool represents a comprehensive screening approach to recognizing pain in those not presenting with typical pain behaviors and would necessitate further evaluation.

Data were obtained from CMS to access MDS Quarterly Assessments and narrowed to those with cognitive impairment using the MDS CPS. The data set of residents was split into three groups for exploratory factor analysis, confirmatory factor analysis and final assessment for scaling properties. This extremely large sample is strong for initial tool development but suffers from limitations relating to the accuracy of assessments recorded in the MDS records.

Administration and scoring

Use of the DBS requires computer coding within each nursing home to calculate the tool score. It is not clear what financial and personnel resources would be required for implementation. It would appear that nursing staff would not be involved on a regular basis to generate the DBS score, but would be essential in follow-up evaluation to determine if the behavioral indicators identified are related to pain or some other etiology.

Reliability

Internal consistency for the total scale was sufficient and a shared variance estimate of 76% indicated that only 24% of the average variance was due to error. Interrater and intrarater reliability have not been studied yet. Because the tool uses data already documented in the MDS, issues related to reliability of the initial documentation impact the DBS reliability.

Validity

Factor analysis proposed and confirmed the single dimension of the model generating a single DBS score. Pairwise comparisons with CPS, pain frequency, pain

intensity and sex were examined and were variable across measures and levels within the variables ranging from no effect ($d=.09$) to a moderate effect ($d=0.40$).

The DBS has preliminary construct validity, but additional evidence of discriminant, concurrent and criterion validity is needed. Additionally, study of the sensitivity of the DBS to detect pain in persons with dementia and response to treatment is important. Concerns exist regarding the accuracy/reliability of the MDS reporting methods which are known to underreport pain.

Summary

DBS items include the scope of behavioral indicators that may represent pain in persons with dementia; however, some key indicators are not included because of limitations within the MDS dataset. The tool has reasonable content and construct validity and preliminary internal consistency established with a large dataset of existing patient MDS records. Given that it is used only quarterly, the tool may be best used for a screening approach that triggers further direct observation and evaluation to determine if the findings are related to pain. The subject sample is appropriate, however validation in minority samples is needed, as well as testing to establish discriminant and criterion validity and sensitivity to treatment effects. Scoring procedures and resources required to transform MDS data into the DBS total score are not clear, nor is its use in the clinical setting. Further tool testing and future utility will likely be impacted by revisions to the MDS 3.0 expected in 2009.

The authors have provided a scoring grid which is posted on this website (Karen Stevenson, personal communication, July 2008).

Source of evidence

Stevenson, K., Brown, R., Dahl, J., Ward, S., & Brown, M. (2006). The Discomfort Behavior Scale: A measure of discomfort in the cognitively impaired based on the Minimum Data Set 2.0. *Research in Nursing & Health*, 29, 576-587.

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