

## The Discomfort Scale-Dementia of the Alzheimer's Type (DS-DAT)

**Description:** The Discomfort Scale-Dementia of the Alzheimer's Type (DS-DAT) was developed by Hurley, Volicer, Hanrahan, and Volicer (1992) primarily for use in the conduct of research. The tool covers nine categories: noisy breathing, negative vocalizations, content facial expression, sad facial expression, frightened facial expression, frown, relaxed body language, tense body language, and fidgeting. Items are scored by indicating behaviors that are present/absent with a resulting range of scores from 0 to 27.

**Psychometrics:** Content validity for the DS-DAT is fairly well established in English, Italian, and Dutch, based on expert consensus of behavioral indicators of discomfort or pain in dementia. Evidence for discriminant validity is moderately strong, with reports of detecting significant differences pre and post intervention. The tool maintains moderate concurrent and criterion validity with other observational pain tools, as follows: CPAT ( $r_s = .22$ ,  $p = 0.076$ ,  $r_s = 0.25$ ,  $p = 0.048$ ), PAINAD (0.56-0.76), Pittsburgh Agitation Scale (0.51), as well as with self-report (using VAS: 0.56-0.81). However, there was no consistency of model identified in a confirmatory factor analysis in an osteoarthritis pain sample.

Moderately strong inter-rater reliability scores have been maintained, although these have been calculated in a variety of ways across studies, none using the most robust measurements. Significant training time was reported to reach the highest level of agreement between raters. Test-retest measures were fair after one hour with independent raters. Intra-rater reliability scores indicate moderate stability with

correlations reported at 0.6. Fair internal consistency coefficients have been reported across studies (.69-.83).

**Settings and Languages:** The tool has been evaluated in primarily Caucasian samples in nursing homes (United States, Italy, and The Netherlands) and acute care Veterans Administration Hospitals (United States). The DS-DAT has been translated from English into both Italian and Dutch. The DS-DAT was recently used in research in Jordanian nursing homes, it is unclear if a translated version was used for pain assessment.

**Scoring and Interpretation:** Scoring of this tool is complex. Each item is dichotomously scored as present or absent. If the item is present, it is then scored for frequency, duration, and intensity, resulting in a possible item-level score of 0 to 3 points and a total score range from 0 (no observed discomfort) to 27 (high level of observed discomfort).

**Feasibility/Clinical Utility:** Extensive training time is potentially required for use (30+ hours) and proper administration of the DS-DAT, limiting feasibility as an everyday clinical tool. It is therefore recommended for research use with well trained raters. Administration requires waiting 15 minutes after a possible discomfort event, followed by observation of the individual at rest for a minimum of 5 minutes. The tool is only to be administered when the older adult is at rest, a limitation which may result in undetected pain problems. Cut-off scores are not provided, and no guidance on the use of the scale in clinical decision making is available.

**Summary/Critique:** Although the DS-DAT is well established as a reliable tool for use in research to assess discomfort in persons with dementia, validity for persons with

pain-specific conditions warrants further study. Follow up psychometric evaluation of the DS-DAT has been conducted in various settings, but with limited rigor in more recent studies. The tool prescribes observation at rest which may result in non-detection of pain indicators evident only on movement. Additionally, discomfort conceptually encompasses pain, but would also include behaviors which may not be an expression of pain. The tool requires extensive training to achieve acceptable interrater reliability, thus placing limitations on its use as a clinical assessment tool in routine nursing care of elders with dementia who may be experiencing pain. The construct validity concerns combined with complex administration issues suggest tool refinement may be useful.

**Contact Information for Tool Developer:**

We were unable to obtain permission to post the contact information.

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