

Assessment Tool	Domains of Behavior	Who Administers and How	Number of Items	Response Categories	Estimated Time to Administer	Setting and Target Population	Reliability and Validity
Part II: Specific Behavior Scales- Agitation Scales							
16. Cohen-Mansfield Agitation Inventory (CMAI)	Agitation: physically aggressive, physically non-aggressive, verbally agitated, and hiding/hoarding behaviors	Informant interview	29 items Short form is 14 items Community form is 37 items	Based on prior 2 weeks Rated 1 = never to 7 = several times in an hour Range 0-203 Higher scores indicate greater agitation	<30 minutes	Originally designed for Nursing home residents but also used in community settings	Internal consistency reliability $\alpha = 0.86-0.91$ based on shift worked. Interrater reliability for the total score was 0.41. Pearson product-moment correlations between CMAI and Behave-AD and BSSD range from .0304 - .5177 depending on shift.

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17. Agitated Behavior in Dementia Scale (ABID)	Agitation	Informant/caregiver interview	16 items and caregiver distress	<p>Frequency rated on past 2 weeks - each week rated separately</p> <p>Frequency rated 0 = did not occur in the week to 3 = occurred daily or more often</p> <p>2 weekly scores are added together for a final score on each item of 0 to 6</p> <p>Range 0-48</p> <p>Higher scores indicate greater agitation</p> <p>Caregiver reaction only rated once in 2 weeks</p> <p>Caregiver reaction rated 0 = not upsetting to 4 = extremely upsetting</p> <p>Reaction range 0 to 64.</p> <p>Higher scores indicate greater reaction</p>	<20 minutes	Dementia patients residing in community	<p>Internal consistency = .70</p> <p>Test-retest reliability .60-.73</p> <p>Validity confirmed with correlation to RMBPC (r = .74, p<.0001), BRSD (r = .65, p<.0001), and the CMAI (r = .62, p<.0001).</p>

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18. Pittsburgh Agitation Scale (PAS)	Agitation 4 behavior groups: Aberrant Vocalization Motor Agitation Aggressiveness Resistance to care	Direct observation and scoring by trained health professionals	Frequency and intensity of behavior	<p>Period of observation ranged from 1 to 8 hours</p> <p>Scale is 0 to 4: each group has different scoring criteria based on the behavior of interest</p> <p>Scores are not totaled</p>	<5 minutes	In-patient unit for dementia patients with behavioral problems and nursing home residents with dementia	<p>Interclass correlation $r = +.82$-$+.93$ for total score</p> <p>Individual item $r = +.54$ - $+.88$.</p> <p>Validity is confirmed by the difference in scores when interventions to reduce agitation were initiated compared to no interventions.</p>
19. Brief Agitation Rating Scale (BARS) (short-form of Cohen-Mansfield Agitation Inventory)	Agitation	Informant Review	10 items	<p>Based on prior 2 weeks</p> <p>Rated 1 = none to 7 = several times a day</p> <p>Range 10-70 Higher scores indicate greater agitation</p>	Not specified.	Nursing Home residents with dementia	<p>$\alpha = 0.74$ to 0.82.</p> <p>The intra-class correlation $r = 0.73$.</p> <p>The score correlated well with a CMAI done on the patient.</p>

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20. Overt Agitation Severity Scale (OASS)	Agitation (3 domains: Vocalizations and oral/facial movements Upper torso and upper extremity movements Lower extremity movements)	15-minute observation	12 items (3 domains)	Rated during 15 minute observation period Intensity in 3 domains scored as 1-4 with each domain having different descriptions of intensity. Item frequency rated as 0 = not present to 4 = always present Intensity and frequency are multiplied for each item to give a severity score Severity scores are totaled for the OASS total score Higher scores indicate greater agitation	15 minutes	Adult psychiatric patients, including those with dementia	Pearson correlation coefficient (r = .90, p<.01) Convergent construct validity through strong association with PAS (r = .81, p<.01 for rater 1 and r = .82, p <.01 for rater 2). Discriminant validity established by low correlation between OASS and OAS (r = .28, p<.01).
21. Disruptive Behavior Rating Scales (DBRS)	Physical aggression Verbal aggression Agitation Wandering	Direct observation, chart review, staff report, or patient self-report	21 items	Daily for a week Rated 0 = insufficient data To 5= behavior occurs and has a severe effect or results in extreme intervention (life-threatening injury) Range 0-105 Higher scores indicate greater agitation	5-10 minutes	Dementia residents in nursing facilities	Inter-rater reliability: Physical aggression (r=.91) Verbal aggression (r=.83) Agitation (r=.84) Wandering (r=.71) Total (r=.93) Validity: Total score correlation with nurse's assessment rating for severity (r=.73, p<.001) and with distress (r=.85, p<.001).

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Table 1. Notes

¹ The Behavioral Domain column lists area using the labeling of behaviors as reported within the cited article.

α = Cronbach's alpha

ABID = Agitated Behavior in Dementia Scale

ABS = Aggressive Behavior Scale

ADL = Activities of Daily Living

AES - C = Apathy Evaluation Scale - Clinician

AES - I = Apathy Evaluation Scale - Informant

AES - S = Apathy Evaluation Scale - Self

AES = Apathy Evaluation Scale

AI = Activity Inventory

AWS = Algase Wandering Scale

V2 = version 2

BAI = Beck Anxiety Inventory

BARS = Brief Agitation Rating Scale

BDI = Beck Depression Inventory

BEHAVE-AD = Behavioral Pathology in Alzheimer's Disease

BRSD = CERAD Behavior Rating Scale for Dementia

BSSD = Behavioral Syndromes Scale for Dementia

CABOS = Computer Assisted Behavioral Observation Systems

CCL - A = Cognition Checklist for Anxiety

CCL - D = Cognition Checklist for Depression

CDR = Clinical Dementia Rating Scale

CES-D = Center for Epidemiologic Studies Depression Scale

CMAI = Cohen Mansfield Agitation Inventory

CMAI = Cohen-Mansfield Agitation Inventory

CSDD = Cornell Scale for Depression in Dementia

DAIR = Dementia Apathy Interview and Rating Scale

DASS = Depression Anxiety Stress Scale

DBD = Dementia Behavior Disturbance Scale

DBRS = Disruptive Behavior Rating Scales

DMAS = The Dementia Mood Assessment Scale

DSM-IV = Diagnostic and Statistical Manual of Mental Disorders IV

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DSS = Dementia Signs and Symptoms Scale ESS = Epworth Sleepiness Scale FrSBe = Frontal System Behavioral Scale GAI = Geriatric Anxiety Inventory GDS = Geriatric Depression Scale HADS = Hospital Anxiety and Depression Scale HAM-A = Hamilton Rating Scale for Anxiety HAM-D = Hamilton Rating Scale for Depression HD = Huntington's Disease IADL = Instrumental Activities of Daily Living IAS = Irritability Apathy Scale KBCI = Key Behavior Change Inventory LARS = Lille Apathy Rating Scale MCI = Mild Cognitive Impairment MDS = Minimum Data Set mMMSE = Modified Mini-Mental Status Exam MOAS = Modified Overt Aggression Scale NHBPS = The Nursing Home Behavior Problem Scale NOISE = Nurse Oriented Scale for Inpatient Evaluation NOSGER = Nurses' Observation Scale for Geriatric Patients NPI = Neuropsychiatric Inventory NPI-C = Neuropsychiatric Inventory - Clinician NPI-Q = Neuropsychiatric Inventory - Questionnaire NRS = The Neuro-behavioral Rating Scale OAS = Overt Aggression Scale OASS = Overt Agitation Severity Scale PANSS = Positive and Negative Symptom Scale PAS = Pittsburgh Agitation Scale PD = Parkinson's Disease PHQ-9 = Patient Health Questionnaire - 9 PLUT = Plutchik Scale PSQI = Pittsburgh Sleep Quality Index RAGE = Rating Scale for Aggressive Behavior in the Elderly RAID = Rating Anxiety in Dementia RAS = Ryden Aggression Scale							

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<p>RMBPC = Revised Memory and Behavior Problem Checklist SANS = Scale for the Assessment of Negative Symptoms SDI = The Sleep Disorders Inventory SF - 20 = 20-item Short Form Survey TBI = Traumatic Brain Injury</p> <p>Brief Psychiatric Rating Scale not included since generally used to assess psychosis in patients with schizophrenia.</p> <p>Scale for the Assessment of Negative Symptoms (SANS) and Positive and Negative Symptom Scale (PANSS) are not included since primarily used in patients with schizophrenia.</p> <p>Unified Parkinson's Disease rating scale not included as it is a single item for apathy that does not have any reliability measure.</p> <p>Hamilton Depression Rating Scale not included because it was first published in 1960 and is no longer considered the gold standard. While it has adequate internal reliability, many of the items do not contribute to depression severity, response options are not optimal, and the retest reliability is poor. Content validity has also been found to be poor (Bagby, Ryder, Schuller & Marshall, 2004).</p> <p>The Mini Nutritional Assessment was not included because it does not address behavior. The Nutritional Risk Index and DETERMINE Your Nutritional Health Checklist were not included because they do not address behavior and because validity has not been established.</p> <p>GDS was not included as at least two studies have found it not to be as reliable and valid in a dementia population as in the general geriatric population (Burke, 1989; Korner, 2006).</p> <p>CES-D was not included as there was no evidence of reliability and validity in a dementia population.</p> <p>State/Trait anxiety scale: originally published prior to 1980.</p> <p>Geriatric Evaluation by Relative's Rating Instrument (GERRI) Schwartz, G. (1983). Development and validation of the Geriatric Evaluation by Relative's Rating Instrument (GERRI). Psychological Reports. 53:479-88-not included because there is no subscale for neuropsychiatric symptoms.</p> <p>Clinical Assessment of Psychopathology among Elderly Residents (CAPER): Reichenfeld (1992) not included because it does not address specific behaviors of dementia-it is for diagnosis of psychotic disorders. It is also based on psychiatrist interview.</p>							