

1997-05-01

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Repository Citation

Swearer JM, Drachman DA. (1997). Caretaker Obstreperous Behavior Rating Scale. Neurology Publications and Presentations. <https://doi.org/10.1017/S1041610297003554>. Retrieved from https://escholarship.umassmed.edu/neuro_pp/305

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Caretaker Obstreperous Behavior Rating Scale

Joan M. Swearer and David A. Drachman

Although Alzheimer's original description of the dementing disorder that bears his name emphasized the prominence of troublesome and disruptive behaviors, a systematic investigation of behavioral disturbances of dementia did not begin in earnest until the 1980s. At that time, as the neuropathologic identity of presenile Alzheimer's disease and late-onset "senile dementia" was recognized, the redefinition of Alzheimer's disease abruptly increased the number of patients diagnosed with this condition. Physicians and other medical personnel working with Alzheimer's disease patients recognized both the importance of abnormal behaviors in this now large patient population and the need to describe, classify, and quantify these behaviors.

DEVELOPING THE CARETAKER OBSTREPEROUS BEHAVIOR RATING ASSESSMENT SCALE

In an early study, the authors conducted a retrospective analysis of a series of patients with dementia from an Alzheimer's Disease and Related Disorders Clinic. After documenting the types, frequency, and disruptive effects of aberrant behaviors, the authors determined whether the behaviors were related to the origin of dementia, its severity, or other clinical attributes. The analysis indicated that a wide range of troublesome and disruptive behaviors are frequently associated with dementing disorders, that many behaviors appear to be related to severity of disease, and that these behaviors occur in dementias of varied etiologies. The authors further recognized the need to investigate the entire range of aberrant behaviors that may occur in dementia and to develop an instrument with which they could be accurately measured.

At the time, several geriatric rating scales were available to assess behavioral disturbances, but few were specifically designed or appropriate for patients with dementia. There was (and still is) no accepted "gold standard" for measuring aberrant behaviors in this population. Although patients with dementia exhibit a range of abnormal behaviors, no available instrument comprehensively targeted

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the behaviors observed in these patients, nor did they provide operational definitions of these behaviors or conceptually clear and unambiguous quantifications of their severity. Because neither the validity nor reliability of most scales was adequately tested in demented populations, their utility as investigational tools was questionable and their validity as efficacy measures in treatment studies unproved.

To address these issues, the authors developed the Caretaker Obstreperous Behavior Rating Assessment (COBRA) Scale to identify, classify, and quantify behavioral disturbances of dementia. The COBRA Scale classifies abnormal behaviors into four categories: (a) aggressive and assaultive behaviors; (b) disordered ideation and personality; (c) mechanical and motor abnormalities, and (d) vegetative disorders. Thirty specific "obstreperous" behaviors are identified and operationally defined. The COBRA Scale was designed for use by family or professional caregivers. To ensure the reliability and uniformity of identification by the raters, a training videotape was produced in which most of the behaviors are shown by professional actors.

The COBRA Scale uses an operational means of quantification through ratings of frequency and disruptive effect. Frequency ratings range from 0 (the behavior has not occurred with the past 3 months) to 4 (the behavior occurs daily or more often). Severity ratings range from 0 (the behavior poses no harm) to 4 (the behavior causes severe harm). Maximum severity ratings are appropriately limited for each behavior, such that the highest severity rating for aggressive behaviors is 4 (severe), whereas the maximum severity rating for muttering is 1 (trivial).

Twelve summary scores are generated from the frequency and severity scores for each target behavior in the four behavioral categories. These summary scores are designed to answer the following questions: (a) In what behavioral categories are disturbances present?; (b) How many different behaviors are present?; (c) How severely disruptive are the behaviors?; and (d) How frequently do the behaviors occur?

ASSESSING RELIABILITY AND VALIDITY

The utility, reliability, and validity of the COBRA Scale have been assessed in both inpatient and outpatient settings.

Both test-retest and interrater reliability have been assessed. To determine test-retest reliability, caregivers of outpatients rated their patient's behavior twice over a 1-week period. The correlation coefficients for the summary scores were high, with 11 of 12 ranging from .73 to .95 ($p < .001$). To determine interrater reliability, two nurse's aides independently rated the same group of inpatients. Despite the small number of inpatients rated, the interrater correlation coefficients were moderate to high.

Preliminary assessments of validity indicate that the COBRA Scale has good content validity. Each of the 30 target behaviors was endorsed by at least one

caregiver, and no caregiver reported a behavioral disturbance that was not targeted, indicating that the COBRA Scale covers the spectrum of behavioral disturbances seen in patients with dementia. Many of the summary scores were associated with global disease severity, suggesting that the scale has construct validity. Among outpatients with mild to moderate dementia, those with severe dementia generally showed a greater frequency and severity of obstreperous behaviors, with increases seen in both mechanical and motor abnormal behaviors and vegetative disorders. Among inpatients with moderate to profound impairment, the number of vegetative disorders increased as disease severity increased. Less severe disease was associated with a greater number of disordered ideas and personality disturbances. These results are consistent with other reports in the literature. To further evaluate construct validity, the internal consistency of the scale was assessed. In this analysis, the coefficient alpha was very high for the frequency and severity ratings for all target behaviors and for each of the four behavioral categories.

The COBRA Scale is being used in ongoing longitudinal studies of behavioral disturbances of dementia, where it has proved to be a valuable tool for measuring and documenting the course of these behaviors. Preliminary results from these studies indicate that the prevalence of behavioral disturbances in general, and disordered ideation in particular, increases over time in community-based patients. Patients who exhibit disordered ideation early in the course of the disease have a more rapid functional decline in activities of daily living than those who do not. Once disordered ideation occurs, it persists over time despite drug treatment.

CONCLUSION

The COBRA Scale is a convenient, comprehensive, and reliable means for caregivers to identify types of behavioral disturbances of dementia and measure their severity. Data generated by using the COBRA Scale can help researchers understand the nature and course of aberrant behaviors. The authors believe the scale also will prove valuable in determining the efficacy of therapeutic interventions.

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