Specific Cognitive/Behavioral Domains Predict Neuropsychiatric Symptoms in Severe Dementia

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Background
Neuropsychiatric symptoms (NPS) occur frequently over the course of Alzheimer’s disease and related disorders (ADRD).
Occurrence of NPS is highly variable and fluctuates in severity, but generally increases over time.
Risk factors for NPS in ADRD have been studied; however greater understanding of triggers is needed to inform care management strategies.
Few studies have examined NPS in severe dementia.

Present Study
We investigated the cognitive correlates of NPS in patients with severe dementia in a community-based sample.
We determined whether impairments in specific cognitive or behavioral domains were more predictive of specific NPS.
We hypothesized that poorer cognitive abilities would be associated with more severe NPS (e.g., agitation) and higher cognitive scores with affective symptoms in severe dementia.

Methods
Participants:
Eighty-nine participants from the Cache County Dementia Progression Study met the criteria for severe dementia with a Mini-Mental State Exam score of ≤10 or Clinical Dementia Rating of 3 (severe).
Forty-eight (54%) of these individuals completed the Severe Cognitive Impairment Profile (SCIP).

Procedure:
SCIP assesses Comportment, Attention, Language, Memory, Motor, Conceptualization, Arithmetic, and Visuospatial abilities.
Neuropsychiatric Inventory (NPI) assesses delusions, hallucinations, depression, anxiety, irritability, apathy, agitation/ aggression, judgment, aberrant motor behaviors, euphoria, sleep, and appetite.
NPI severity scores were summed across domains for a total NPI-12 score. Cluster scores were defined below.
Demographic information, overall health, place of residence, gender, year of diagnosis, and duration of dementia from diagnosis were also assessed.

Results
SCIP subscores of comportment (r = -0.36, p = 0.017) and memory (r = -0.31, p = 0.047) were associated with total NPI-12.
Comportment was correlated with Apathy (r = -0.38, p = 0.010) while conceptualization (r = -0.41, p = 0.007), language (r = -0.36, p = 0.017), memory (r = -0.48, p = 0.001), and visuospatial ability (r = -0.31, p = 0.046) were each correlated with agitation/aggression.
In multiple regression models (with inclusion of significant covariates), comportment predicted total NPI-12 score (β = -0.48, SE = 0.12, p = 0.001), and visuospatial ability (r = -0.31, p = 0.046) were each correlated with agitation/aggression.
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Conclusions
Several cognitive or behavioral domains were associated with Neuropsychiatric symptoms in severe dementia.
Associations may suggest vulnerability to display specific NPS, for example:
• Poorer abilities in conceptualization, language, memory, and visuospatial abilities were predictive of agitation/aggression.
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References & Acknowledgement

Table 1. Multiple Regression

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<thead>
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<th>Standard Error</th>
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Figure 1. Bivariate Correlations of NPI and SCIP Domains

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