Specific Cognitive/Behavioral Domains Predict Neuropsychiatric Symptoms in Severe Dementia

William Rozum  
Utah State University, wjrozum@gmail.com

Bryce Cooley  
Utah State University

Alexandria Richens  
Utah State University

Joshua Matyi  
Utah State University

Elizabeth Vernon  
Utah State University

JoAnn Tschanz  
Utah State University

Follow this and additional works at: https://digitalcommons.usu.edu/psych_stures

Recommended Citation
Rozum, William; Cooley, Bryce; Richens, Alexandria; Matyi, Joshua; Vernon, Elizabeth; and Tschanz, JoAnn, "Specific Cognitive/Behavioral Domains Predict Neuropsychiatric Symptoms in Severe Dementia" (2017). Psychology Student Research. Paper 3.  
https://digitalcommons.usu.edu/psych_stures/3

This Conference Poster is brought to you for free and open access by the Psychology Student Works at DigitalCommons@USU. It has been accepted for inclusion in Psychology Student Research by an authorized administrator of DigitalCommons@USU. For more information, please contact digitalcommons@usu.edu.
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 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 ≤ 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 (private, assisted living and nursing home), and dementia duration were also assessed.

Statistical Analyses
- Bivariate correlations were calculated between SCIP domain scores and Total NPI-12 and domain clusters.
- SCIP domain scores that were significantly correlated with NPI scores in bivariate analyses were entered into multiple regression models to predict NPI.
- Covariates tested included the age, the duration of dementia from, gender, place of residence, overall health and years of education.

Results
- SCIP sub scores 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 = -1.32, SE = 0.56, p = 0.02) and apathy (β = -0.01, SE = 0.02, p = 0.003)
- Memory predicted agitation/aggression (β = -0.43, SE = 0.12, p = 0.001).

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.
- Poor comportment was predictive of worse apathy.
- Environmental manipulations to reduce cognitive demands for persons with poor abilities in the above domains may reduce occurrence of some neuropsychiatric symptoms.

Table 2. Multiple Regression

<table>
<thead>
<tr>
<th>NPI Total and Comportment</th>
<th>Beta</th>
<th>Standard Error</th>
<th>Standard Beta</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apathy Cluster and Comportment</td>
<td>-0.08</td>
<td>0.02</td>
<td>-0.41</td>
<td>p=0.003</td>
</tr>
<tr>
<td>Agitation/Agression and Memory</td>
<td>-0.43</td>
<td>0.12</td>
<td>-0.48</td>
<td>p=0.001</td>
</tr>
</tbody>
</table>

References & Acknowledgement

Supported by NIA grant R01AG21136