Cognitive Symptom Trajectories among Forensic Inpatients Diagnosed with Psychotic Disorders

Jennifer Hatch, Nicolsa Villalobos, Danielle Burchett, Ph.D., & David M. Glassmire, Ph.D.
Department of Psychology, California State University, Monterey Bay; Patton State Hospital

Introduction

• Most patients in forensic inpatient settings are diagnosed with psychotic disorders; it is imperative clinicians and researchers understand their symptoms
• Psychotic disorders consist of a complex variety of symptoms categorized as positive, negative, and cognitive
• Although much research has been done in regards to cognitive symptoms, two conflicting models of the trajectory of cognitive symptoms remain:
  - Developmental
  - Degenerative

Hypotheses

This study sought to add to the literature in this area and determine which trajectory model is more accurate. Based on neuroimaging and neuropsychological testing research, we anticipated:
• Younger Adults would show cognitive impairment
• Middle Aged Adults would show stability in cognitive impairment levels
• Older Adults would show moderately more impairment than younger and middle adults

Method

Participants

• Our sample consisted of 985 forensic inpatients, at least 18 years of age, holding psychotic disorder diagnoses.
• Mean age = 40 years (SD = 11.16) Based on recent neuropsychological research, we divided patients into the following age groups: Young Adult (18-34 years), Middle Adult (35-49 years), and Older Adult (≥ 50 years)⁵,⁶

Measures

MMPI-2-RF (Ben-Porath & Tellegen, 2008/2011): A 338-item True/False statement measure that is a shortened version of the MMPI-2. Two MMPI-2-RF scales were used in this study:
• Variable Response Inconsistency (VRIN-r) Scale: An indirect measure of cognitive problems; traditionally utilized as a Validity Scale
• Cognitive Complaints (COG) Scale: A scale that assesses self-reported memory, attention, and concentration problems

Procedures

• ANOVAs and Hedges' g values were examined to compare mean scores between Young, Middle, and Older Adult age groups and our measures of cognitive dysfunction
• For VRIN-r analyses, we excluded patients without Thought Dysfunction (Psychotic Disorder) diagnoses (included n = 985)
• For COG analyses we excluded patients with invalid protocols due to random responding, fixed responding, or overreporting (CNS ≥ 18; VRIN-r ≥ 80; TRIN-r ≥ 80; F-r ≥ 120; Fp-r ≥ 100; RBS ≥ 80) (included n = 632)

Table 1. Variable Response Inconsistency (VRIN-r) and Cognitive Complaints (COG) Scores for Younger, Middle, and Older Patients with Psychotic Disorder Diagnoses

<table>
<thead>
<tr>
<th></th>
<th>Younger</th>
<th>Middle</th>
<th>Older</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>M</td>
<td>SD</td>
<td>n</td>
</tr>
<tr>
<td>VRIN-r</td>
<td>351</td>
<td>59.72</td>
<td>16.21</td>
</tr>
<tr>
<td>COG</td>
<td>208</td>
<td>51.14</td>
<td>11.60</td>
</tr>
</tbody>
</table>

Note. g² = younger versus middle age; g³ = middle versus older age; g¹ = younger versus older age. For Cognitive Complaints (COG) analyses, invalid protocols (CNS ≥ 18; VRIN-r ≥ 80; TRIN-r ≥ 80; F-r ≥ 120; Fp-r ≥ 100; RBS ≥ 80) were excluded. *p < .05. Bolded Hedges' g values are practically significant with a small effect.

Results & Discussion

For VRIN-r, the significant findings we observed occurred in the opposite direction of our hypotheses:
• Older adults may have significantly less cognitive problems than Young adults
• Older adults may have significantly less cognitive problems than Middle adults
• There were no significant differences between Young and Middle adults.

However, for COG analyses, we found no significant differences between age groups.

Conclusions & Implications

• Because VRIN-r is associated with cognitive problems, Young and Middle adults may be experiencing more cognitive problems than Older adults and clinicians should consider neuropsychological testing for these age groups⁷
• Because there were no significant differences on the COG scale, VRIN-r differences could be due to other factors such as differences in reading abilities or cooperativeness.
• However, one of the common issues for patients with psychotic disorders is a lack of insight into their symptoms, which may limit the effectiveness of the self-report COG scale results.

This study had many strengths:
• Studying patients with a range of psychotic disorders
• Large overall sample & subsample sizes
• Uncontaminated dataset from a forensic inpatient sample

This study also had some notable limitations:
• Unequal group sizes with a smaller older adult group
• Inability to control for confounds such as medication, education, and onset of symptoms due to variable unavailability
• Relies on an indirect measure of cognitive impairment as well as a self-reported measure of cognitive impairment

Future researchers should:
• Consider a longitudinal research design among patients living with psychotic disorders
• Utilize direct measures of cognitive impairment as well as clinician ratings
• Study cognitive symptoms in patients with different severe mental illnesses and in comparison to a non-clinical normative sample
• Control for factors such as medication, education, and onset of psychotic symptoms, and patient insight into symptomatology

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