ADHD Symptoms Reported in Adults with Narcolepsy and Idiopathic Hypersomnia

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Background & Objective

- Increasing evidence suggests that youth with Attention Deficit Hyperactivity Disorder (ADHD) experience mild (28.4%) to moderate/severe (44.8%) sleeping problems.¹
- Daytime sleepiness is one of the most commonly cited sleep difficulties among patients with ADHD², and a hypoarousal sleep phenotype has been identified among a subset of ADHD pediatric cases.³
- Self-reported daytime sleepiness in adolescents with ADHD, more than ADHD symptomology, better predicted academic performance including parent-rated homework problems, teacher-rated competence, and academic impairment.²
- Presence of childhood ADHD symptomology by retrospective survey was reported by 42 percent of adult narcolepsy patients, with 8-15 percent reporting a probable childhood ADHD diagnosis without depression.¹
- Shorter MSLT sleep latencies were associated with greater childhood ADHD symptomology.³
- Objective ➔ To examine the presence of attentional difficulties in hypersomnolence by assessing current ADHD symptoms in adult patients diagnosed with a central hypersomnia disorder.

Methods

- Participants ➔ 833 adult patients with Narcolepsy Type 1 (NT1), Narcolepsy Type 2 (NT2), or Idiopathic Hypersomnia (mean age±SD=39.9±13.8 yrs, 46.9% female) participated in the Boston University Narcolepsy and Idiopathic Hypersomnia Patient Perspectives Study (BUNIHPPS), a cross-sectional online survey between October 10, 2015 and January 26, 2016.
- Survey Measures ➔ Questionnaires included the Adult ADHD Self-Report Scale (ASRS) screener v1.1,⁴ the Eysenck Impulsivity Scale⁵, and the Epworth Sleepiness Scale (ESS). Summary scores were tallied for each scale.
- Analyses ➔ Data were analyzed with SAS.

Results

Sleepiness is associated with Attention

- Self-reported daytime sleepiness scores were significantly associated with attention problems (F=34.33; p<0.0001) in linear regression model after adjusting for covariates including age, gender, comorbid depression, total sleep time, self-reported disease severity, and impulsivity.
- For every 1-point increase in ESS score, reported attention problems on the ASRS increased by 0.17 points.
- ESS scores predicted 26.1% of the variance in self-reported attention problems (r²=0.2606).

<table>
<thead>
<tr>
<th>Variable</th>
<th>β (95% CI)</th>
<th>p-value</th>
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<tbody>
<tr>
<td>Daytime Sleepiness (ESS Score)</td>
<td>0.17 (0.10, 0.24)</td>
<td>&lt;0.0001</td>
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<tr>
<td>Impulsivity (Eysenck Score)</td>
<td>0.28 (0.20, 0.35)</td>
<td>&lt;0.0001</td>
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<tr>
<td>Disease Severity</td>
<td>0.06 (0.04, 0.07)</td>
<td>&lt;0.0001</td>
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<tr>
<td>Total Sleep Time</td>
<td>-0.38 (-0.56, -0.20)</td>
<td>0.0033</td>
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<tr>
<td>Gender (Female vs. Male)</td>
<td>0.24 (-0.56, 1.07)</td>
<td>0.5704</td>
</tr>
<tr>
<td>Age</td>
<td>-0.03 (-0.05, -0.01)</td>
<td>0.0111</td>
</tr>
<tr>
<td>Comorbid Depression (No vs. Yes)</td>
<td>-1.11 (-1.72, -0.50)</td>
<td>0.0004</td>
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Table 1 – Final Model Covariates in Self-reported Sleepiness Association to Attention Problems

Conclusions

- Problems with attention were reported by 60.5% of adult hypersomnia patients participating in BUNIHPPS.
- Both genders reported attention problems and ADHD diagnoses equally.
- There was a significant positive association between self-reported daytime sleepiness and attention problems in an adjusted linear regression model.
- Greater impulsivity and disease severity were positively associated with attention problems, whereas age, total sleep time, and not having comorbid depression were negatively associated with attention difficulties.
- Future planned analyses include a factor analysis of the ASRS questions to better understand how the inattentive and hyperactive subtypes of attention may be related to daytime sleepiness among hypersomnia patients.

References