The Role of Comorbid ADHD in Clinical Characteristics, Causal Attributions, and Treatment Utilization among Adults with Insomnia

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INTRODUCTION

Independently, attention-deficit/hyperactivity disorder (ADHD)² and insomnia⁹ are associated with substantial functional impairment and treatment utilization, and frequently co-occur.^{1.8} Prevalence of comorbid insomnia ranges from 43% to 80% among adults with ADHD.¹⁰

ADHD and insomnia symptom severity demonstrate a bidirectional relationship. Comorbid insomnia is associated with higher ADHD severity and poorer quality of life in adults with ADHD. Conversely, increased severity of insomnia symptoms is associated with worsened symptoms of ADHD. However, little is known about the influence of ADHD on adult insomnia.³

Therefore, this investigation examined the contribution of co-occurring ADHD to insomnia severity, impairment, and associated clinical features, causal attributions, and treatment utilization in adults with insomnia.

METHOD

Participants. Eighty-five participants aged 18 to 48 years (M = 26.19, SD = 6.75 years) were drawn from an internet survey examining contributing factors and impact of insomnia.

Procedure. Participants provided demographics, and lifetime psychiatric and sleep disorder history, and rated insomnia severity (Insomnia Severity Index),⁶ sleep-related impairment (PROMIS Sleep-Related Impairment - Short Form 4a),¹¹ sleep hygiene (Sleep Hygiene Index),⁵ and arousal (Pre-Sleep Arousal Scale - 14),⁷ contributing factors to insomnia (Causal Attributions of My Insomnia Questionnaire)⁴ and insomnia treatment history. Participants met criteria for both current insomnia symptoms and lifetime clinically significant insomnia symptoms present at least 3 days per week for 3 months or more.

Data Analysis. Chi-squared tests of independence were performed to compare contributing factors and impacts of insomnia in participants with or without a lifetime diagnosis of ADHD. Independent samples *t*-tests were performed to compare sleep-related impairment, insomnia severity, sleep hygiene, and pre-sleep arousal in participants who have current insomnia with or without a lifetime diagnosis of ADHD.

RESULTS

50.6% (*n* = 43) and 49.4% (*n* = 42) of participants met criteria for current insomnia with and without lifetime diagnosis of ADHD (or ADD), respectively. Insomnia with ADHD was associated with higher endorsement of one or more lifetime sleep disorders, X^2 (1, *n* = 85) = 6.68, *p* = .010), and higher sleep-related impairment *t*(83) = 3.24, *p* = .002) relative to insomnia alone.

Insomnia with ADHD was associated with higher endorsement of beliefs in biochemical factors, X^2 (1, n = 85) = 4.96, p = .026, and developmental factors such as adverse childhood experiences and trauma, X^2 (1, n = 85) = 5.64, p = .018, as contributors to initial onset of insomnia relative to insomnia alone.

There were no significant group differences for insomnia severity (p = .960), sleep hygiene (p = .822), and pre-sleep arousal (p = .398) (see Table 2).

Table 1. Chi-Squared Tests comparing Contributing Factors and the Impact of Insomnia in Adults With and Without Lifetime ADHD diagnosis

	No ADHD Diagnosis n = 43		ADHD Diagnosis n = 42	
	n	%	n	%
One or more lifetime sleep disorders	2	4.8%	12	27.9%*
Belief in biochemical factors	3	7.1%	12	27.9%*
Belief in developmental factors	6	14.3%	17	39.5%*
Lifetime use of prescription medication for insomnia	5	11.9%	21	48.8%**
Cognitive behavioral therapy for insomnia	2	4.8%	12	23.3%*
Supportive/talk therapy for insomnia	5	11.9%	18	41.9%*
Sleep aid use within the last month	18	42.9%	29	67.4%*

Note: Valid percentages are reported; * = p < .05 for or ADHD diagnosis versus ADHD diagnosis comparison; ** = p < .001 for ADHD diagnosis versus ADHD diagnosis.

Table 2. Independent Samples t-tests comparing Sleep-related Disturbance in Adults With Insomnia, With and Without Lifetime ADHD Diagnosis

	No ADHD Diagnosis n = 43		ADHD Diagnosis n = 42		T(df)	P	Cohen's d
	М	SD	М	SD			
insomnia severity	14.90	4.72	14.95	4.29	.05(83)	.960	4.506
Sleep hygiene	24.07	5.90	24.40	7.27	.23(83)	.822	6.632
Pre-sleep arousal (total)	39.98	8.60	41.00	8.95	.85(83)	.398	8.781
Sleep-related impairment	60.14	9.00	65.75	6.90	3.24(83)	.002*	7.996

Note: * = p < .05 for or ADHD diagnosis versus ADHD diagnosis comparison; ** = p < .001 for ADHD diagnosis versus ADHD diagnosis.

Insomnia with ADHD was associated with higher endorsement of lifetime use of prescription medication for insomnia, X^2 (1, n = 85) = 11.97, p < .001, cognitive behavioral therapy for insomnia, X^2 (1, n = 85) = 4.57, p = .033, and supportive/talk therapy for insomnia, X^2 (1, n = 85) = 4.20, p = .004, and higher frequency of sleep aid use within the prior month, X^2 (1, n = 85) = 4.25, p = .039, relative to insomnia alone.

DISCUSSION

Summary

- 1. Findings suggest the role of lifetime ADHD diagnosis in sleep-related disturbance in adults with insomnia.
- Results also suggest the perceived contribution of childhood adversity and biochemical factors (e.g., neurotransmitters, medication) to insomnia onset among adults with insomnia with ADHD. Limitations

Imitations

- 1. Some measures were dimensional while others were dichotomous which may affect comparability of results.
- A small sample size may affect the ability to generalize the findings of this study in adults who have ADHD and Insomnia
- Participants were recruited through a crowdsourcing website, which introduces selection bias. They may also be influenced by monetary gain from survey completion.

Future Directions

- Findings suggest the importance of integrating assessment and management of psychiatric disorders, including ADHD in treatment for insomnia
- Future research should explore the effectiveness of treatment modalities used by participants to address insomnia symptoms, with and without a lifetime diagnosis of ADHD
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