

Sex differences drive substance use patterns in panic disorder patients

A large-scale study has uncovered that males with panic disorder have substantially higher alcohol risk scores compared to females with the same conditions.

PISCATAWAY, NJ, UNITED STATES, April 22, 2025 /EINPresswire.com/ -- In a comprehensive [Genomic Press](#) peer-reviewed research article, researchers have revealed compelling evidence that biological sex significantly influences substance use patterns among individuals with panic disorder, with implications for both clinical assessment and treatment strategies.

The noteworthy study, published today in the journal [Genomic Psychiatry](#), examined associations between panic disorder and both alcohol and tobacco use disorders in a demographically diverse sample of nearly 11,000 individuals. The research team, led by Dr. Michele Pato from Rutgers University, found that while panic disorder generally increased risk for problematic substance use, men with panic disorder showed dramatically higher alcohol risk scores than women with the same condition.



Professor Michele Pato, Rutgers University

Key Findings

"Our findings demonstrate that sex plays a crucial moderating role in how panic disorder relates to alcohol use problems," said Professor Pato. "While females are generally more likely to experience panic disorder, males with the condition appear particularly more vulnerable to developing problematic drinking behaviors, potentially as a form of self-medication."

The study utilized data from the Genomic Psychiatry Cohort, a large-scale collection of individuals screened against severe mental illness. The sample's demographic diversity—56%

female, with balanced representation of European (55%) and African (45%) ancestry—provided researchers with a unique opportunity to examine how these demographic factors might influence comorbidity patterns.

Contrary to some previous research, the study found no significant ancestry-based differences in substance use patterns among those with panic disorder. This suggests that the relationship between panic and substance use disorders remains consistent across these ancestral groups, despite known differences in overall prevalence rates.

Questions for Future Research

What specific neurobiological mechanisms might make males with panic disorder more

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Professor Michele Pato

Clinical Significance

How might these findings reshape clinical approaches to treating panic disorder? Should clinicians implement more targeted screening for substance use problems, particularly among male patients with panic symptoms? The research suggests that sex-specific assessment and intervention strategies may be warranted.

"Understanding these sex-based vulnerability patterns has direct implications for how we screen

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RESEARCH ARTICLE

Sex differences in alcohol and tobacco use disorders among individuals with panic disorder: A cross-sectional analysis from the genomic psychiatry cohort

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Anxiety disorders and substance use frequently co-occur, yet the moderating effects of sex and ancestry on these relationships remain understudied. This investigation examined associations between presumed panic disorder (pPD) and both presumed alcohol use disorder (pAUD) and tobacco use disorder (pTUD) in 10,953 individuals from the Genomic Psychiatry Cohort screened against severe mental illness. Our sample was demographically diverse (56% female; 55% European Ancestry, 45% African Ancestry), allowing robust comparison across these groups. Individuals with pPD ($n = 342$) demonstrated significantly higher mean severity scores for both pAUD (1.26 vs. 0.33, $p < 0.05$) and pTUD (1.65 vs. 0.93, $p < 0.05$) compared with those without pPD. While female sex was associated with decreased risk for pAUD ($B = -0.351$, $p < 0.05$) compared with males, we observed no significant ancestry-based differences in substance use patterns among those with pPD. Two-way interaction analyses revealed that sex significantly moderated the relationship between pPD and pAUD ($B = -0.97$, $p < 0.001$), with the association being stronger among males than females. Additionally, comorbid presumed posttraumatic stress disorder was significantly associated with increased risk for both pAUD ($B = 0.650$, $p < 0.05$) and pTUD ($B = 0.825$, $p < 0.05$) but did not interact significantly with pPD. These findings advance our understanding of how biological sex influences the manifestation of comorbid panic and substance use disorders, offering clinical implications for assessment and treatment strategies that acknowledge sex-specific vulnerability patterns while highlighting the consistent relationship between these conditions across ancestral groups.

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Keywords: Alcohol use disorder (AUD), panic disorder (PD), post-traumatic stress disorder (PTSD), tobacco use disorder (TUD)

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for and treat comorbid conditions," noted Dr. Michael Chung, lead author and researcher at New York University Langone Medical Center. "Our work highlights the importance of considering biological sex when developing treatment plans for patients with panic disorder."

Innovative Methodology

The researchers employed a unique methodology, using screening items to identify "presumed" conditions rather than formal diagnostic assessments. This approach allowed them to examine relationships across a larger and more diverse sample than many previous studies.

Socio-cultural Considerations

What role might societal expectations around masculinity play in driving these sex differences? Are men with panic disorder less likely to seek professional help and more likely to self-medicate with substances? These sociocultural factors require further investigation to fully understand the observed patterns.

Conclusion

This research adds to a growing body of evidence suggesting that anxiety and substance use disorders share complex, bidirectional relationships that vary across demographic groups. The findings underscore the need for integrated treatment approaches that address both anxiety symptoms and substance use behaviors simultaneously.

The peer-reviewed study, "Sex differences in alcohol and tobacco use disorders among individuals with panic disorder: A cross-sectional analysis from the genomic psychiatry cohort," is available online in the journal *Genomic Psychiatry* at this url:
<https://doi.org/10.61373/gp025a.0020>.

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