



Psychiatric Comorbidities in Narcolepsy

James Pate MS3, Nandan Patel MS3, Janaki Nimmagadda M.D.

UABSOM Huntsville Campus, Department of Psychiatry
University of Alabama at Birmingham School of Medicine

Case Presentation

A thirteen-year-old morbidly obese African American female came in for a consultation for ADHD, depression, and anxiety. On assessment, she was initially diagnosed with anxiety/depression and treated with Fluoxetine. However, her symptoms did not resolve and were persistent after three months of treatment. After more evaluation, the patient revealed cataplexic symptoms and excessive daytime sleepiness which subsequently led to the diagnosis of narcolepsy. Following initiation of Modafinil, the patient's anxiety and depressive symptoms showed significant positive improvements.

Link between Depression and Narcolepsy

Two primary theories have been proposed to explain increased association between narcolepsy and depression:

Theory 1

- Cognitive and social difficulties faced by patients with narcolepsy ultimately lead to depression.
- For example, hypersomnolence affects cognitive, social, and familial functioning.
- These struggles significantly disturb quality of life and may subsequently cause depression.

Theory 2

- Deficiency in orexin, commonly seen in patients with narcolepsy, also causes depression.
- Orexin-A neurons have been shown in preclinical studies to be involved in regulation of several physiologic processes such as arousal, motivation, stress response, and cognitive processes, all of which are disturbed in depression.

Discussion

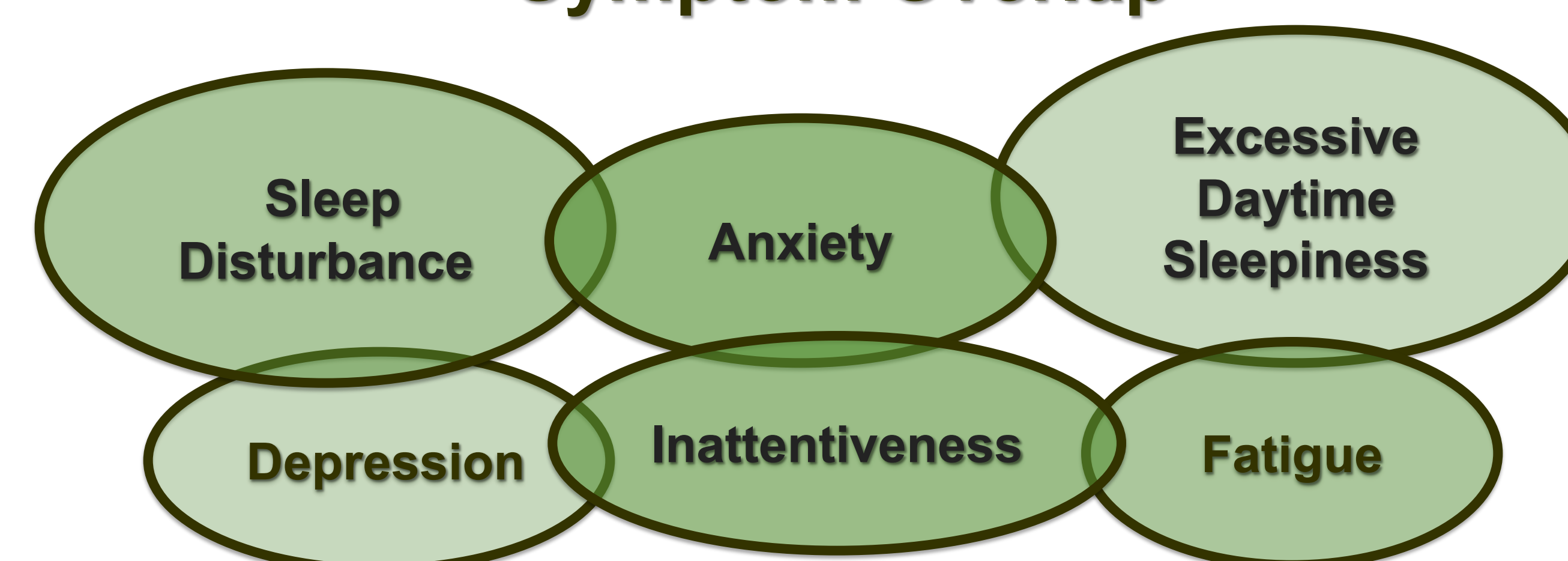
As seen in reported data, comorbid psychiatric disorders are more common in narcolepsy compared to the general population. Significant overlap in symptomatology may exist between narcolepsy and psychiatric disorders (Fig-1). Consequently, it may be difficult to differentiate between narcolepsy and depression in clinical settings. The relationship between psychiatric disorders and narcolepsy is multifactorial, with narcolepsy mimicking a psychiatric disorder as well as potentially causing one. Proper diagnosis of narcolepsy and appropriate management of comorbid psychiatric diagnosis has immense potential to improve patient satisfaction, quality of life, and performance. As a result, practitioners should always entertain diagnosis of narcolepsy in patients who are presenting with depression and hypersomnolence.

Medication management, psychological testing, individual and family counseling are important components of a treatment plan for these patients. Children may also need special accommodations at school to help optimize learning environments in order to reach full potential.

References

1. Alasim, H., AlQazlan, S., Albanyan, S., Alsalhi, A., Buraik, A., Olaish, A. H., Almeneessier, A. S., Alosaimi, F. D., AlHadi, A., & BaHamam, A. S. (2020). Comorbid psychiatric disorders among patients with narcolepsy. *Sleep and Breathing*, 24(2), 629–636. <https://doi.org/10.1007/s11325-019-01890-8>
2. Almeneessier AS, Al-Jebrin S, Labani R, Alkaff H, Al-Rahbeeni O, Alageel M, Olaish A, BaHamam AS (2019) Medical specialty visits and diagnoses received by Saudi patients prior to a diagnosis of narcolepsy. *Sleep Breath*. <https://doi.org/10.1007/s11325-019-01807-5>
3. Roth B, Nevsimalova S (1975) Depression in narcolepsy and hypersomnia. *Schweiz Arch Neurol Neurochir Psychiatry* 116(2): 291–300
4. Avis, K. T., Shen, J., Weaver, P., & Schwebel, D. C. (2015). Psychosocial Characteristics of Children with Central Disorders of Hypersomnolence Versus Matched Healthy Children. *Journal of Clinical Sleep Medicine : JCSM : Official Publication of the American Academy of Sleep Medicine*, 11(11), 1281–1288. <https://doi.org/10.5664/jcsm.5186>
5. Flores, N. M., Villa, K. F., Black, J., Chervin, R. D., & Witt, E. A. (2016). The Humanistic and Economic Burden of Narcolepsy. *Journal of Clinical Sleep Medicine : JCSM : Official Publication of the American Academy of Sleep Medicine*, 12(3), 401–407. <https://doi.org/10.5664/jcsm.5594>
6. Hombali, A., Seow, E., Yuan, Q., Chang, S. H. S., Satghare, P., Kumar, S., Verma, S. K., Mok, Y. M., Chong, S. A., & Subramaniam, M. (2019). Prevalence and correlates of sleep disorder symptoms in psychiatric disorders. *Psychiatry Research*, 279, 116–122. <https://doi.org/10.1016/j.psychres.2018.07.009>

Symptom Overlap



Psychiatric and Clinical Correlations

- 45% of narcolepsy patients had at least one psychiatric diagnosis compared to 16% of controls [1].
- 30% of narcolepsy patient were diagnosed with neuropsychiatric disorders before being diagnosed with narcolepsy [2]
- Major Depression is the most prevalent disorder, being reported in up to 30% of narcoleptic patients [3]
- The prevalence of suicidality was 9.5% in narcolepsy patients which is high compared to 0.4% of controls [1]

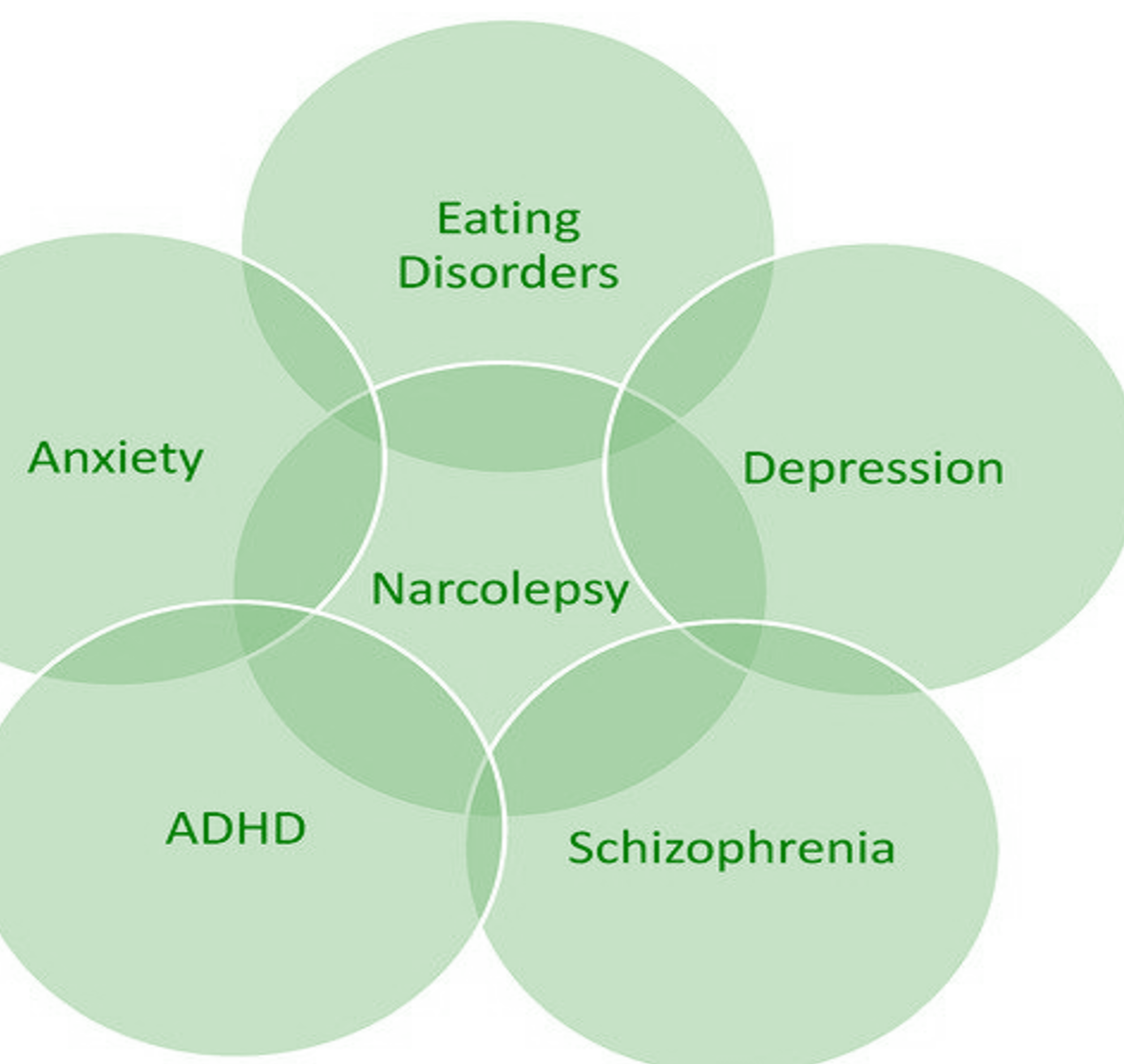


Figure 1: Venn Diagram of the overlapping relationship between highlighting the intimate relationship between psychiatric disorders and narcolepsy. ADHD: attention deficit hyperactivity disorder