Sleep Disruption in Patients Receiving Medications for Opioid Use Disorder: Does Gender Play a Role? A Review of Literature

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Disclosures

I have no conflicts to declare

Acknowledgements

5.7 million people

had opioid use disorder (OUD) in 2023

Medications to treat Opioid Use Disorder (MOUD)

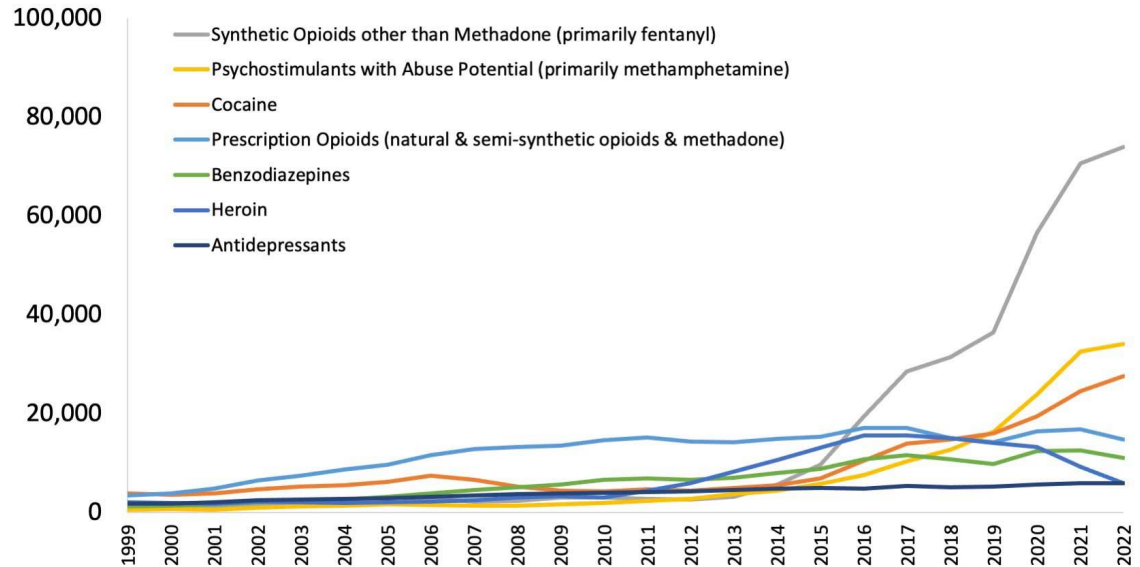2.3 million people received MOUD in 2023
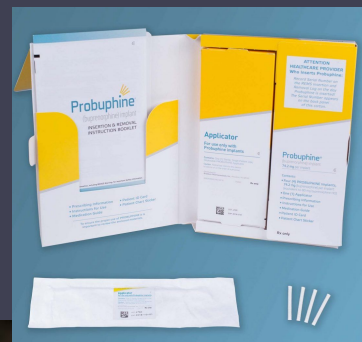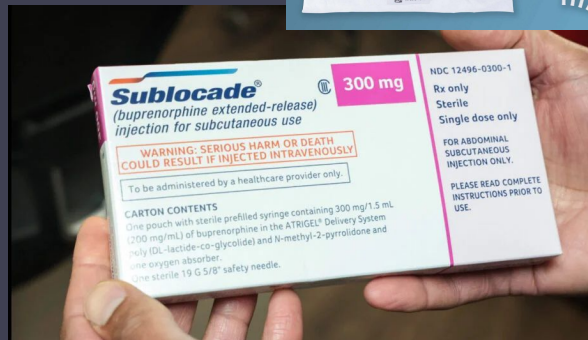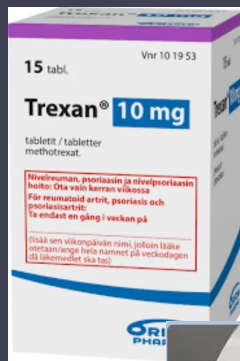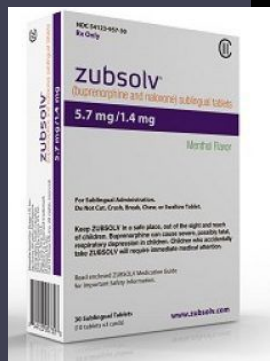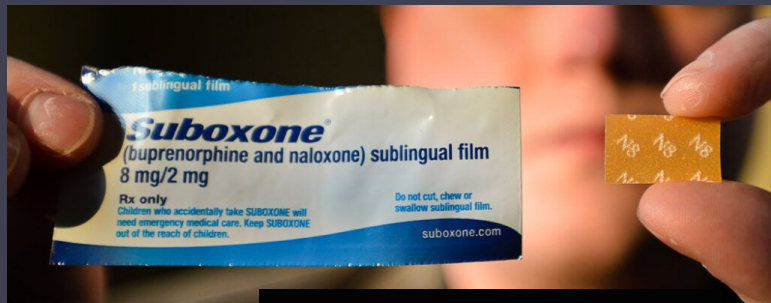
Return to use

Treatment programs currently have return to use rates of ~50%.

Patients with OUD face high risk of overdose after periods of abstinence and upon discontinuation of treatment and returning to use.

Figure 2. U.S. Overdose Deaths*, Select Drugs or Drug Categories, 1999-2022

Legend:
- Synthetic Opioids other than Methadone (primarily fentanyl)
- Psychostimulants with Abuse Potential (primarily methamphetamine)
- Cocaine
- Prescription Opioids (natural & semi-synthetic opioids & methadone)
- Benzodiazepines
- Heroin
- Antidepressants

*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poisoning (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in the International Classification of Diseases, 10th Revision. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2022 on CDC WONDER Online Database, released 4/2024.
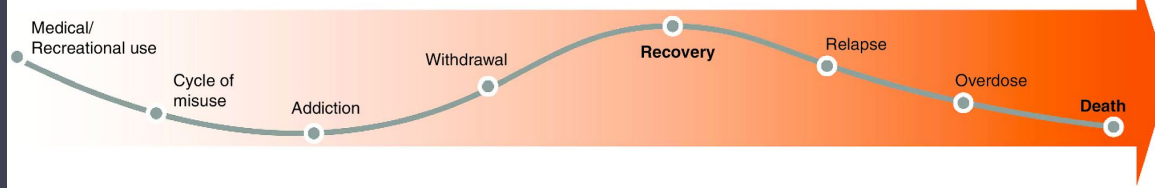
Causes of return to use

Kadam et al (2017)

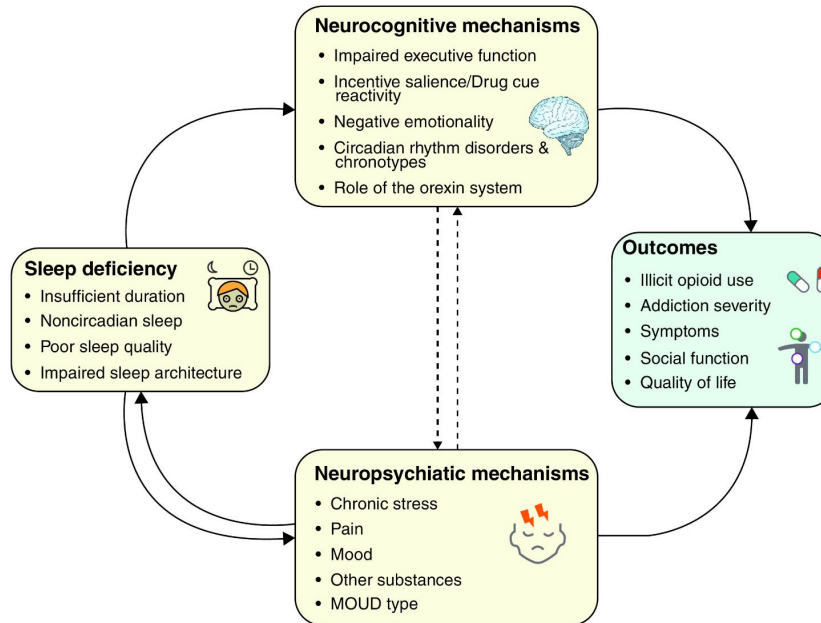|	Group B (n=30), n (%)
Negative mood state	1 (3.33)
Desire for positive mood state	23 (76.66)
Social/family problems	4 (13.33)
External pressure to use	5 (16.66)
Environmental cues/others	3 (10)
Sleep problems	7 (23.33)
Craving/urge	9 (30)
Concentration difficulties	3 (10)

Eckert and Yaggi (2022)

Biopsychosocial model
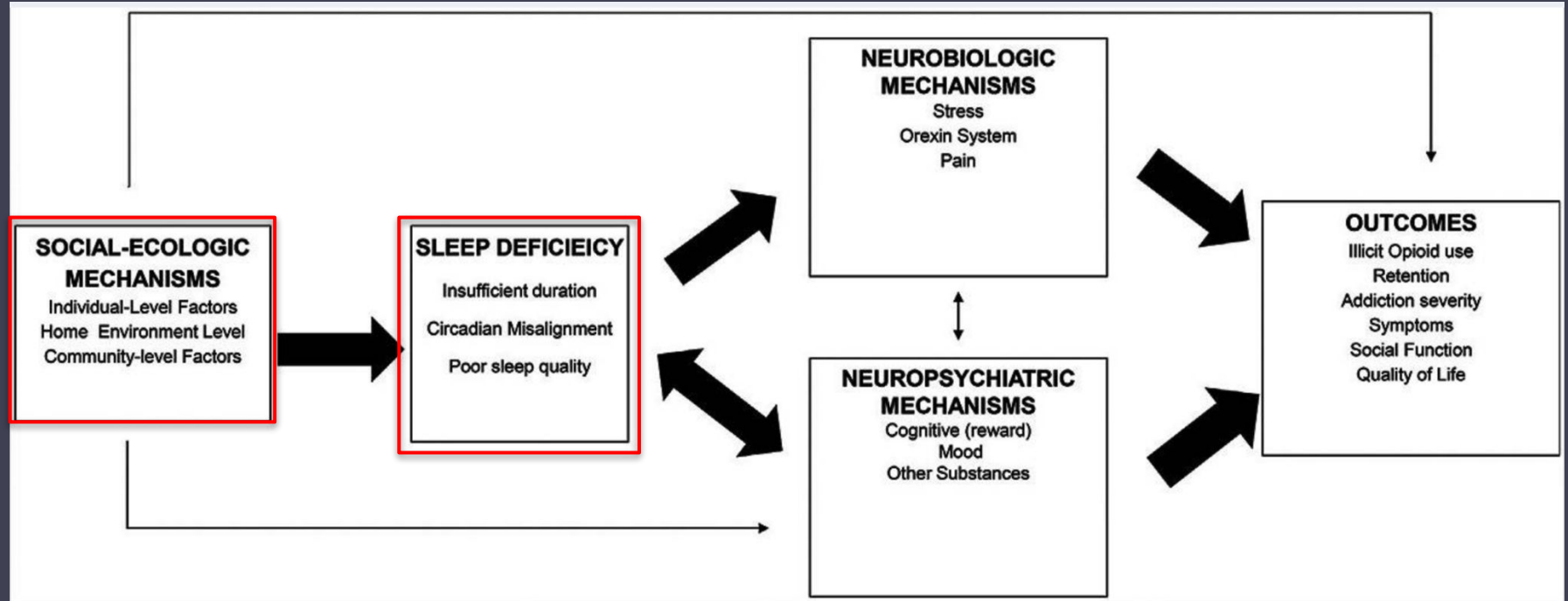
Langstengel and Yaggi (2022)

Literature Review

737 Records Identified

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n=134 duplicates removed

603 Records Screened

23 additional records

n=548 Reports excluded

→

76 Records included
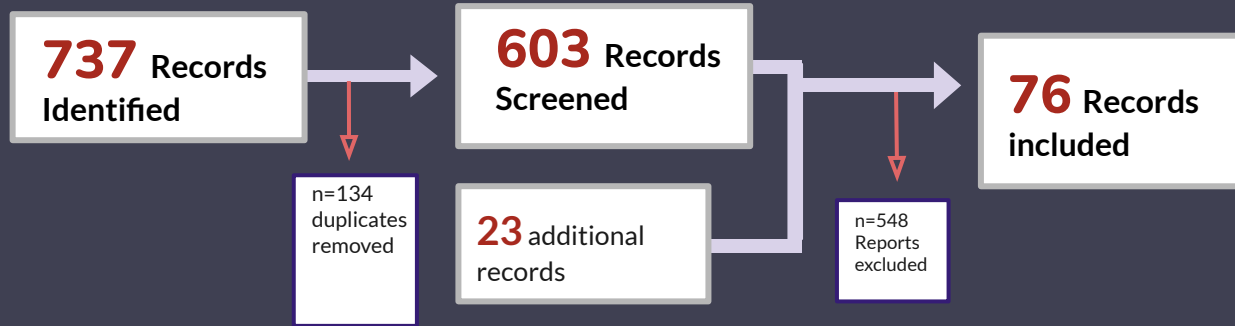
Screening Criteria

- **Studies from 2010-present**
- Original research studies reporting sleep deficiency outcomes
- Population: people age 18+ on MOUD

Other factors

- Age
- Race or ethnicity
- Gender
- Marital status
- Education status
- Employment status
- Psychological comorbidities e.g. depression, anxiety, PTSD

Findings related to gender

1. Sleep disturbance levels in females compared to males

2. Sleep-aid treatment differences between female and male patients

Sleep disturbance in female MOUD patients

Female gender was significantly associated with:

- Worse perceived sleep quality on PSQI (Pittsburgh Sleep Quality Index)
  - Peles et al. 2014, Garnaat et al. 2017, Ellis et al. 2022
- Greater respiratory depression due to opioid use than men → Obstructive Sleep Apnea
  - Sharkey et al. 2011

Other Factors

- Sexual Abuse
  - Peles, 2017
- Psychiatric comorbidity
  - McCabe et al. 2014

- Chronic Pelvic Pain
  - Reichmann et al. 2022

Treatment implications

Female patients were more likely to:

- seek prescription sleep aids
- receive benzodiazepine and Z-drug prescriptions for insomnia than men.
  - Benzodiazepines: alprazolam (Xanax®), diazepam (Valium®), clonazepam (Klonopin®), and lorazepam (Ativan®)
  - Z-drugs: zolpidem, zopiclone, zaleplon

There are warnings about using these two drug classes in patients administered the two potentially sedating MOUD (methadone and buprenorphine) due to increased risk of respiratory depression and mortality.

Underrepresentation

Notably, men were overrepresented in these studies with 25 studies consisting of at least 80% male participants, 12 of which had no female participants, despite evidence that the number of women seeking treatment for OUD is equal to or greater than that of men. (Wilkerson & McRae-Clark 2021)

Conclusion

There is a scarcity of literature investigating how gender intersects and impacts OUD treatment and sleep management.

Providers should be careful with prescription sleep aids

Personalized care