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# Socioeconomic Intersectionality and Psychologic Comorbidity Influences on Sleep Disruption in Patients Receiving Medications for Opioid Use Disorder (OUD)

Amanda Lee Molina<sup>1,2</sup>, Masoumah Haidari<sup>1,2</sup>, Trang Truong<sup>3</sup>, Reed Junkin<sup>3</sup>, Christina Vasquez<sup>2,3</sup>, Mary Carskadon, Josiah Rich, John McGeary, Ju Nyeong Park, PhD, MHS<sup>1,2</sup>

<sup>1</sup>Brown University, Providence, RI; <sup>2</sup>Harm Reduction Innovation Lab at Rhode Island Hospital, Providence, RI; <sup>3</sup>The Warren Alpert Medical School, Providence, RI



## Background

- An estimated 6 million people suffer from **Opioid Use Disorder (OUD)** in the United States [Fig. 1]
- The current standard of care uses opioid agonists, drugs collectively known as **Medications to treat Opioid Use Disorder (MOUD)**, to stabilize patients with OUD.
- Treatment programs currently have relapse rates of ~50%. Despite new developments in MOUD, opioid-involved overdose deaths rose from 49,860 in 2019 to 81,806 in 2022 (NIH). Patients with OUD face the highest risk of overdose upon discontinuation of treatment and returning to use.
- Intersectional factors, such as sociodemographic factors and psychiatric issue further complicate treatment adherence and outcomes.

## Objectives

To conduct a literature review that explores an often overlooked aspect to the Sleep-MOUD relationship and evidence based interventions: **the intersectionality that comprises patient age, gender, race and ethnicity, psychiatric comorbidities, and other socioeconomic factors that affects both access to care and patient physiology.**

## Methods

Three systematized searches were performed with regards to three focus areas within the context of sleep and MOUD: social determinants of health (SDOH), cognitive behavioral therapy (CBT), and pharmacological treatments for OUD. [Fig. 2] Data were extracted from selected original research studies and validated by the authors of the research team using the articles' full texts, with disagreements resolved via consensus.

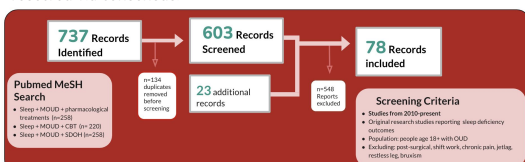
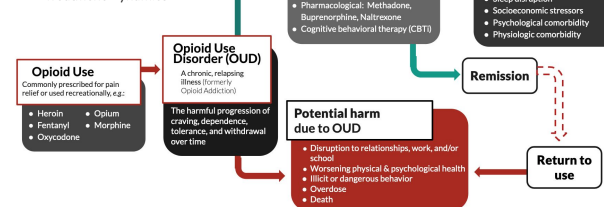


Fig. 2: Literature flow diagram

Fig. 1: Overview of Opioid Use, Opioid Use Disorder (OUD), and Treatment Dynamics



## Results

### Demographic and socioeconomic results:

- Sleep duration** was significantly **correlated with age**, with older methadone maintenance treatment patients having shorter total sleep times<sup>1</sup>
- Younger age and older age at initial MMT were significantly related to higher doses of daily methadone<sup>2</sup>
- The number of women seeking treatment for OUD was equal to or greater than the number of men in the United States, but there is an **underrepresentation of women in research on sleep-OUD**<sup>3</sup>
- Female sex** is associated with **sleep disturbance**, with women reporting **worse perceived sleep quality**<sup>4,6</sup>
- We found **discrepancies in findings on gender and age**, which were exacerbated by the **lack of evidence in the literature** on both topics
- Other than age and gender, we found limited data on the influence of **race and ethnicity, marital status, education, employment status, and BMI on sleep and MOUD** [Fig. 3]

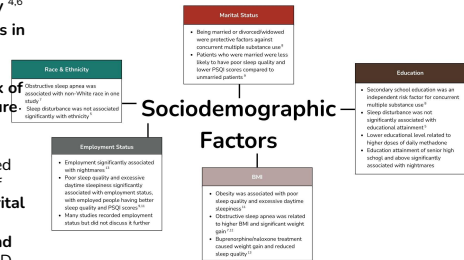
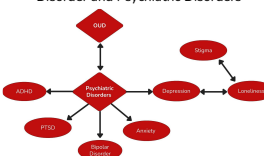


Fig. 3: Other sociodemographic factors affecting sleep and MOUD

### Psychiatric Results:

- Many studies reported that individuals on MOUD suffer from psychiatric disorders, such as anxiety, depression, bipolar disorder, PTSD, and ADHD<sup>14,15,16</sup>
- Many individuals with OUD reported that these psychiatric illnesses further contributed to disrupted sleep. [Fig. 4]
- Women were more likely to have poor mental and physical health than men.
- Women with co-occurring OUD were more likely to have psychological distress<sup>17</sup>
- Older adults have higher prevalence of comorbid conditions which includes chronic pain, insomnia, sensory impairment, and mental health issues<sup>18</sup>

Fig. 4: Relationships between Opioid Use Disorder and Psychiatric Disorders



### Relevant Treatment Results:

- Despite established contraindication for benzodiazepine use in patients with OUD, multiple studies reported patients on MOUD receiving benzodiazepine prescriptions;<sup>19,21</sup> women at a higher rate than men.<sup>19</sup>
- Non-benzodiazepine pharmaceuticals currently being explored include melatonin orexin receptor antagonists, trazodone, cannabinoids, and gabapentins.
- Adjuvant treatment options<sup>22,25</sup> to supplement MOUD:
  - Open-label placebos<sup>21</sup> were found to improve treatment retention
  - acupuncture improved efficacy in reducing methadone dosage.<sup>25</sup>

## Future directions

Future research should focus on more inclusive approaches to improve the effectiveness of treatment programs and the patient's overall well-being.

We found significant gaps in the literature related to gender, race, and other socioeconomic factors with respect to sleep and MOUD—future studies should prioritize diverse and large sample sizes to explore the relationship between sleep and MOUD.

More work is needed on creating sleep interventions for MOUD patients and their studying impact on psychiatric and medical comorbidities.

## References



Scan here to access references

## Acknowledgements

Thank you to the members of the Harm Reduction Innovation Lab at Rhode Island Hospital. This project is supported by [names!!!!]





# Media Discourse on Supervised Consumption Sites in the United States

Alison Lu<sup>1,2</sup>, Claire Kim<sup>1,2</sup>, Orly Richter<sup>1,2</sup>, Naile Ozpolat<sup>1,2</sup>, Jessie Tardif<sup>1,2</sup>, Joseph Rosen<sup>2</sup>, Erin Thompson<sup>2</sup>, Ju Nyeong Park, PhD, MHS<sup>1,2</sup>

<sup>1</sup>Brown University, Providence, RI; <sup>2</sup>Harm Reduction Innovation Lab at Rhode Island Hospital, Providence, RI



## Objective

The objective of our study is to examine national media discourse on Harm Reduction Center (HRC) implementation through analyses on news articles, opinion pieces, and political & legal documents. In doing so, we will identify legal barriers and facilitators, as well as strategies for authorizing HRCs that may be relevant to the Rhode Island context, including issues around operations, laws, funding and community support.

## Background

- HRCs (or supervised consumption sites) are spaces where people can safely use drugs under medical supervision and are designed to...
  - Reduce overdoses, public drug use, and infection transmission associated with injected drug use
  - Connect patrons to social and medical services
- HRC implementation is a controversial topic in Rhode Island and throughout the country
- Legislators in Rhode Island moved to authorize a two-year pilot program for HRCs in 2021
  - This will allow for the legal implementation of HRCs and co-located

## Methods

- Using defined search terms, we found print media from US-based news databases and search engines
  - Search terms: "harm reduction center" OR "overdose prevention site" OR "Supervised Consumption Site" OR "supervised injection facility" OR "supervised consumption service" OR "safe inhalation space" OR "supervised smoking site" OR "safe injection facility" OR "supervised injection facilities" OR "safe injection facilities" OR "drug consumption room" OR "drug consumption site" OR "supervised injection site"
- We used Dedoose to read through each article and highlight phrases that convey varying levels of support, neutrality, or opposition to HRCs
- We recorded article-specific information such as author, date and location of publication, and reader views and comments
- We will use the data for 1) descriptive statistics: measures of central tendency for identified articles, and 2) statistical analysis: predictors & longitudinal shifts

## Results

As of July 28, 2022, we have finished analyzing 217 articles

- 102 were analyzed as **supportive** of HRC authorization/implementation
- 18 were analyzed as **unsupportive** of HRC authorization/implementation
- 77 were analyzed as **neutral** regarding HRC authorization/implementation
- 20 were analyzed as **cannot be determined**
- 87 articles were analyzed twice for a total of 174 article analyses
- 43 articles were analyzed once

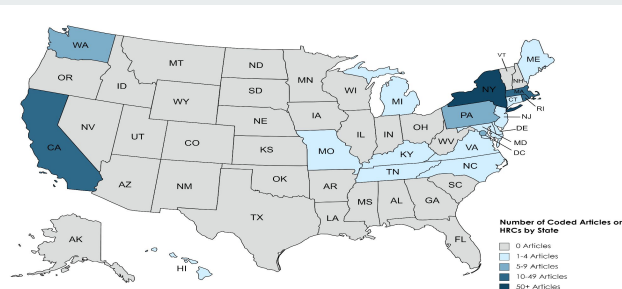


Figure 1. Nationwide distribution of media articles on HRCs analyzed for this project

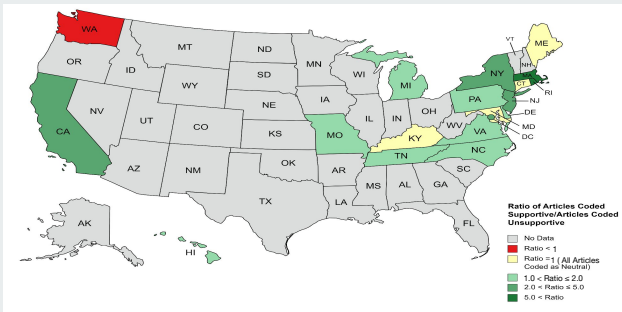


Figure 2. Ratio of articles that expressed support vs. opposition for HRCs

Percentage of coded articles in which individuals of given groups were cited or quoted

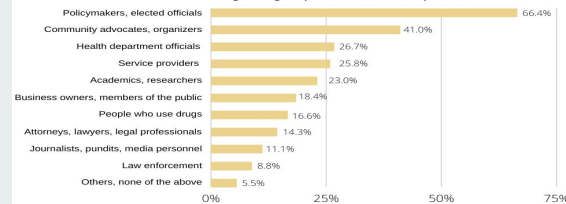


Figure 3: Percentage of analyzed articles on HRCs in which individuals of given groups were cited or quoted

### NIMBYism

"It's incredible to think how much law bending is happening here just so they can put shooting galleries next to schools and residences."

### Rapid Overdose Response

"Overdose prevention sites are not a radical idea...not a single person has died of an overdose and thousands of people have been able to enter treatment and care."

Support and

Opposition towards HRC Implementation

### Social Decay

"Safe injection sites have resulted in a concentration of addicts in neighborhoods...deteriorating quality of life and leading to increase in homelessness, theft and violence"

### Linkage to Healthcare or Social Services

"Luckily, there is a proven tool [HRCs] provide resources such as recovery coaches, education, and referrals to treatment."

Figure 4: Example quotes pulled from media articles on HRCs analyzed for this project

## Future Directions

- To characterize the HRC authorization and implementation in Rhode Island and explore any barriers and facilitators using in-depth interviews with HRC staff, service providers, peers, community members and regulators
- To better understand the impact of HRCs on clients and communities to promote critical knowledge-sharing between implementers worldwide

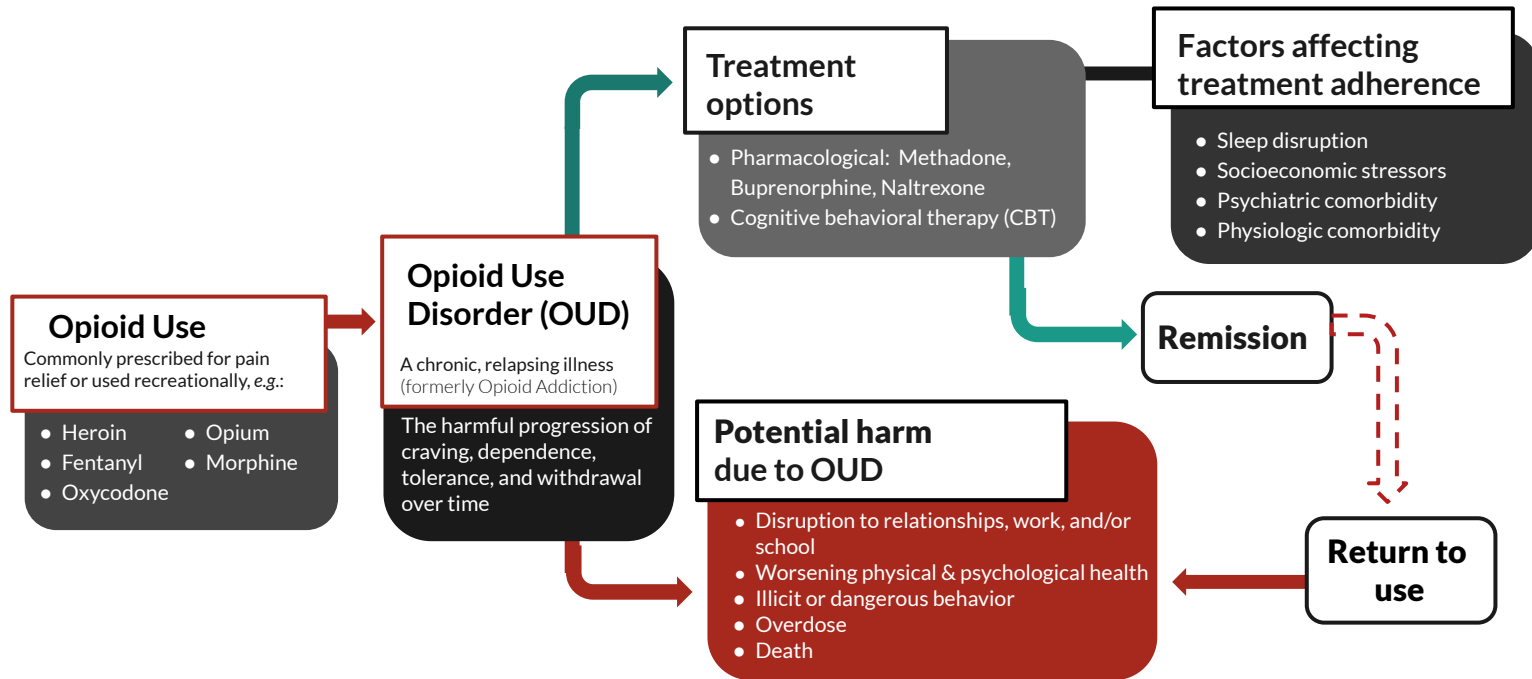
## Acknowledgements

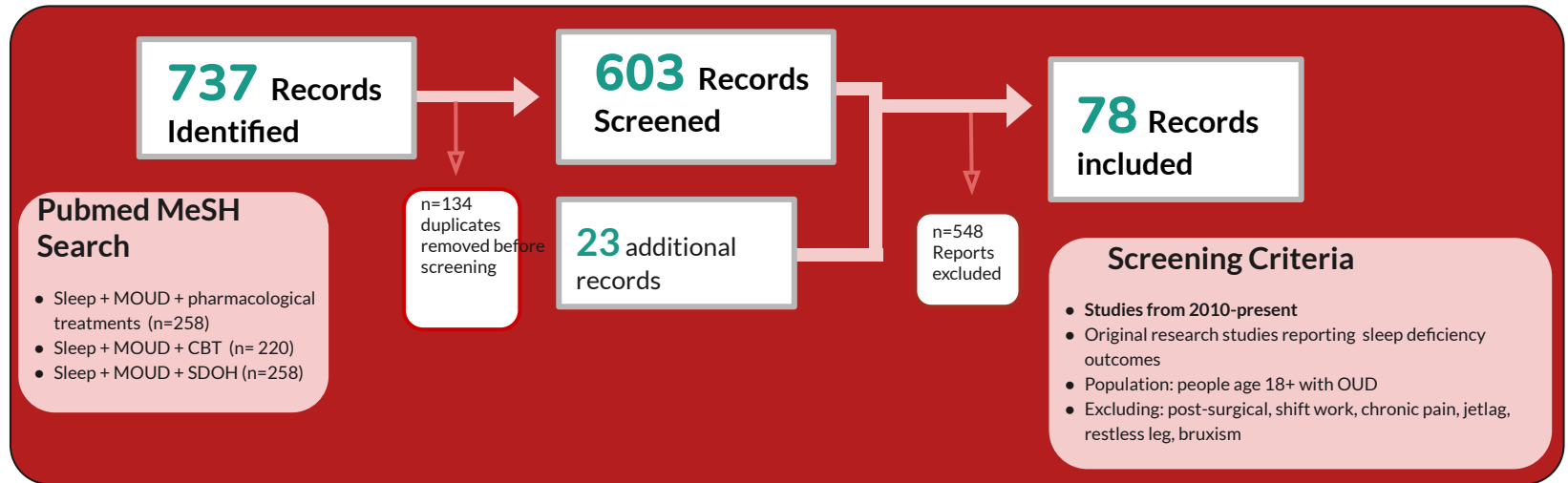
Thank you to the members of the Harm Reduction Innovation Lab at Rhode Island Hospital. This project is funded by the Providence Boston Center for AIDS Research & the COBRE on Opioids and Overdose.

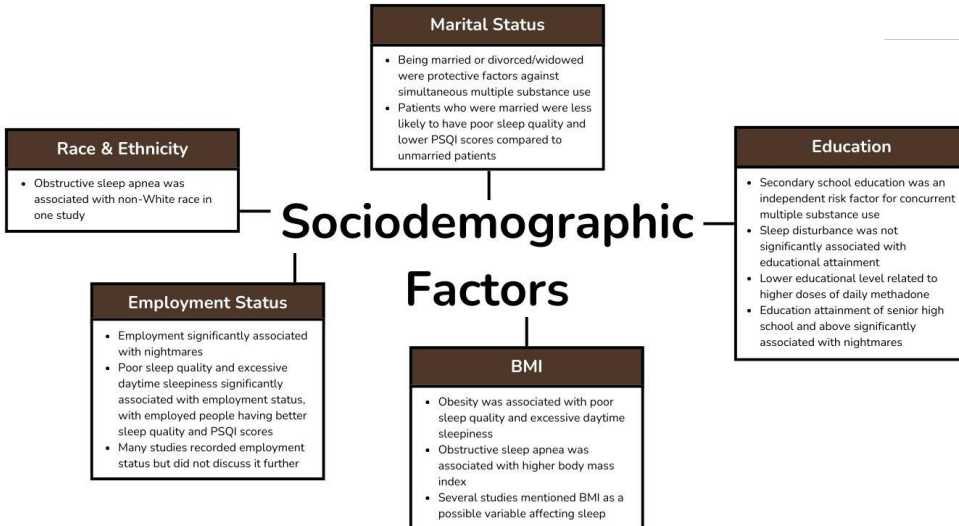
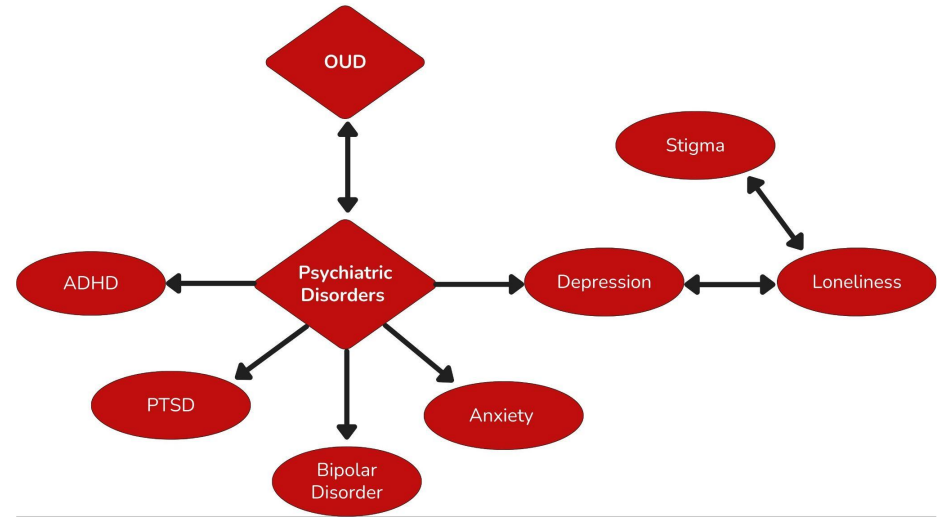


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