



The Association Between Frequency of Opioid Usage and DSM-V Diagnoses of Opioid Use Disorders.

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Introduction

- Opioids are a class of drugs that include prescription painkillers such as oxycodone, fentanyl, and morphine, as well as illegal drugs such as heroin.
- Illicit opioid use can lead to addiction, overdose, and death. Opioid misuse has become a major public health concern in the United States (Kolodny et al., 2015).
- Roughly, 21-29% of patients prescribed opioids for pain misuse them and between 8 and 12% of them develop an opioid use disorder (National Institute of Drug Abuse, NIDA, 2023).
- The Diagnostic and Statistical Manual of Mental Disorders, 5th addition (DSM-5) is the standard for diagnosing mental disorders such as anxiety, mood, and substance abuse disorders. Currently, the DSM-V's criteria for diagnosing an opioid use disorder (OUD) requires fulfilling only 2 out of 11 criteria related to opioid use. The 11 criteria relate to problematic patterns of opioid use, including an inability to quit, cravings, social problems, giving up important activities to opioid use, withdrawal, etc. (CDC).
- The US Food and Drug Administration (FDA) has cited a need for better tools and efficient risk management against opioid addiction and misuse in their 2018 Opioid Strategic Policy Roadmap. Treatment may be more successful if we can diagnose disorders more precisely (FDA, 2021).

Methods

Sample

- Respondents (n=1,815) who reported having used opioids in their lifetime were drawn from the first wave of the National Epidemiologic Study of Alcohol and Related Conditions (NESARC).

- NESARC is nationally representative and was conducted in 2001-2002.

Measures

- Respondents with opioid use disorders were obtained from the NESARC data, which utilized item response theory to generate diagnoses in accordance with the DSM-V's standard for OUDs.
- Frequency of opioid use was assessed by an aggregate total of: (1), ever used opioids (coded dichotomously); and coded on a scale of 1 through 10: (2) the duration (in weeks) of taking opioids, (3) frequency of use when using the most, and (4) number of episodes of opioid abuse. Scores ranged from 1- 19. These scores were also grouped into four categories of usage frequency (low, moderate, high, and severe usage).
- Also included in the analysis: participants receiving prescription medicine was evaluated dichotomously ("Has a doctor ever prescribed medicine/drug to improve your mood/make you feel better?"). Has the respondent been hospitalized within the past 12 months and on a scale of 1-4 (high), how much physical pain are you experiencing.
- An additional variable, a measurement of opioid misuse in full remission is mentioned in the discussion and was drawn from the NESARC data.

Research Questions

- What is the association between frequency of opioid usage and the likelihood of having a DSM-V diagnosis of opioid use disorder?
- Does the association between frequency of opioid use and diagnosis of opioid use disorder differ when controlling for a healthcare provider prescription of medicine?

Results

Univariate

- Nearly 27% of respondents who have ever used opioids met criteria for DSM-V diagnoses of an OUD in their lifetime.
- Among respondents who've ever used opioids, 22% have had a doctor prescribe medication to improve mood/make them feel better.

Bivariate

- Chi-square analysis showed that opioid use frequency is significantly associated with ever receiving an opioid use disorder diagnosis ($\chi^2 = 46.8$, $p < .001$).
- The following categories are significantly different: low versus moderate usage, low vs severe usage, moderate vs severe usage, and high vs severe usage.
- However, low versus high usage and moderate versus high usage, are not significantly different.
- See figure 1.

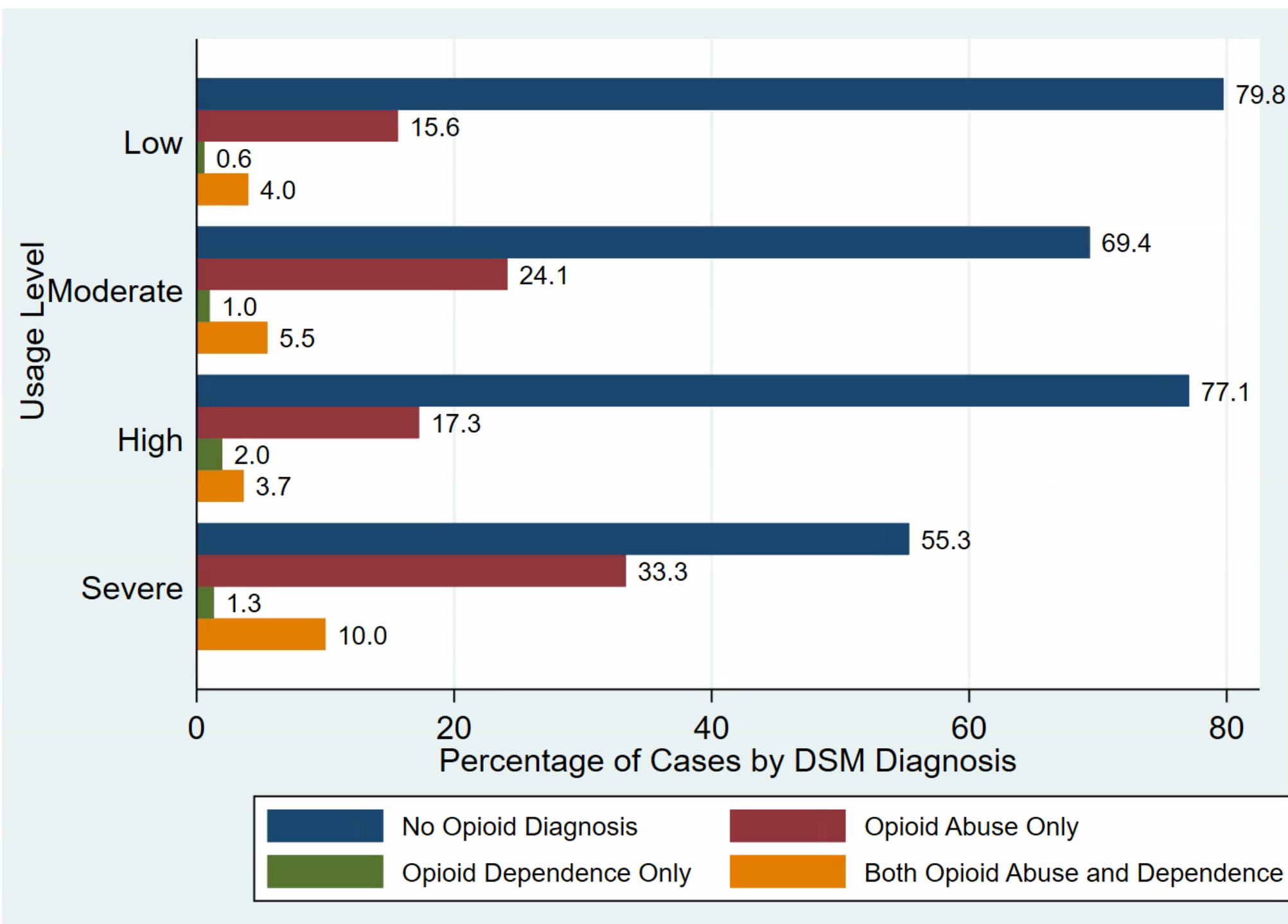


Figure 1. DSM Diagnosis by Risk Level among people who've ever used opioids

Multivariate

- Doctor's prescribing medicine is not a significant predictor of an opioid use disorder ($p = .119$).
- On the opioid usage scale scored from 1-19, the odds of a diagnosed OUD increased by a factor of 1.1 for each increase in score ($p < .0001$). See figure 2.
- Including other variables such as whether a respondent was treated in the emergency room in the previous year (coded dichotomously) increases these odds by a factor of 1.4 ($p < .0001$). The physical pain scale with values 0-4 (low to high pain), increases the odds someone has a diagnosed OUD by a factor of 1.4 ($p < .001$).

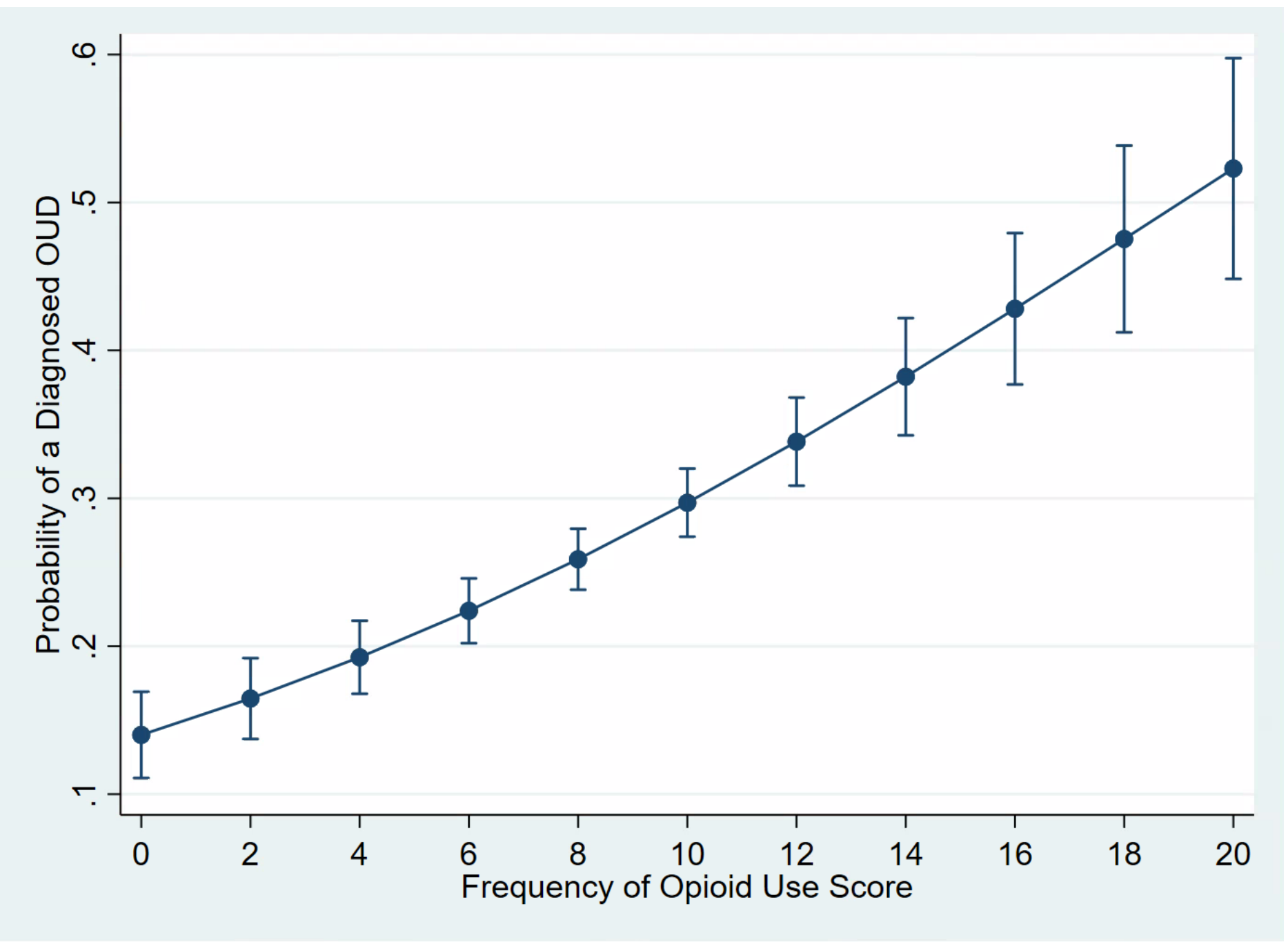


Figure 2: Probability of an Opioid Use Disorder under DSM-V criteria by Frequency of Opioid Use Score

Discussion

- Clearly, the using opioids predicts opioid use disorders.
- However, the aim of this study is to assess whether those scoring low on the frequency scale are just as likely as people scoring high on the scale, to receive OUD diagnoses, and if they are receiving the same diagnosis.
- Our chi-square analysis and logistic regression model tells us that all levels of opioid usage are associated with opioid use disorders, despite the large differences in the ways people in these categories are using opioids. The interactions with the chi-square analysis is telling us that people are using opioids in different frequencies, but still meet the criteria for an OUD.

Discussion cont.

- The rate of OUDs among those who have ever used opioids in the data set (27%) is much higher than the 8-12% of medical users who get diagnosed with OUDs as reported by NIDA.
- Notably, the research does provide evidence in line with the FDA's goals of providing better tools and more efficient risk management with OUDs.
- Further research should look at how different levels of use predict different outcomes of opioid use to help understand what these new levels should be. See figure 3. For example, most opioid users in remission are in the low and moderate usage category, however they still receive the same DSM-V diagnosis as those in the higher usage categories. Potentially, more categories can be helpful to identify OUDs and target support programs.

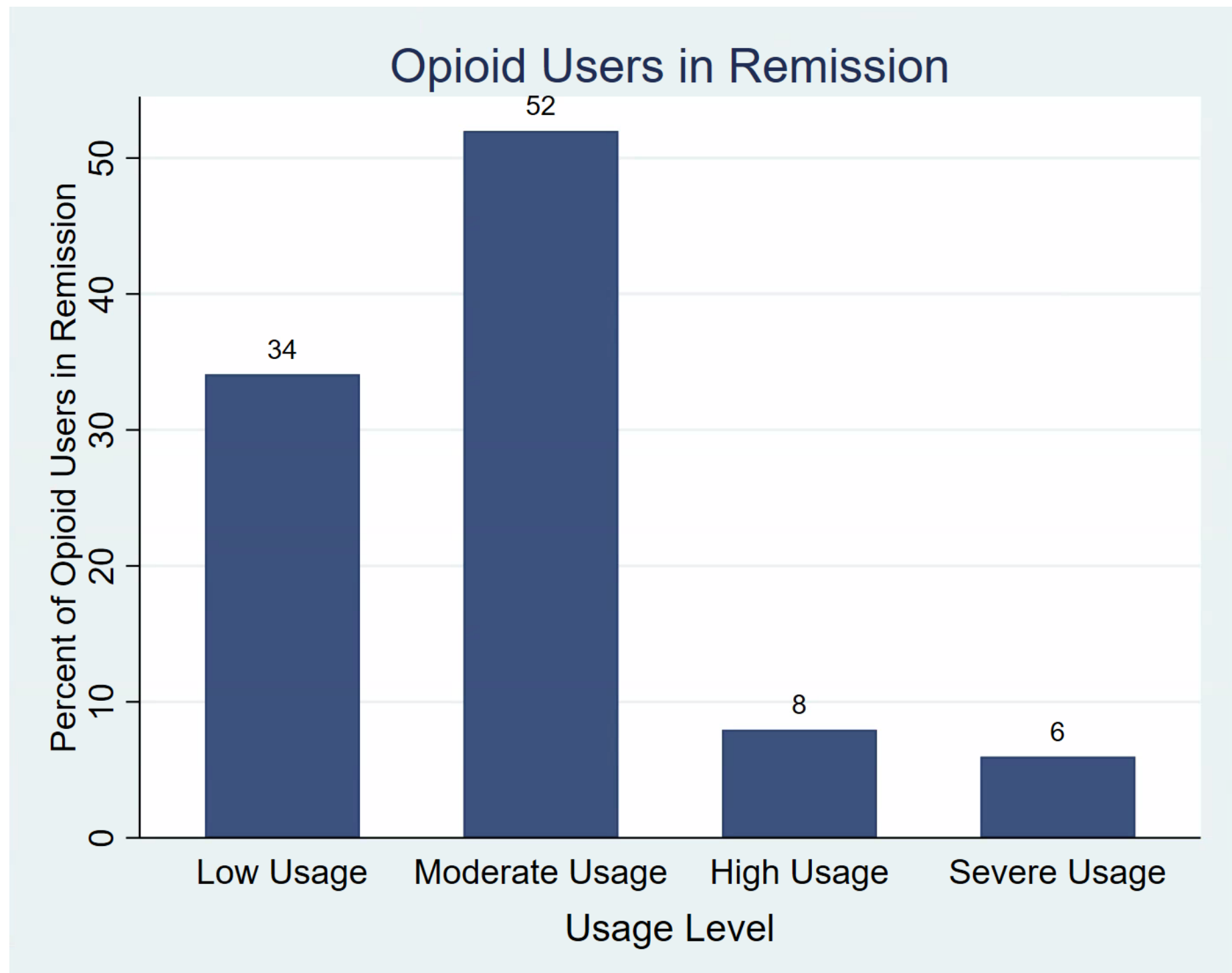


Figure 3: Opioid misuse in remission by opioid usage level