

# Analyzing State-level Income, Behavioural and Social Factors on Drug Misuse

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## 1. Background and Introduction

Substance abuse is common among individuals of lower economic status. Responses to lifetime non-medical use (NMU) and DAST-10 questions were retrieved from an online survey conducted by the Survey of Non-Medical Use of Prescription Drugs Program from the United States in 2019. Our project aims to explore 1) which income level is more likely to misuse a certain category of prescription drug and 2) which DAST questions can be further studied to prevent future drug misuse cases.

## 2. Methods

The binary response variable for each drug category NMU was fitted in a generalized linear (logistic) model against a fixed effect for income brackets. Then, we explored the relationship between each DAST-10 answer and the identified statistically significant income brackets from the previous model. Note that we did not use the provided post-stratification weights.

## 3. Results

The models indicate that income brackets affect the probability of NMU for every drug category at a statistically significant estimate (*refer to 1:54*). Belonging in certain income brackets affects the probability of NMU. DAST 1, 2, 3, 5, and 9 questions showed significance and had an effect on the probability of NMU in the extreme income bracket ends (*refer to 4:05*). The investigation shows statistically significant evidence for multiple drug type misuse, except THC. The analysis also indicates that pain relievers were most likely to be misused in almost every income bracket.

## 4. Discussion

We found that individuals in extreme ends of the income bracket tend to misuse nearly every drug category. Particularly, substance abuse is usually a consequence of individuals with financial distinctions due to their living environment. Thus, leading to unhealthy coping mechanisms such as drugs. Surprisingly, similar DAST questions were most significant in determining non-medical use in both the lowest and highest income bracket. Perhaps these questions either directly ask about the impactful personal issues for a drug user or appear to be a proxy for them, meaning similar questions of these nature may be of use in determining targeted future questionnaires.

## 5. Conclusion

Overall, we found that across logistic models relating drug categories and respective non-medical use, the two most extreme brackets show potentially hidden behavioral motives for drug usage. Current DAST-10 questions may be limited in coverage of possible behavioural questions, perhaps wording or targeting questions similar to questions 1, 2, 3, 5 and 9 would help for questions that provide more insightful inferences. Our results are not generalized to a larger population beyond the sample as post-stratification weights were not used. Further investigation should be conducted to make accurate inferences.