



The Association Between Hallucinogen Usage and Opioid Dependence Among Age Groups of the 1960s



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Introduction

- Psychedelic assisted therapy is a growing field proven to alleviate mental disorders and addiction, despite the belief that psilocybin leads to addiction, medical abnormalities, and psychosis.
- Psilocybin and LSD act on serotonin 5-hydroxytryptamine 2A receptor activation (5HT_{2A}), like some modern prescription drugs.
- Psilocybin Mushrooms and LSD, two examples of psychedelics with therapeutic potential, are classified as Schedule I drugs by the Drug Enforcement Administration (DEA), which are defined as having high risk for abuse, no known medical benefits, and are not approved for any use, even under the care of a doctor. (Nichols, 2016).
 - This action also ended further research on psychedelics - halting any progress on therapeutic research until recent years.
- Psilocybin has been tested to treat addiction of opioids, alcohol, heroin, and nicotine - leads to substantial cessation rate of drug use. (Johnson, 2014) (Van der Meer, 2023) (Floris, 2024)
- The therapeutic dose of psilocybin in the experimental studies is an extremely small quantity: much less than a gram. Psilocybin treatment is normally combined with some form of psychotherapy in experimental studies.

Methods

Sample

- Hallucinogen users (age categories ranging from 15 to 70) who reported hallucinogen use either in the past 12 months, prior to the past 12 months, or both. The sample (n=1320) was drawn from the first wave of the National Epidemiologic Study of Alcohol and Related Conditions (NESARC) in 2002.

Measures

- Opioid dependence: collapsed categories represent no use and abuse (2) versus some form of opioid dependence (1). Hallucinogen use: the information is organized in terms of time interval of use.
- Opioid dependence variables: (0) No use/Used opioids in the last 12 months/Used opioids prior to the last 12 months, (1) Any form of opioid dependence in the past 12 months or prior.
- Hallucinogen variables: (1) Used hallucinogens in the past 12 months, (2) Used hallucinogens prior to the last 12 months, (3) Used hallucinogens during both time periods (4) Use of hallucinogens and excluding any opioid use.

Research Questions

- How does the use of hallucinogens relate to opioid dependence?
- How does the use of hallucinogens relate to opioid abuse among people who use opioids?

Results

Univariate

- Out of a total of 2174 hallucinogen users, 2.9% represents use during the past 12 months; 91% represents use prior the past 12 months; 6% represents use across both time periods.
- A total of 97% of opioid users are dependent, while 3% met criteria for either abuse or no use.

Bivariate

- Chi-Square analysis and table row proportions show that a total of 2,108 people use hallucinogens exclusively with no opioid dependence, while 66 of hallucinogen users of any kind are simultaneously dependent on opioids.
- Post-Hoc tests reveal that there are significantly less non-users for hallucinogens than only past users and users across both time intervals.
- In contrast, non-users are not significantly different from present users.
- There is no significant difference among past and present hallucinogens users.

	0	1	2	3
0	40852	62	1919	127
1	65	1	61	4

Figure 1. Proportion of Opioid Dependence (left column) Among Categories of Hallucinogen Users (top row)

Multivariate

- Hallucinogen use was compared to opioid dependence after controlling for age categories.
- The risk of being dependent on opioids go up by a factor of 3.89 with each increasing level of hallucinogen groups (OR=3.89).
- Age groups are not significantly different from each other, although the plot suggests there is a greater proportion of 31-50-year-old hallucinogen users with opioid dependence.
- Almost all 51-70-year-old hallucinogen users are exclusively past users, with 197 being only past users and only 1 user in "Both"

Discussion

- 51-70-year-olds: those that were likely to have great exposure to liberal usage of psychedelics in the height of the psychedelic era, 20-30-year-olds during the 1960s, is only group concentrated in the past psychedelic use category.
- Opioid dependence is not significantly higher between non-users and present hallucinogen users. This may support how psychedelics serve interfere and recalibrate addiction pathways when used concurrently, rather than when used in the past.
- Limitations: while the significance between variables can be determined, I am not able to conclude a causal link due a gap in knowing the timing of the substance use; users of one drug may be more likely to have exposure to other drugs; small sample size.
- Although the relationship from the data is not aligned with modern neurological discoveries, further research with a larger sample size and broader time range may support and validate its therapeutic potential to help reduce addictive tendencies for other drugs.
- To address the gap in drug overlap, future research may look at frequency of use as well as three separate time intervals to understand opioid usage before and after exposure to psychedelics.

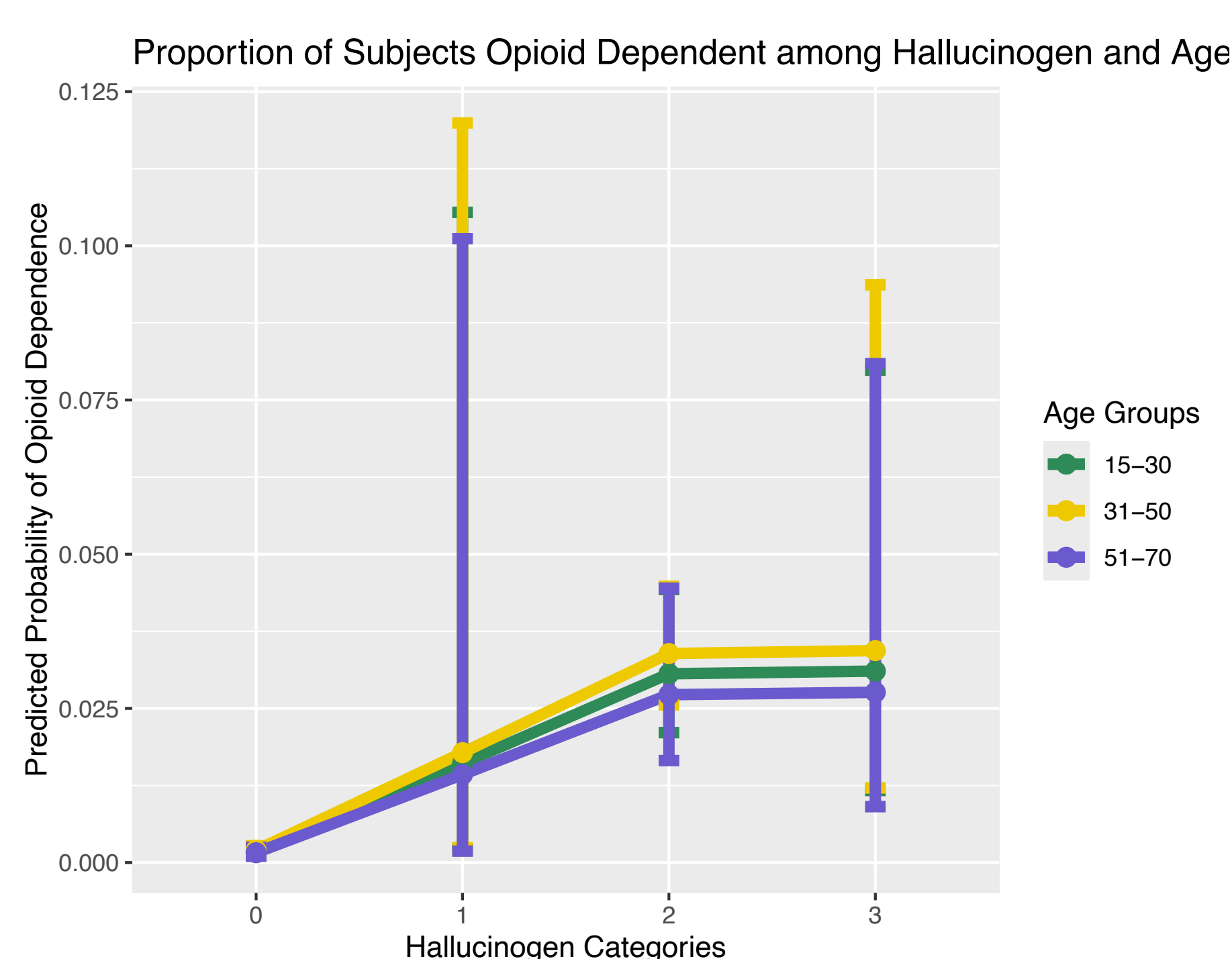


Figure 2. Proportion of Subjects Opioid Dependent among Hallucinogen and Age Categories With Error Bars

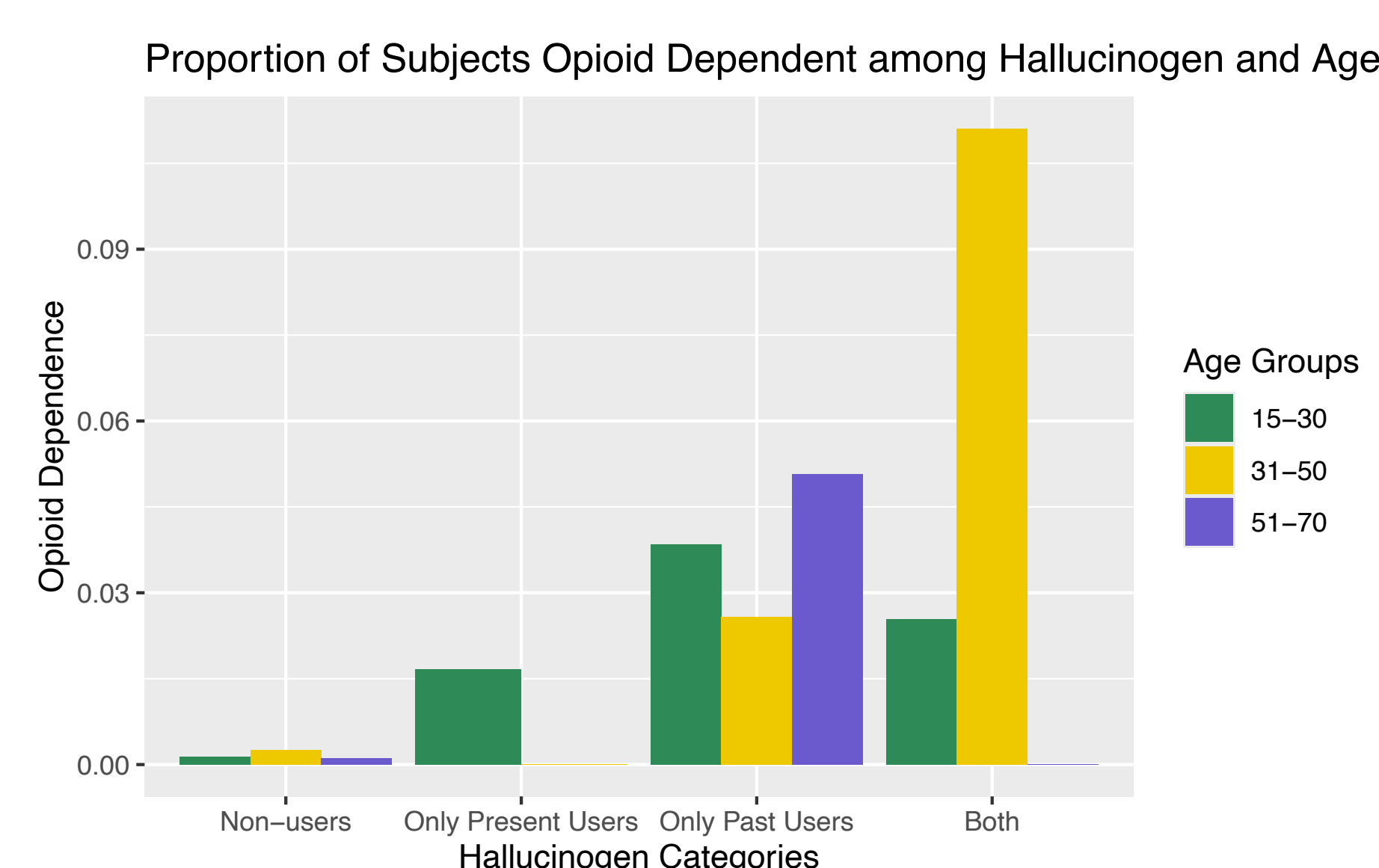


Figure 3: Proportion of Subjects Opioid Dependent among Hallucinogen and Age Categories

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