Research Question

To what extent is illicit substance use associated with suicidal ideation among young adults aged 18-25?

Data

2021-2023 NSDUH (National Survey on Drug Use and Health) dataset

Results

Table 1.

Young adults' characteristics according to the presence of suicidal ideation

Variable	Overall, n=41,873	Suicidal Ideation, n=5303	No Suicidal Ideation, n=36570	P-value
Gender, %				<.001
Male	50.1	40.99	51.5	
Female	49.9	59.01	48.5	
Race or Ethnicity, %				.003
Nonhisp White	52.4	56.6	51.8	
Hispanic	23.8	20.7	24.3	
NonHisp Black/Afr Am	13.5	11.8	13.7	
NonHisp Asian	6.3	5.6	6.4	
Nonhisp more than one race	3.0	3.9	2.8	
Nonhisp Native Am/AK Native	0.6	0.9	0.6	
NonHisp Native HI/Other Pac Isl	0.4	0.3	0.4	
Highest Education Obtained, %				<.001

Some coll/Assoc Dg	40.1	42.4	39.8	
High school grad	33.0	34.4	32.8	
College graduate	16.3	12.1	16.9	
Less high school	10.6	11.1	10.5	
Work Status, %				<.001
Employed full time	39.8	38.9	39.9	
Other (incl. not in labor force)	26.0	22.7	26.5	
Employed part time	24.7	27.8	24.2	
Unemployed	9.6	10.6	9.4	
Private Health Insurance, %	56.7	58.9	56.3	.04
Household Size, %				.006
Four people in household	24.5	22.6	24.8	
Three people in household	24.3	25.8	24.0	
Two people in household	20.3	22.2	19.9	
Five people in household	13.6	12.4	13.8	
6 or more people in household	11.3	9.9	11.5	
One person in household	6.1	7.2	5.9	
Household Income, %				0.12
$75,000 or More	33.3	31.1	33.6	

20,000 to 49,999	29.7	31.7	29.4	
Less than $20,000	22.6	23.2	22.5	
50,000 to 74,999	14.3	13.9	14.4	
Past Year Alcohol Use, days	44.1 +/- 1.2	57.3 +/- 3.2	42.1 +/- 1.3	<.001
Past Month Binge Drinking, days	1.1 +/- 0.05	1.59 +/- 0.2	1.0 +/- 0.1	<.001
Past Year Cigarette Use, days	1.5 +/- 0.11	2.6 +/- 0.3	1.3 +/- 0.1	<.001
Past Month Nicotine Vaping, days	4.57 +/- 0.2	7.17 +/- 0.5	4.18 +/- 0.2	<.001
Past Year Received Inpatient Substance Use Treatment, %	1.4	4.1%	1.1%	<.001
Past Year How Often Felt Nervous, %				<.001
LEGITIMATE SKIP	56.8	21.9	62.0	
Most of the time	14.7	26.4	12.9	
Some of the time	12.1	10.9	12.3	
All of the time	10.3	35.5	6.6	
A little of the time	4.9	4.1	5.0	
None of the time	1.2	1.0	1.2	
Past Year How				<.001

Often Everything Felt Like an Effort, %				
LEGITIMATE SKIP	56.8	21.9	62.0	
All of the time	12.0	43.2	7.3	
Most of the time	11.1	19.6	9.8	
Some of the time	10.0	9.6	9.9	
A little of the time	6.6	3.9	7.0	
None of the time	3.6	1.8	3.8	
Past Year Difficulty Concentrating, %				<.001
No difficulty	28.2	11.3	30.6	
Mild difficulty	27.9	24.0	28.4	
Moderate difficulty	20.2	34.4	18.0	
LEGITIMATE SKIP	13.9	0.4	15.9	
Severe difficulty	9.9	29.9	6.9	

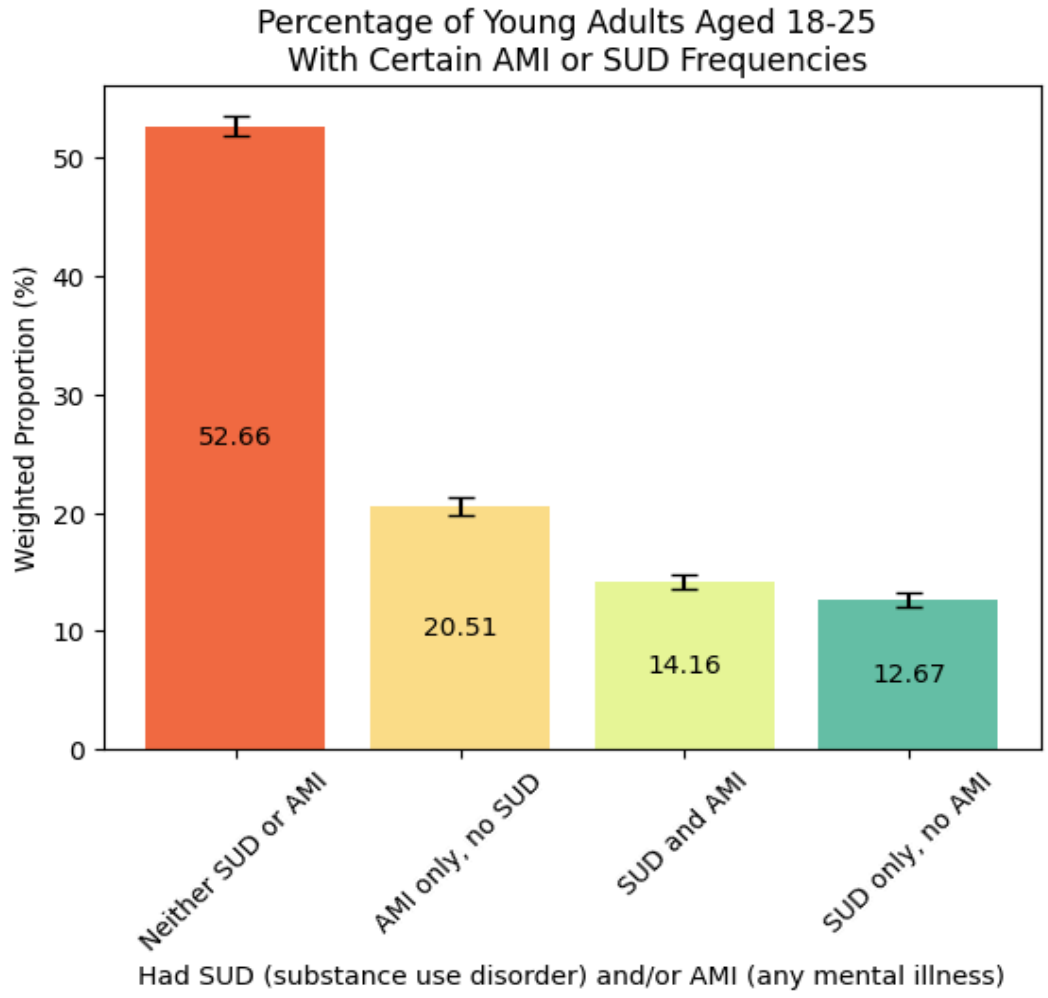

Figure 1.

Table 2.
Initial associations between illicit substance and suicidal ideation

Illicit Substance Variable	Overall, n=41,873	Suicidal Ideation, n=5303	No Suicidal Ideation, n=36570	P-value
Past Year Marijuana Use, days	53.7 +/- 1.8	95.0 +/- 6.1	47.6 +/- 1.7	<.001
Past Year Cocaine Use, days	0.8 +/- 0.2	1.7 +/- 0.8	0.69 +/- 0.2	.021
Past Year	0.8 +/- 0.1	1.8 +/- 0.6	0.6 +/- 0.1	<.001

Hallucinogen Use, days				

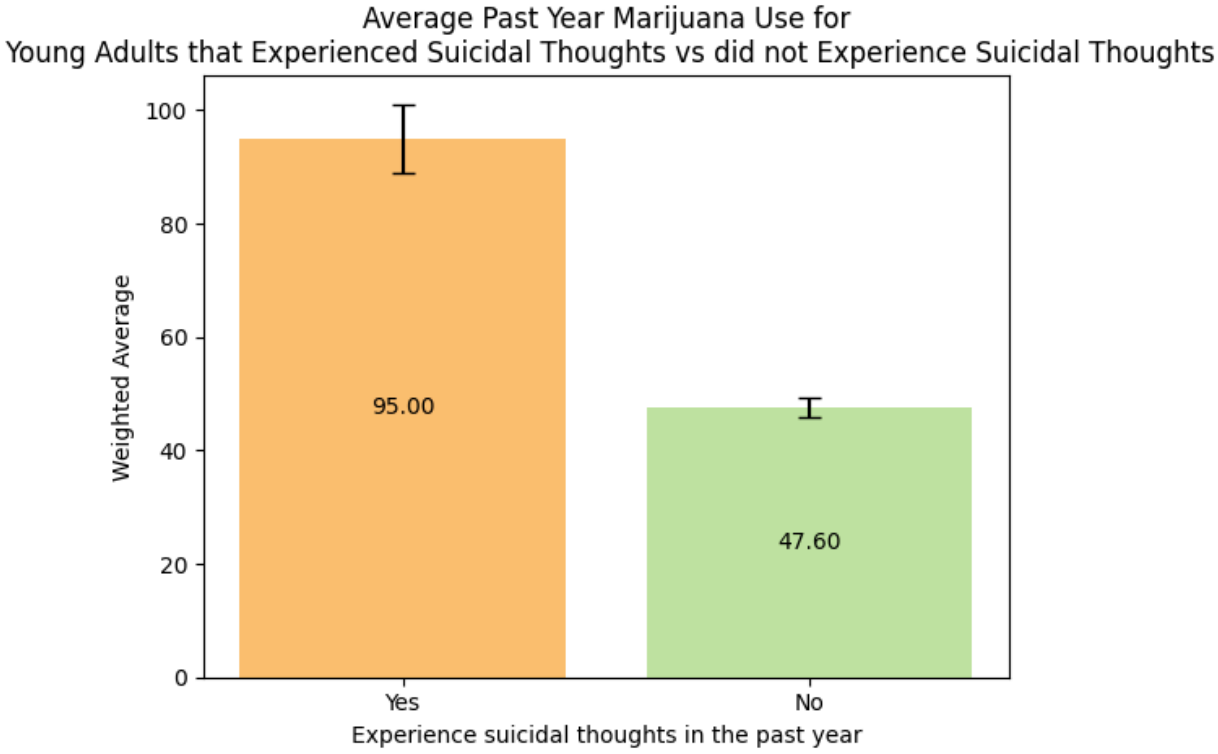

Figure 2.

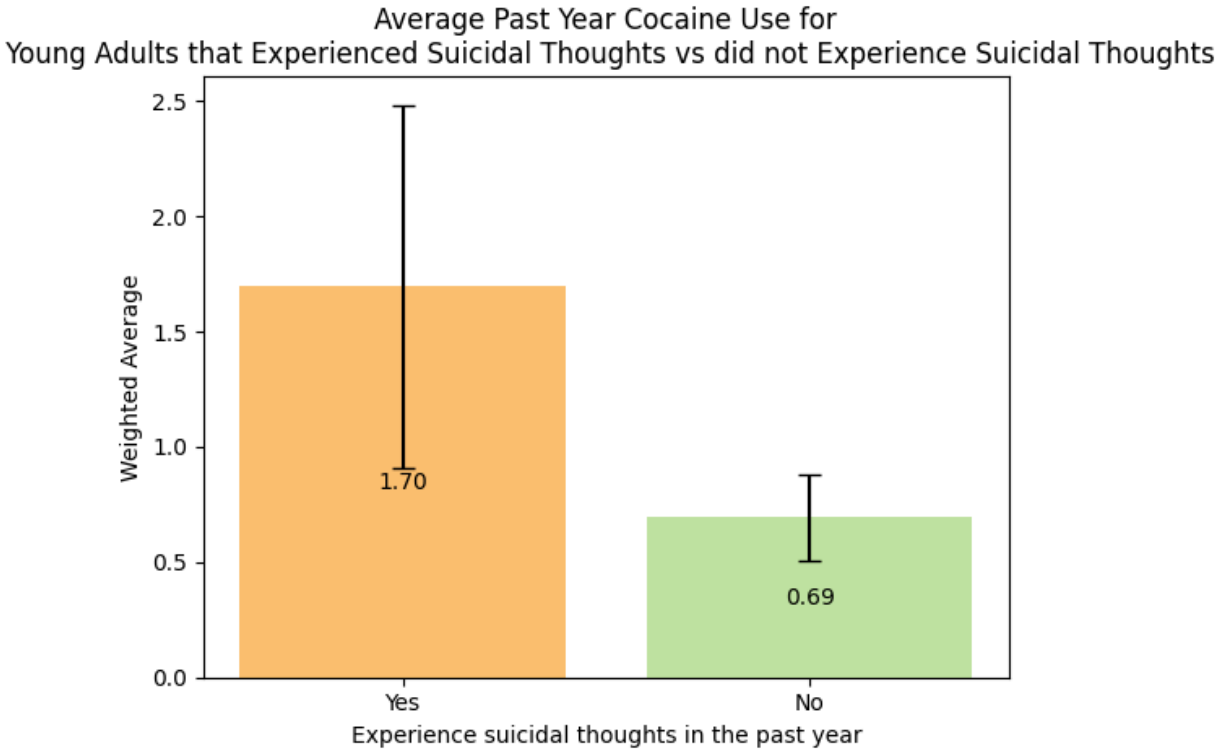

Figure 3.

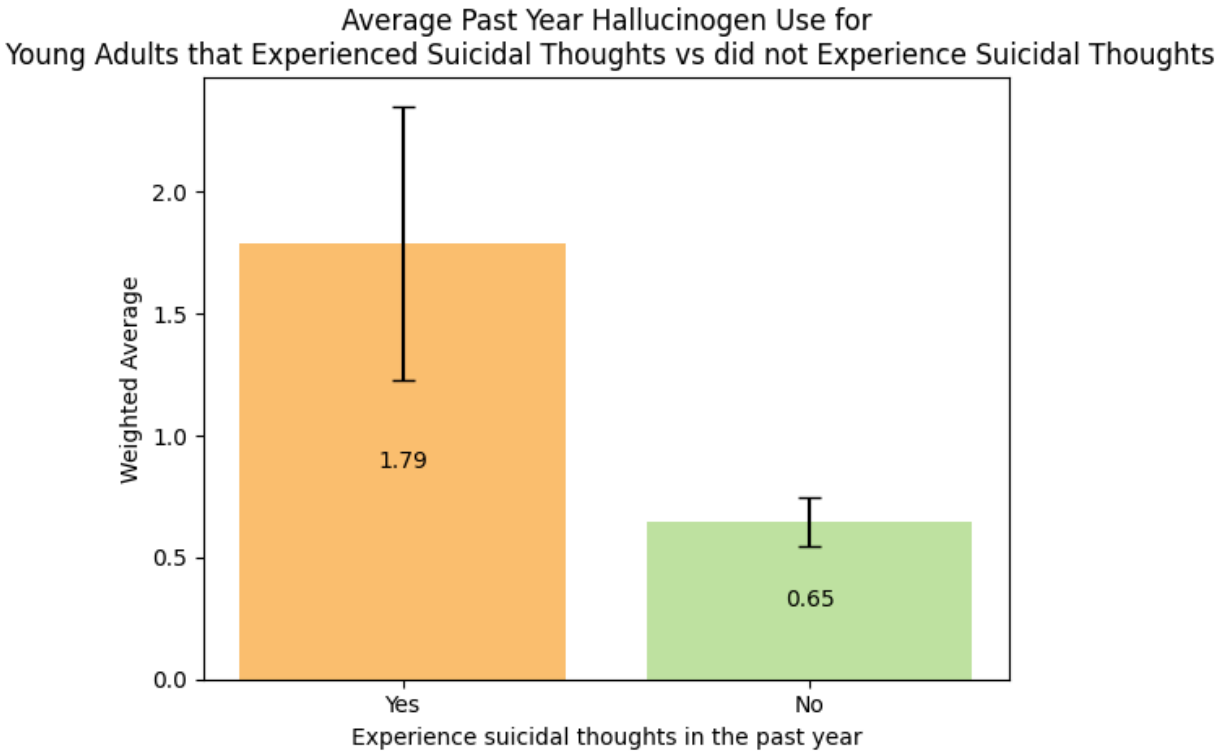

Figure 4.

Table 3.
Unadjusted and adjusted odds ratios and 95% confidence intervals of suicidal ideation according to the primary studied factors (yearly marijuana use)

Marijuana Use	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Past Year Marijuana Use, 0-90 days (ref)	1	1
Past Year Marijuana Use, 90-180 days	2.04 (1.62, 2.57)*	1.62 (1.20, 2.18)*
Past Year Marijuana Use, 180-270 days	2.13 (1.76, 2.58)*	1.46 (1.12, 1.89)*
Past Year Marijuana Use, 270-360	2.72 (2.39, 3.09)*	1.67 (1.36, 2.07)*

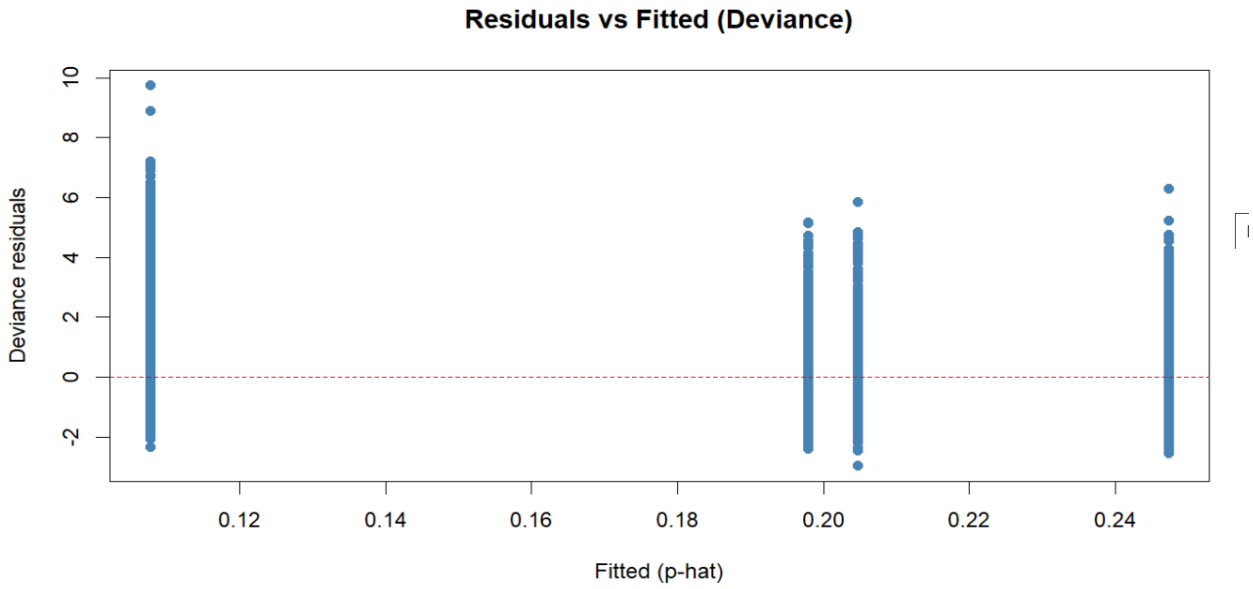

Figure 5. Residuals vs. Fitted Values for Unadjusted Logistic Regression model between Marijuana Use and Suicidal Ideation

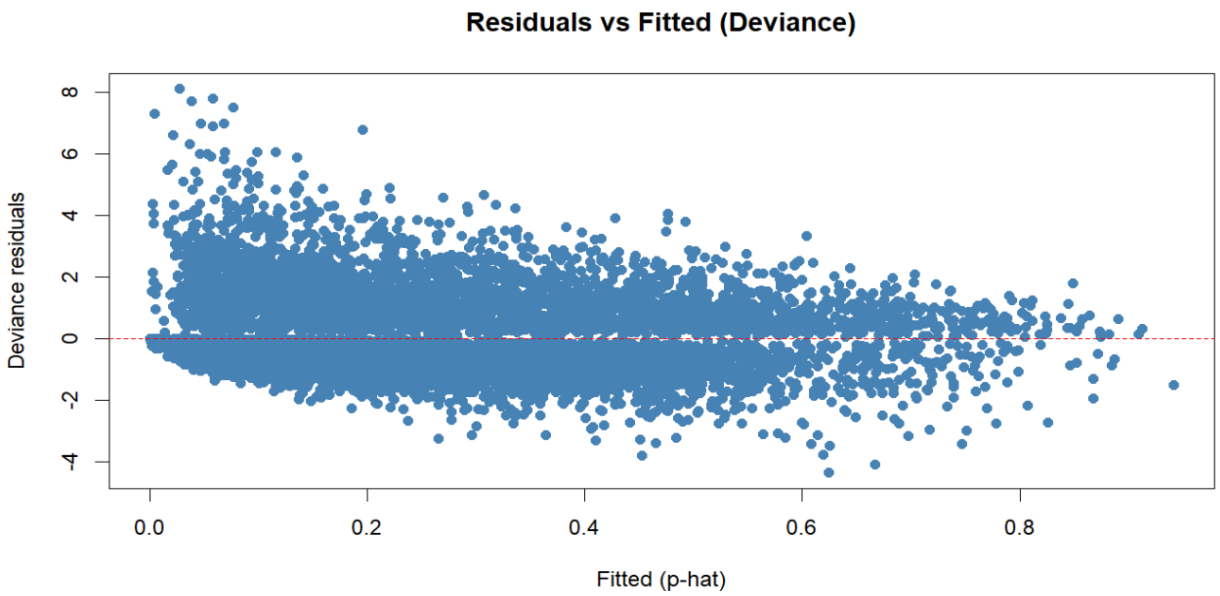

Figure 6. Residuals vs. Fitted Values for Adjusted Logistic Regression model between Marijuana Use and Suicidal Ideation

Table 4.
Unadjusted and adjusted odds ratios and 95% confidence intervals of suicidal ideation according to the primary studied factors (yearly marijuana use, cocaine use, hallucinogen use) standardized

Illicit Substance Use	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Past Year Marijuana Use, Standardized	1.32 (1.28, 1.36)*	1.16 (1.11, 1.23)*
Past Year Cocaine Use, Standardized	1.04 (0.99, 1.09)	0.99 (0.92, 1.06)
Past Year Hallucinogen Use, Standardized	1.04 (1.01, 1.07)*	1.01 (0.97, 1.05)

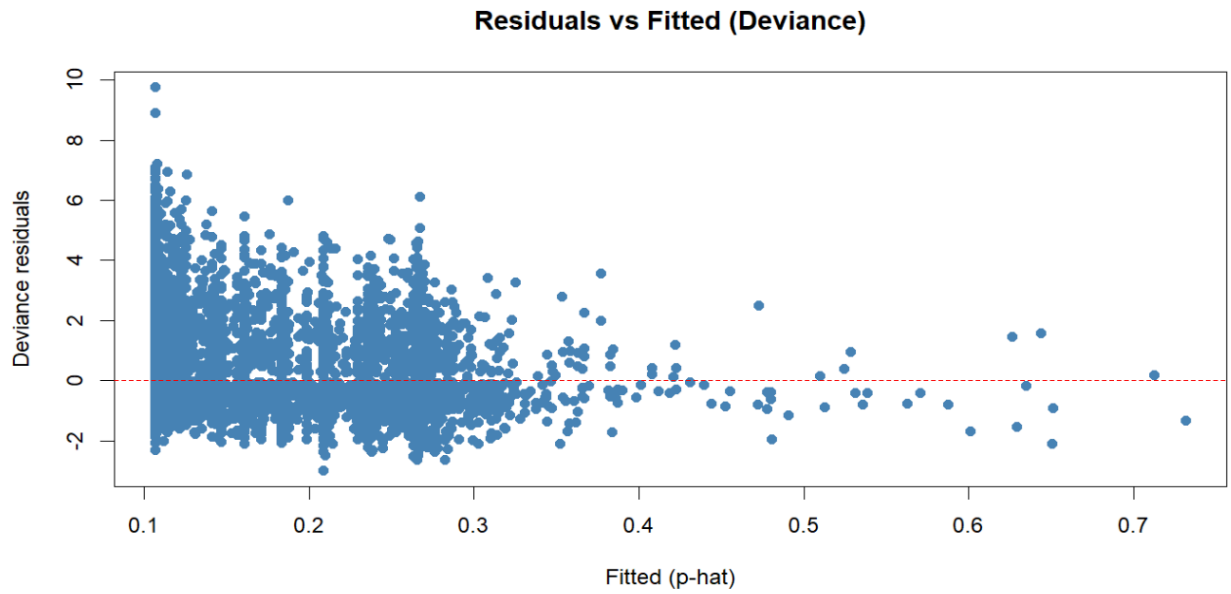

Figure 7. Residuals vs. Fitted Values for Unadjusted Logistic Regression model between Illicit Substance Use and Suicidal Ideation

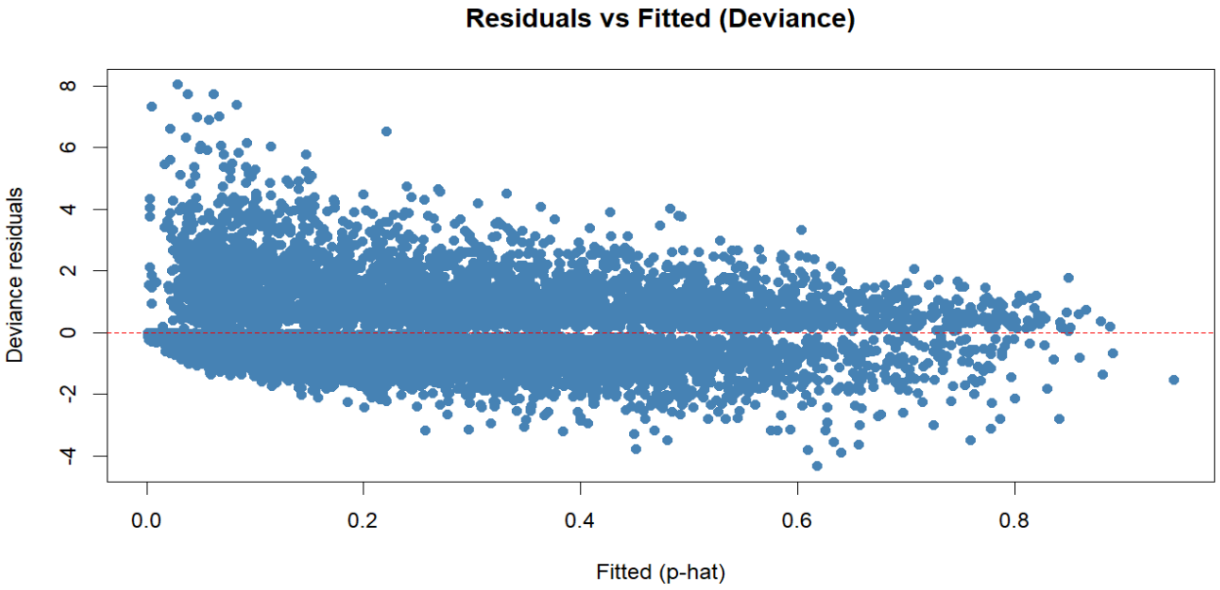

Figure 8. Residuals vs. Fitted Values for Adjusted Logistic Regression model between Illicit Substance Use and Suicidal Ideation

Conclusion & Next Steps

1. **Conclusion**

- Young adults that use marijuana frequently are more likely to experience suicidal ideation compared to young adults that use marijuana less frequently
- There is no association between cocaine use and suicidal ideation among young adults*
- There is no association between hallucinogen use and suicidal ideation among young adults*

2. **Next Steps**

- Perform restricted cubic splines to examine the non-linear association between marijuana use and suicidal ideation among young adults
- Fine tune current logistic regression models
- If time permits, look at the association between illicit substance use variables and other mental health outcomes such as MDE (major depressive episode) and receipt of inpatient mental health treatment