**Supplemental Materials**

**Results**

Given the significant differences on biological sex between alcohol and cannabis use trajectory classes, we included biological sex as a between-subjects factor in our ANOVA models separately for alcohol use and cannabis use trajectories. Furthermore, given the significant differences found in demographic variables in the alcohol and cannabis use trajectory classes, we conducted sensitivity analyses to determine whether these variables influence our findings. Specifically, BMI was significantly different between alcohol use trajectory classes and age, education, CTQ-SF, BMI, marital status, and race/ethnicity were significantly different between cannabis trajectory classes.

*Alcohol use trajectories and change in PTSD Symptoms.* Upon including biological sex as a between-subjects factor and BMI as a covariate, the originally significant time by alcohol use trajectory class interaction was no longer significant, *F*(3, 1221)=1.53, *p*=.21. Furthermore, there was a non-significant time by alcohol use trajectory class by biological sex interaction, (*p*=.62).

*Alcohol use trajectories and change in Depression Symptoms.* Upon including biological sex as a between-subjects factor and BMI as a covariate, the significant main effect of time remained significant, *F*(2, 1530)=3.44, *p*=.04, ηp2=.004. Additionally, the significant main effect of alcohol trajectory class remained significant *F*(2, 896)=3.80, *p*=.02, ηp2=.01. Furthermore, no significant interactions were found with biological sex (*p*s>.55).

*Cannabis use trajectories and change in PTSD Symptoms.* Upon including biological sex as a between-subjects factor and age, education, CTQ-SF, BMI, marital status, and race/ethnicity as covariates, the once significant time by cannabis use trajectory interaction was now trending significance, *F*(3, 1202)=2.57, *p*=.052, ηp2=.01. Furthermore, there was a non-significant time by cannabis use trajectory class by biological sex interaction, *F*(3, 1202)=1.39, *p*=.25.

*Cannabis use trajectories and change in Depression Symptoms.* Upon including biological sex as a between-subjects factor and age, education, CTQ-SF, BMI, marital status, and race/ethnicity as covariates, the time by cannabis trajectory interaction remained significant, *F*(3, 1470)=2.80, *p*=.03, ηp2=.01. Furthermore, there was a non-significant time by cannabis use trajectory class by biological sex interaction, *F*(3,1470)=1.79, *p*=.14.

**Table S1.**

*Summary of Alcohol Use Trajectory Models*

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Class | loglik | conv | npm | AIC | BIC | SABIC | Entropy | %class1 (n) | %class2 (n) | %class3 (n) | %class4 (n) |
| 1 | -13839.58 | 1 | 7 | 27693.16 | 27730.88 | 27708.64 | 1.00 | 100.00(1617) | NA | NA | NA |
| 2 | -12898.21 | 2 | 12 | 25820.42 | 25885.08 | 25846.95 | 0.81 | 21.89(354) | 78.11(1263) | NA | NA |
| 3\* | -12508.70 | 1 | 17 | 25051.39 | 25142.99 | 25088.99 | 0.88 | 76.62(1239) | 16.14(261) | 7.24(117) | NA |
| 4 | -12362.18 | 1 | 22 | 24768.35 | 24886.89 | 24817.00 | 0.84 | 14.35(232) | 8.84(143) | 70.93(1147) | 5.88(95) |

*Notes.* AIC=Akaike Information Criterion; BIC=Bayesian Information Criterion; SABIC=sample-size-adjusted Bayesian Information Criterion; NA=not applicable.

\* Denotes chosen model

**Table S2.**

*Summary of Cannabis Use Trajectory Models*

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Class | loglik | conv | npm | AIC | BIC | SABIC | Entropy | %class1(n) | %class2(n) | %class3(n) | %class4(n) |
| 1 | -14880.75 | 1 | 7 | 29775.50 | 29813.22 | 29790.98 | 1.00 | 100.00(1617) | NA | NA | NA |
| 2 | -12769.82 | 2 | 12 | 25563.63 | 25628.29 | 25590.17 | 0.95 | 22.39(362) | 77.61(1255) | NA | NA |
| 3\* | -12082.49 | 1 | 17 | 24198.99 | 24290.59 | 24236.58 | 0.96 | 77.06(1246) | 16.20(262) | 6.74(109) | NA |
| 4 | -12024.96 | 1 | 22 | 24093.92 | 24212.46 | 24142.57 | 0.96 | 15.52(251) | 75.94(1228) | 5.19(84) | 3.34(54) |

*Notes.* AIC=Akaike Information Criterion; BIC=Bayesian Information Criterion; SABIC=sample-size-adjusted Bayesian Information Criterion; NA=not applicable.

\* Denotes chosen model