**Supplementary Materials**

**Author et al. (2018)**

Supplementary Table 1. Testing cohort differences using unweighted and weighed hierarchical linear models. Results for SUD diagnosis*.*

UnweightedWeighted

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Model 1** | **Model 2** | **Model 1** | **Model 2** |
| *Fixed Effects* |  |  |  |  |
| Intercept | 1.43 (.107)\* | 1.38 (.131)\* | 1.41 (.091)\* | 1.39 (.096)\* |
| Linear Slope | .129 (.033)\* | .153 (.041)\* | .127 (.030)\* | .138 (.038)\* |
| Quadratic Slope | .0001 (.005) | .0001 (.005) | .003 (.005) | .002 (.005) |
| Cohort 2 | .431 (.132)\* | .418 (.166)\* | .420 (.116)\* | .399 (.127)\* |
| Cohort 3 | .541 (.124)\* | .601 (.156)\* | .419 (.1164)\* | .436 (.135)\* |
| Cohort 4 | .581 (.124)\* | .674 (.156)\* | .532 (.118)\* | .619 (.134)\* |
| Time\*Cohort 2 |  | .007 (.032) |  | .012 (.036) |
| Time\*Cohort 3 |  | -.037 (.030) |  | -.012 (.037) |
| Time\*Cohort 4 |  | -.052 (.003)\* |  | -.049 (.038) |
| *Random Effects* |  |  |  |  |
| Intercept Within (L1) | 1.15 (.096)\* | 1.15 (.096)\* | 1.04 (.086)\* | 1.04 (.086)\* |
| Intercept Between (L2) | -.041 (.021)\* | -.040 (.020)\* | -.058 (.018)\* | -.058 (.018)\* |
| Linear Slope | .074 (.007)\* | .074 (.007)\* | .079 (.007)\* | .079 (.006)\* |
| *Fit Indices* |  |  |  |  |
| -2LL | 27628.6 | 27624.5 | 29897.2 | 29894.4 |
| AIC | 27648.6 | 27650.5 | 29917.2 | 29920.4 |
| BIC | 27698.6 | 27650.5 | 29967.3 | 29985.4 |
| *Note:* The models shown above are for unweighted (e.g., raw data) and weighted (e.g., with propensity weights applied). This preliminary step is used to assess cohort differences and determine if utilization of an accelerated longitudinal design is appropriate. Cohort 1 (age 14) was the reference group. Cohort 2 = 15 years old, Cohort 3 = 16 years old, Cohort 4 = 17 years old. -2LL = -2 log likelihood, AIC = Akaike Information Criteria, BIC = Bayesian Information Criteria. | | | | |

Supplementary Table 2. Class-specific intercepts for concurrent and subsequent treatment entry and dependence diagnosis.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Class 1 Estimate | |  | Class 2 Estimate | |  | Class 3 Estimate | |  | Wald tests | |
|  | OR/*b* | 95% CI |  | OR/*b* | 95% CI |  | OR/*b* | 95% CI |  | *X2* | *p* |
| Concurrent TX | 0.24 | [0.20, 0.29] |  | 0.12 | [0.06, 0.23] |  | 0.18 | [0.13, 0.26] |  | 5.5 | .064 |
| Concurrent DEP | 0.46 | [0.39, 0.55] |  | 0.25 | [0.14, 0.45] |  | 0.65 | [0.49, 0.87] |  | 9.1 | .010 |
| Prospective TX | -0.40 | [-1.19, 0.39] |  | -0.60 | [-1.59, 0.39] |  | 0.19 | [-0.58, 0.96] |  | 13.8 | <.001 |
| Prospective DEP | -0.17 | [-0.95, 0.60] |  | -1.16 | [-2.16, -0.15] |  | 0.19 | [-0.59, 0.97] |  | 14.5 | <.001 |

Note. Concurrent TX/DEP match the timeframe of assessment of poly-victimization classes (Age 14-17 years). Prospective TX/DEP exclusively examine the timeframe following assessment of poly-victimization classes (Age 18-24 years), and exclude those who had experienced treatment entry or substance use dependence prior to this timeframe. The Wald test examines whether estimates are significantly different from each other based on change in model fit; a significant test indicates that model fit is improved by estimating the intercepts independently for each class, and thus, that these intercepts are significantly different from each other.

Supplementary Table 3. Overall effects of PTSD and MDD on concurrent and subsequent treatment entry and dependence diagnosis (Matching Models 2 and 3).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Overall estimate | |  | Wald tests for class dependence | |
|  |  | OR/HR | 95% CI |  | *X2* | *p* |
| PTSD | Concurrent TX | 1.81 | [1.04, 3.14] |  | 0.75 | .686 |
|  | Concurrent DEP | 1.27 | [0.71, 2.27] |  | 0.90 | .638 |
|  | Prospective TX | 1.32 | [0.75, 2.34] |  | 0.04 | .981 |
|  | Prospective DEP | 0.60 | [0.29, 1.21] |  | 0.03 | .986 |
| MDD | Concurrent TX | 1.63 | [0.96, 2.78] |  | 0.09 | .959 |
|  | Concurrent DEP | 1.04 | [0.56, 1.93] |  | 1.82 | .403 |
|  | Prospective TX | 2.02 | [1.17, 3.49] |  | 0.55 | .760 |
|  | Prospective DEP | 0.61 | [0.28, 1.33] |  | 0.06 | .973 |

Note. Concurrent TX/DEP match the timeframe of assessment of poly-victimization classes (Age 14-17 years). Prospective TX/DEP exclusively examine the timeframe following assessment of poly-victimization classes (Age 18-24 years), and exclude those who had experienced treatment entry or substance use dependence prior to this timeframe. The Wald test examines whether estimating the parameter reflecting the effect of PTSD/MDD on outcomes independently in each class, improved model fit; in effect, whether the effect of PTSD/MDD was significantly modified by class membership.