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| **Supplement 1.** Comparisons of log-likelihood\* (LL), Bayesian Information Criterion (BIC), and entropy between models with fixed numbers of latent profiles (n=1063). |
|  | **Wave 1** | **Wave 2** |
| **Profiles** | 2 | 3 | 4 | 5 | 2 | 3 | 4 | 5 |
| Log-likelihood | 40699 | 40393 | 39133 | 39075 | 32475 | 32393 | 30331 | 29642 |
| LL Difference | - | 306 | **1260** | 58 | - | 82 | **2062** | 689 |
| BIC | 91733 | 91589 | 89340 | 89192 | 75285 | 75489 | 71736 | 70728 |
| Entropy | 0.97 | 0.97 | 0.96 | 0.95 | 0.99 | 0.95 | 0.99 | 0.99 |
| \*Significant difference in log likelihood (p<.05) compared to the model with n-1 profiles using the Vu-Lo-Mendel-Rubin adjusted likelihood ratio test bolded.Models using more than 5 profiles resulted in either failure to fit or no notable improvement in fit. |

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| **Supplement 2.** Proportions of individual 12-month substance use across latent statuses (n=1063). |
|  | Marijuana  | Inhaled Nitrates | Crack | Cocaine | Heroin | Metham-phetamines | Illicit Prescription Drugs | Other Substance Use |
| **High-Risk Status (A)** | 51.6 | 5.5 | 22.0 | 12.3 | 3.8 | 6.1 | 3.8 | 2.5 |
| **High-Risk Status (B)** | 53.7 | 11.6 | 18.2 | 19.0 | 3.3 | 6.4 | 4.1 | 5.8 |
| **High-Risk Status (C)** | 56.0 | 12.6 | 16.5 | 14.8 | 2.2 | 6.5 | 5.0 | 7.7 |
| **Low-Risk Status** | 42.2 | 5.1 | 11.5 | 8.7 | 1.7 | 4.9 | 3.5 | 2.2 |

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| **Supplement 3.** Median syndemic indicators across baseline and 12 month latent profiles (n=1063). |
|  | Low-Risk Profile | High-Risk Profile (A) | High-Risk Profile (B) | High-Risk Profile (C) |
|  | Baseline Profile | 6- month Profile | Baseline Profile | 6- month Profile | Baseline Profile | 6- month Profile | Baseline Profile | 6- month Profile |
| Sexuality-targeted Violence | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 |
| Race-targeted Violence | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| Trauma | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Internalized Homophobia | 7 | 7 | 9 | 9 | 5 | 6 | 5 | 6 |
| Intimate Partner Violence | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Depression | 12 | 12 | 16 | 18 | 13 | 15 | 12 | 12 |

**Supplement 4.** Conceptual diagram of syndemic factors, latent status, social support, and substance use.



Dotted arrow indicates moderation. All solid lines indicate association.