While the high rate of comorbidity among substance use disorders is well described, its detailed etiology is mostly unknown. Prior work by Vrieze et. al (2012) explored the longitudinal influence of environmental and genetic factors on a common factor underlying dependence symptom counts for tobacco, alcohol, and cannabis in twins. They found that a general factor had the greatest influence on substance dependence symptoms in adolescence but decreased over time with substance-specific influences increasing in adulthood. We set forth to replicate and expand their analysis by incorporating other substances along with alcohol, tobacco, and cannabis. We used data from the Colorado longitudinal twin studies (N=2,884). The samples were assessed at three waves with mean ages of 14.99, 20.05, and 25.51 respectively. Analyses utilized transformed (ordinal) DSM dependence counts for tobacco, alcohol and cannabis. Dependence symptom counts for other substances were pooled and the maximum dependence count was used. Consistent with Vrieze et al., a phenotypic confirmatory factor analysis (CFA) indicated that the common latent factor shows the highest common loadings for all substances at wave 1 (adolescence). Common factor loadings decrease...
and specific loadings increase overtime. Analyses are being extended to explore sex-limitation and common pathway ACE models to investigate the genetic and environmental factor structure over time.


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