

## Can family cohesion buffer genetic risk for alcohol use trajectories?

Kristy L. Soloski, Mazie Zielinski, Natira Staats, Kelsie Krupitzer, Lauren Creger

Texas Tech University, Department of Community, Family, and Addiction Sciences, Marriage and Family Therapy Program

Estimates of the genetic and environmental effects on substance use behaviors vary. Research has identified factors that exacerbate genetic risk, but not as commonly has the effect of protective factors on genetic expression been examined. Understanding of gene-environment influences on behavioral outcomes has the potential to impact mental health treatment strategies through its effect on epidemiology and perceptions of potential for change. Using the Add Health dataset ( $n = 9,395$ ), we examined how environmental protective factors (i.e., family cohesion) interact with genetic plasticity to predict a trajectory of binge drinking from age 13 to 31 using an accelerated longitudinal latent growth curve model. Model fit was good,  $\chi^2(7) = 56.21$ ,  $p < .001$ , AIC = 162897.14, BIC = 163290.28. The greater genetic plasticity the more frequently adolescents were binge drinking ( $\beta = .73$ ,  $p < .001$ ), and the greater family cohesion the less frequently adolescents were binge drinking ( $\beta = -.28$ ,  $p < .001$ ). Genetic plasticity and family cohesion had a significant interaction in predicting both binge drinking in adolescence and the trajectory into young adulthood. When family cohesion was high there was little difference in binge drinking frequencies across varying levels of genetic plasticity. When family cohesion was low and there was greater genetic plasticity binge drinking was the greatest, but when family cohesion was low and genetic plasticity was also low binge drinking was the least frequent in adolescence. Genetic plasticity, family cohesion, and the gene-environment interaction similarly predicted the trajectory of binge drinking. This seems to indicate that regardless of the genetic risk an individual may have for substance using behaviors, their family experience matters in determining whether that risk is activated or not. Early intervention efforts targeting protective factors could work to reduce the innate risk of adolescent binge drinking and long-term binge drinking behaviors.