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Interactive Effects Between Polygenic Risk and Social Support in Relation to Alcohol Dependence Symptoms Among European American and African American Adults

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Genetic and environmental factors interact (i.e., GXE) in predicting alcohol use outcomes. However, the majority of GXE research has focused on European Americans (EA). There are differences in rates of alcohol use, related social and health consequence, and environmental, cultural, and genetic factors, between EAs and African Americans (AA), suggesting that GXE processes surrounding alcohol use outcomes may vary across groups. Using data from EA (n = 4,049) and AA (n = 1,329) adults in the Collaborative Study on Genetics of Alcoholism, we examined whether polygenic risk for alcohol consumption interacts with social support in predicting alcohol dependence symptoms (ADSX). Genome-wide polygenic scores (GPS) were constructed using estimates from a genome-wide association study of alcohol consumption in the UK Biobank sample (Clarke et al., 2017). Results indicated that higher GPS were associated with more ADSX for both EAs ($p < .001$) and AAs ($p < .05$). Family and friend support were associated with fewer ADSX for both EAs and AAs (all $p < .01$). The association between GPS and ADSX was weaker among those who reported higher levels of friend support for EAs ($p < .05$), but was stronger among those who reported higher family and friend support for AAs ($p < .01$). Findings suggest different patterns of GXE between EAs and AAs and highlight the importance of studying GXE across diverse populations. Next we will use ancestry-sensitive GPS approach to characterize genetic risk for AAs and examine mechanisms that may account for different patterns of GXE across racial/ethnic groups.