

NAME OF PRESENTING AUTHOR: Brianna Bucknor

EMAIL ADDRESS OF PRESENTING AUTHOR: bucknor2@illinois.edu

LOCATION OF PRESENTING AUTHOR: America (North)

TIME ZONE OF PRESENTING AUTHOR: USA Central

TYPE OF SUBMISSION: Oral Poster

MEMBER STATUS: Associate

ELIGIBLE FOR THOMPSON AWARD: Yes

ELIGIBLE FOR ROWEWARD: No

TITLE: Current Polygenic Scores Fail to Capture Resilience

FULL AUTHOR LIST: Brianna A. Bucknor¹, Jaime Derringer¹

AFFILIATIONS: ¹Department of Psychology, University of Illinois at Urbana Champaign, Champaign, Illinois, USA

KEYWORDS: Resilience; Psychopathology; Polygenic Scores; Stress; Negative Affect

ABSTRACT:

Stress is a well-known risk factor for the development of psychopathology. However, not everyone who is exposed to stress responds in the same way. Individual differences in resilience to stress reflect dynamic interpersonal and intrapersonal factors. Although resilience has been identified to be moderately heritable, little is known about the genetic variants that may explain this heritability. While there has not yet been a robust genome-wide association study (GWAS) of resilience, existing GWAS of related phenotypes (proxies; e.g., post-traumatic stress disorder), may provide a starting point for developing our understanding of the molecular genetic underpinnings of the observed heritability of resilience. In the HRS dataset, we examined the extent to which 32 polygenic scores (PGS) explained the variance in resilience. PGS were precomputed separately within HRS's pre-defined subsamples of African Americans (N= 1,518) and European Americans (N = 7,962). We then compared the utility of these existing genetic predictors to commonly examined demographic and psychological characteristics, such as socioeconomic status and social support. We found that the psychological correlates consistently and substantially outperformed existing polygenic scores. While psychological variables yielded substantial correlations with resilience, only four of the 32 polygenic scores reached significance but with relatively small effects. Our results indicate that existing polygenic scores are not sufficient to inform our understanding of

resilience, nor would they be suitable predictors of individual differences in resilience outcomes. We conclude that a large-scale GWAS of resilience will be necessary to identify the specific genetics underlying the observed heritability of resilience.

GRANT SUPPORT: HRS is sponsored by the National Institute on Aging (NIA U01AG009740) and is conducted by researchers at the University of Michigan. All data used in this project are publicly available at <https://hrs.isr.umich.edu>.

