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TITLE: Systematic review: How the ADHD polygenic risk scores add to our understanding of ADHD and other traits

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ABSTRACT:

The latest genome-wide association study (GWAS) offers the clearest picture yet of the common genetic architecture underlying ADHD. As such, a fast-growing literature on how ADHD polygenic risk impacts child development is emerging. Our systematic review provides a comprehensive overview of studies using the ADHD polygenic risk score (PRS) to predict ADHD and other traits. Pubmed, Embase and PsychoInfo were systematically searched. A quality assessment of all studies was conducted. Studies were excluded when a) the predictor was not the latest ADHD PRS; b) the PRS was not based on genome-wide results; or c) the study was a review. Initially, 138 studies were retrieved [dd. Feb 22nd, 2020] in our initial search resulting in 35 eligible studies; a second search [dd June 6th 2020) retrieved a further 8 studies, of which four were eligible. Thus, we identified 39 studies that met our inclusion criteria. The quality assessment, conducted by two of the authors, revealed good to excellent quality for the majority of studies. There was a diverse array of outcome measures including clinical ADHD status, ADHD symptoms, co-occurring psychopathology and bullying, addictive behaviors, executive functioning and intelligence, brain measurements, DNA methylation and study participation, of which the majority showed significant association with the ADHD PRS. In conclusion, a wealth of new literature on the ADHD PRS has recently emerged. Our review demonstrates that many studies of high quality show that polygenic risk underlying ADHD predicts a range of phenotypes.

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