

A SYSTEMATIC REVIEW AND META-ANALYSIS OF RESEARCH USING THE AUTISM POLYGENIC SCORE

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Introduction

Powerful GWAS by Grove et al. (2019) on 18,381 autism cases and 27,969 controls identified 5 independent loci and a SNP heritability of 0.12. This allowed for the calculation of robust polygenic scores for autism.

These polygenic scores have been used in a wealth of studies examining associations with a broad range of outcome variables.

Aim

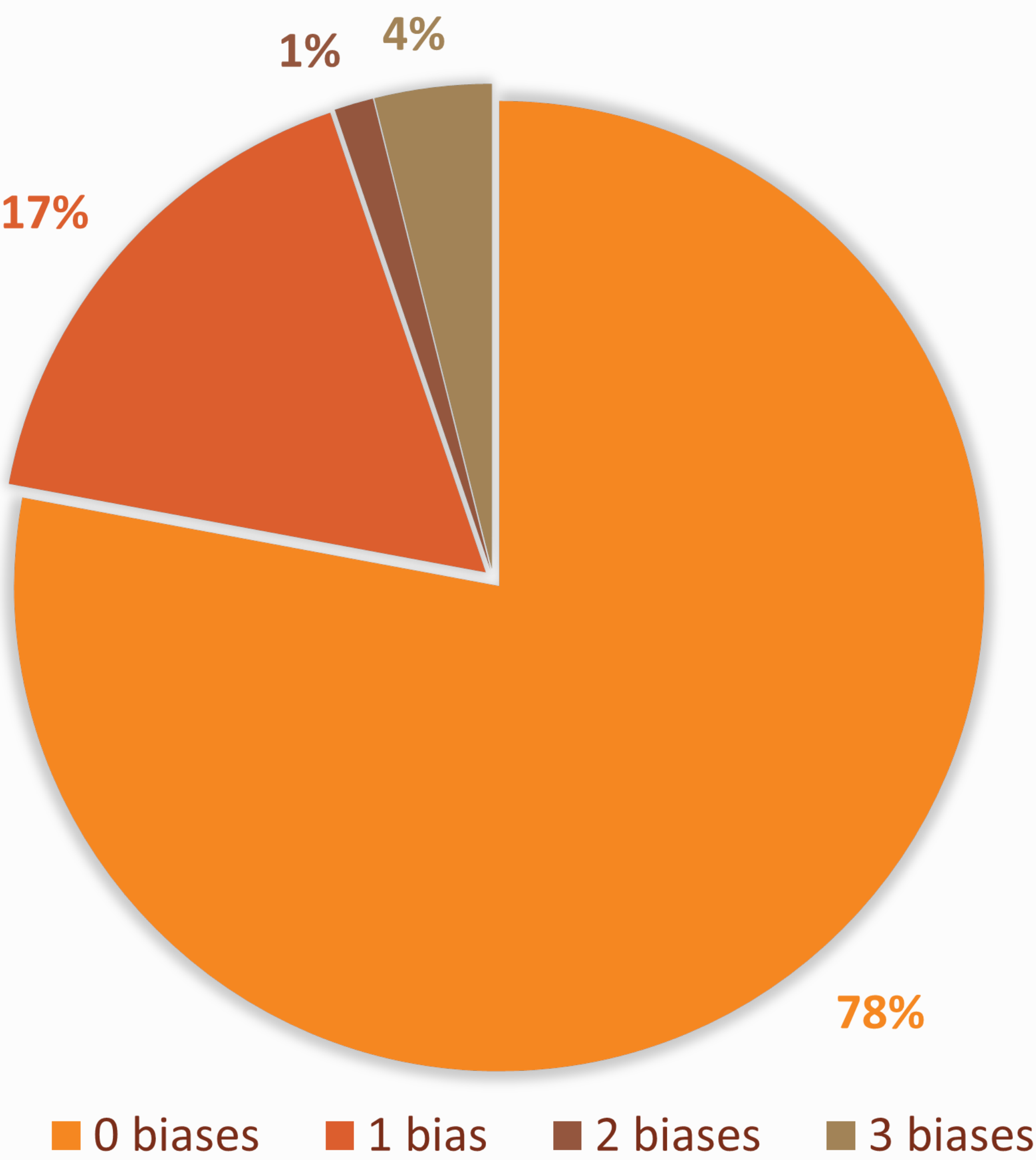
To investigate if the autism polygenic score is associated with autism diagnostic status, autistic traits, and behavioral and neurobiological variables in independent clinical and population samples

Methods

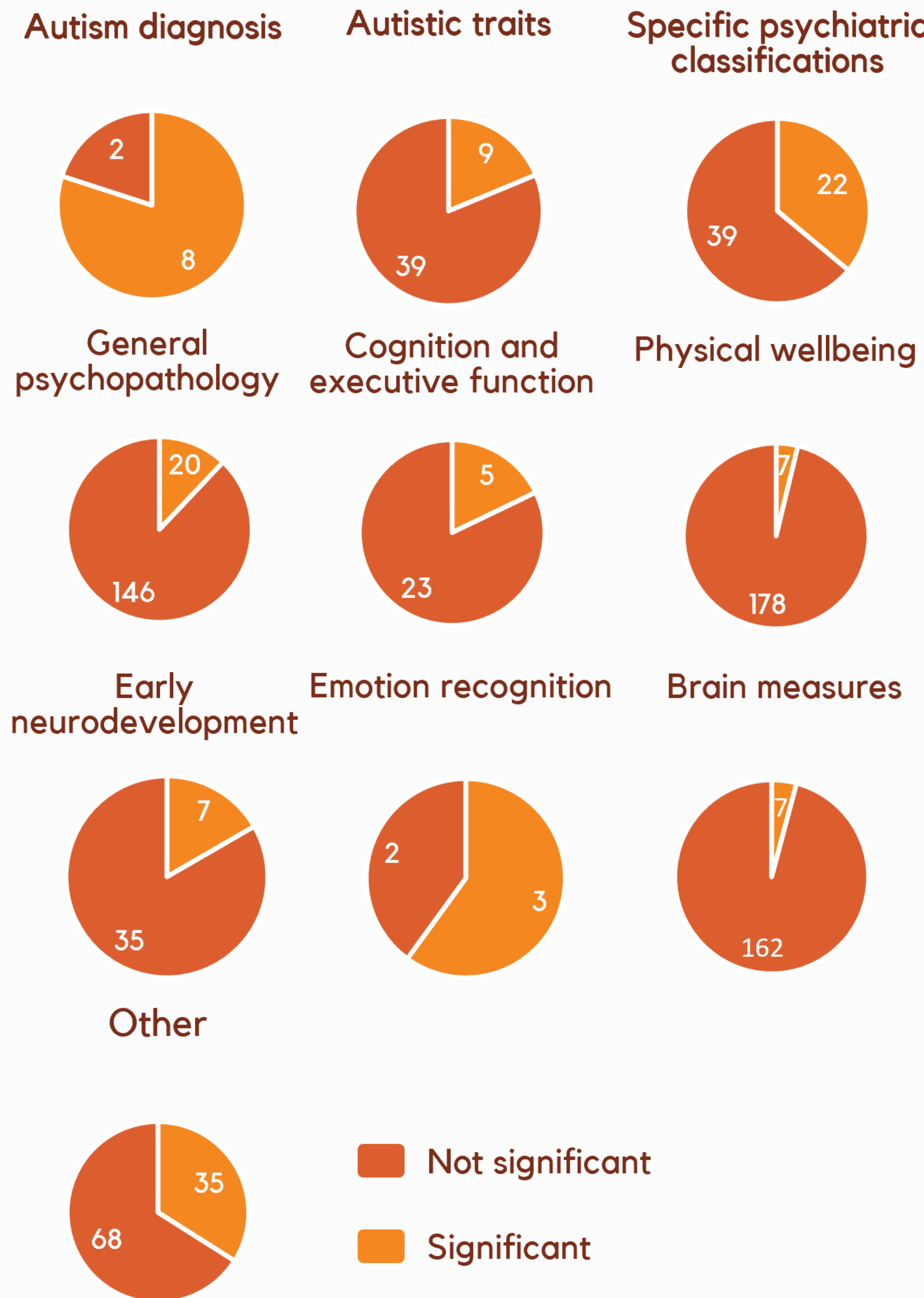
- Preregistration on PROSPERO
- Following PRISMA guidelines
- Search in February 2022 and 2023
- Quality assessment (Hayden et al. 2006/2013)
- Systematic review
- Random effects meta-analysis per outcome category



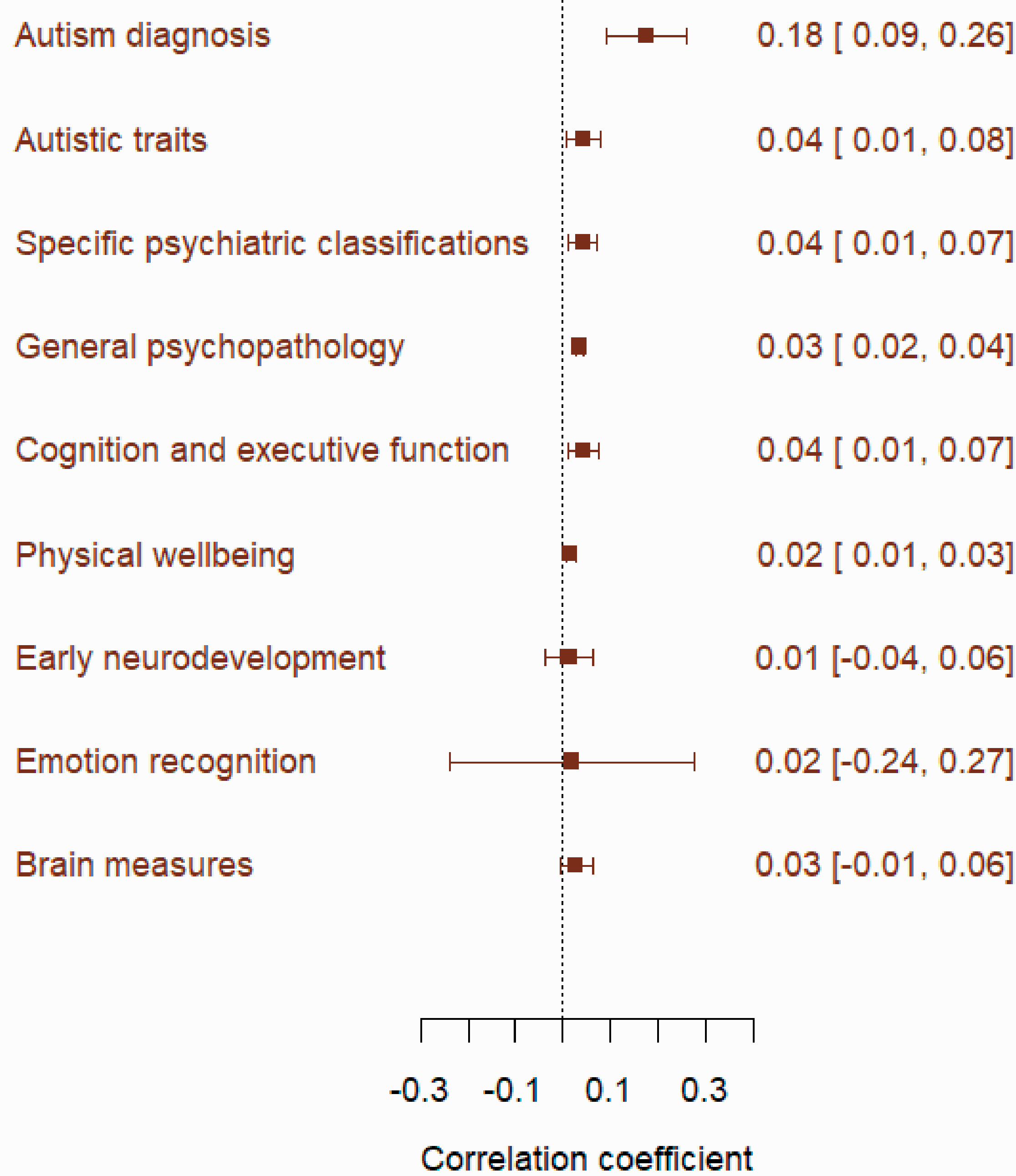
Quality assessment - percentage of studies with bias(es)



Systematic review - number of significantly associated variables per category



Meta-analysis



Discussion

The autism polygenic score has been used in a wealth of studies to assess its relation with a myriad of phenotypes, but findings are inconsistent. Based on the meta-analysis, the autism PGS is most strongly associated with autism diagnostic status. We also find significant associations with autistic traits, other specific psychiatric classifications, general psychopathology, cognition and executive function and physical well-being.

However, effect sizes of significant associations tend to be small. Therefore we argue that in its current state, autism polygenic scores can only be used for research purposes and cannot be applied in clinical settings.

Scan the QR code for more information

