

Age and sex moderation of genetic and environmental influences on a harmonized measure of financial strain: IGEMS

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One of the primary challenges facing groups that aim to combine data across existing twin studies is the harmonization of variables. Standard meta-analysis of effect sizes does not capture variability created by gene-environment interplay unless it is specifically modeled in the individual studies. To represent these individual differences, pooling data via harmonization is often required. Nine of the 15 twin studies of adult development and aging that are part of the IGEMS consortium included items assessing perceived financial strain, representing 10,756 individuals. Four different items assessed perceptions of financial strain: extent to which money covers needs (8 studies with 8769 participants), difficulty in paying monthly bills (5 studies with 5876 participants), economic situation compared to others (4 studies with 3398 participants), and whether there is money for extras (2 studies with 2986 participants). A factor model was used to create a harmonized measure of financial strain across studies and items: the best fitting model equated loadings across studies for similar items. The sample was 55% women, included 3185 MZ twins and 5228 DZ twins, and age ranged from 24 to 98. Twin analysis of genetic and environmental variance incorporating age as a continuous moderator and sex as a dichotomous moderator indicated both age and sex differences in the etiology of the harmonized financial strain score. As predicted by the diathesis-stress model, increased financial strain resulted in increased genetic variance in subjective health for women. In contrast, increased financial strain was associated with increased shared environmental variance for men, likely reflecting increasing salience of shared cultural conceptions of “good health”.