

Interplay of a country's income inequality in childhood and adult depressive symptoms

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The purpose of the study was to test the relationship between inequality of income distribution within one's country during childhood and depressive symptoms in adulthood, using both level of depressive symptom scores and the relative contribution of genes and environment to depressive symptom scores. Inequality of income distribution was operationalized as the percent of the nation's income controlled by the top 1% of the population when the individual was age 10. Our hypothesis was that the level of inequality to which a person was exposed during key development growth periods would moderate genetic influences on depressive symptoms in adulthood. Participants included 32,502 individuals from 13 IGEMS consortium twin studies in Denmark, Sweden, Finland, Australia, and the U.S. who completed a self-reported assessment of depressive symptoms as an adult. In pooled analyses, controlling for sex, age, and age-squared at which the depressive symptoms scale was completed, higher depressive symptom scores were observed in those who grew up in a society with a higher Top 1% index, that is, where income inequality was greater. Using a modified twin correlation model, we found that raw variance in depressive symptom scores was markedly higher for those who grew up in more unequal time-periods. Furthermore, twin correlations were moderated by inequality, with faster divergence of DZ similarity across the Top 1% compared to MZ similarity. This pattern implies increasing genetic effects with greater inequality, consistent with a diathesis-stress model. At lower inequality, there was a smaller relative contribution of genetic influences to depressive symptom scores, and a greater relative contribution of shared environment. At higher inequality, there was a larger relative contribution of genetic influences to depressive symptom scores, and a minimal contribution of shared environment. In summary, growing up in a more unequal society—where families experience wage stagnation, spiraling healthcare costs, and a sense of disenfranchisement and social isolation—potentiates genetic risk for depressive symptoms as an adult. Those growing up in a more equal society are more protected in adulthood from depressive symptoms.

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