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Stressful life events increase risk of depression: A population-based twin study

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ABSTRACT: Previous studies have found that stressful life events (SLEs) are associated with increased risk of adult depression. However, many studies are observational in nature and limited by methodological issues, such as potential confounding by genetic factors. Genetically informative studies, such as the co-twin control design, can strengthen causal inference in observational research. The co-twin control design involves comparing patterns of associations in the full sample and within dizygotic (DZ) and monozygotic twins (MZ). Discrete-time survival analysis has several benefits and multilevel survival analysis can incorporate frailty terms (random effects) to estimate the components of the biometric model. In the current study, we investigated associations between SLEs and depression risk in a population-based twin sample (N = 2299) with a co-twin control design. Associations were modelled using discrete-time survival analysis with biometric frailty terms. SLE occurrence was associated with increased depression risk. Co-twin control analyses indicated that this association was at least in part due to causal influence of SLE exposure on depression risk for event occurrence across all SLEs and of violent SLEs. Stronger within-pair estimates for economic SLEs compared with the full sample association could have resulted if the full sample association was suppressed or if within-pair estimates were inflated. If the former occurred, economic SLEs may represent particularly important risk factors for depression. A minor proportion of the total genetic risk of depression reflected genetic effects related to SLEs. Our findings have implications for future research on SLEs.

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