

## STUDY - INTERNALIZING AND NEURODEVELOPMENTAL PROBLEMS IN YOUNG PEOPLE: EDUCATIONAL OUTCOMES IN A LARGE POPULATION-BASED GROUP OF TWINS

Adolescent internalizing problems such as anxiety and depression have been associated with subsequent educational underachievement. However, it has not been investigated if the association is accounted for by NDDs. This study is the first to describe the relationship between internalizing problems at age 15 and educational outcomes in later adolescence while controlling for a wide range of NDDs in childhood, and applying a genetically sensitive design. We used the nation-wide population-based Child and Adolescent Twin Study in Sweden, comprising 4997 fifteen-year-old Swedish twins born between 1994 and 1998. Internalizing problems and NDDs were measured with parental reports. Educational outcomes were merit rating and upper secondary education eligibility, retrieved from the Swedish Education Register. Internalizing problems at age 15 were found to be negatively associated with educational outcomes in later adolescence. Additive genetics accounted for 89% of the covariation between internalizing problems and merit rating, out of which roughly half were unique genetic effects of internalizing problems and the remaining half due to NDDs. In conclusion, internalizing problems form an important risk factor for subsequent educational underachievement, going beyond the risk conferred by childhood NDDs. Interventions targeted towards educational achievement in adolescence should consider both NDDs and internalizing problems, i.e., it is not solely NDDs or internalizing problems that explain educational underachievement since both uniquely add to educational underachievement.