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TITLE: Sleep quality and psychological distress: a sex-limitation twin study

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ABSTRACT: Further research is needed to understand why anxiety/depression symptoms so commonly co-occur with poor sleep quality. As compared to men, women usually report more sleep problems, such as insomnia and poorer sleep quality (Zhang & Wing, 2006). A similar picture occurs for anxiety and mood disorders, where women usually have a higher prevalence of these disorders as compared to men (Albert, 2015). Further research is needed to investigate the genetic and environmental influences on this relationship taking in to account possible sex differences. The current sample comprised 2150 participants from the Murcia Twin Registry. The sample was 55.7% female and the mean age was 53.7 (SD=7.4). Sleep quality was measured using the Pittsburgh Sleep Quality Index and psychological distress using the “anxiety/depression” dimension of the EuroQol-5D questionnaire. A joint (means/threshold) sex-limitation model was fitted to

test for possible sex differences. The best fitting model was provided by a non-scalar AE model where estimates for psychological distress were similar for males (A=51%; 95%CI:33-75%;E=49%; 95%CI:24-67%) and females (A=50%; 95%CI:34-69%;E=50%; 95%CI:31-66%). However, different estimates were found for males 26% (95%CI:8-43%) and females 40% (95%CI: 28-50%) regarding sleep quality. A significant genetic correlation between sleep quality and psychological distress was also found, but only for females ($r_A=0.59$; 95%CI: 0.36,0.84). Our results confirm the strong genetic association between sleep quality and psychological distress. Although, our results point to a differential association between the sexes, future studies with greater statistical power are required to confirm these findings.

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