# Tables

Table 1 Descriptive statistics and sex differences in main variables

| | **Male** | **Female** | **Total sample** | **t** | **df** | **p** | **Cohen's d** |
|---|---|---|---|---|---|---|---|
| Sample (N / %) | 584 (38.4) | 937 (61.6) | 1521 (100) | / | / | / | / |
| Participants with at least one apnea symptom (N / %) | 152 (26.3) | 231 (25) | 383 (25.5) | / | / | 0.566 | / |
| Age (M /SD) | 20.40 (1.8) | 20.30 (1.7) | 20.30 (1.8) | / | / | / | / |
| Depression symptoms (M /SD) | 5.62 (5.3) | 6.98 (5.9) | 6.46 (5.7) | 4.6 | 1327 | <0.001 | 0.24 |
| Anxiety symptoms (M /SD) | 21.11 (12.8) | 27.55 (15.6) | 25.08 (14.9) | 8.8 | 1402 | <0.001 | 0.46 |
| Externalizing symptoms (M /SD) | 7.34 (6.4) | 5.96 (5.00) | 6.49 (5.6) | 4.4 | 982 | <0.001 | 0.24 |

Note. df: degrees of freedom; M/SD: mean/standard deviation; p: p-value; t: t-student

Apnea symptoms were measured by 3 single questions referring to principal symptoms of apnea in the past month, ranging from 0="no sign" to 4=" always". Those participants who responded to all items as "never" or "do not know" were not classified as having at least one apnea symptom. Depression, anxiety and externalizing behaviors were measured using RCADS (Revised Child Anxiety and Depression Scale), SMFQ (Short Mood and Feelings Questionnaire) items from the scales of rule breaking and aggression of the adult self-report form, respectively. Higher scores represent increased levels of depression, anxiety and externalizing behaviors.

Table 2: Univariate analyses

| | Model (comparison) | A | D | E | Twin effect | df | -2LL | AIC | P |
|---|---|---|---|---|---|---|---|---|---|
| | | 95% CI | | | | | | | |
| Apnea symptoms | | | | | | | | | |
| | I | 0 (0,0) | 0.51 (0,0.70) | 0.49 (0.30,0.72) | 0 (0,0) | 1495 | 1687.70 | -1302.30 | |
| | II (I) | 0 (0,0.44) | 0.51 (0,0.70) | 0.49 (0.32,0.72) | / | 1496 | 1687.70 | -1304.30 | 0.99 |
| | **III (II)** | **0.40 (0.19,0.59)** | / | **0.60 (0.41,0.81)** | / | **1497** | **1691,41** | **-1302.59** | **0.05** |
| | IV(III) | / | / | 1 (1,1) | / | 1498 | 1704.80 | -1291.20 | <0.001 |
| Externalizing | | | | | | | | | |
| | I | 0 (0,0.34) | 0.42 (0.09,0.57) | 0.53 (0.43,0.65) | 0.05(0,0.19) | 1471 | 4471.24 | 1529.24 | |
| | **II (I)** | **0 (0,0.36)** | **0.48 (0.07,0.57)** | **0.52 (0.43,0.64)** | / | **1472** | **4471.69** | **1527.68.** | **0.50** |
| | III (II) | 0.40 (0.29,0.50) | / | 0.60 (0.50,0.71) | / | 1473 | 4476.87 | 1530.67 | 0.02 |
| | IV(III) | / | / | 1 (1,1) | / | 1474 | 4521.26 | 1573.26 | <0.001 |
| Depression | | | | | | | | | |
| | I | 0.06 (0,0.45) | 0.37 (0, 0.54) | 0.55 (0.46,0.67) | 0.02 (0,0.17) | 1505 | 4808.52 | 1798.52 | |
| | II (I) | 0.09 (0,0.45) | 0.35 (0,0.54) | 0.55 (0.46,0.67) | / | 1506 | 4808.55 | 1796.55 | 0.87 |
| | **III (II)** | **0.40 (0.29,0.49)** | / | **0.60 (0.51,0.71)** | / | **1507** | **4811.36** | **1797.36** | **0.09** |
| | IV(III) | / | / | 1 (1,1) | / | 1508 | 4859.61 | 1843.60 | <0.001 |
| Anxiety | | | | | | | | | |
| | I | 0.34 (0,0.53) | 0.12 (0,0.52) | 0.53 (0.44,0.64) | 0 (0,0.21) | 1508 | 3906.35 | 890.35 | |
| | II (I) | 0.35 (0,0.53) | 0.12 (0,0.52) | 0.53 (0.44,0.64) | / | 1509 | 3906.35 | 888.35 | 0.96 |
| | **III (II)** | **0.45 (0.36,0.54)** | / | **0.55 (0.46,0.64)** | / | **1510** | **3906.69** | **886.69** | **0.56** |
| | IV(III) | / | / | 1 (1,1) | / | 1511 | 3979.30 | 957.30 | <0.001 |

Note. A, additive genetic influence; D, dominant genetic influence E, non-shared environmental influence; -2LL, negative 2 log likelihood; AIC, Akaike's information criterion; CI, confidence interval; df, degrees of freedom; P-value, significance value of the likelihood-ratio chi-square test; rDZ, dizygotic correlations; rMZ, monozygotic correlations. TW, twin effect component on the variance. Bold text indicates best fitting models.

Model legend: I: ADE+TW; II: ADE; III: AE; IV: E

Monozygotic intrapair correlations were 0.53, 0.45, 0.44 and 0.49 for apnea symptoms, externalising, depression and anxiety respectively

Dizygotic intrapair correlations were 0.05, 0.12, 0.14 and 0.20 for apnea symptoms, externalising, depression and anxiety respectively

Table 3: Correlations from the multivariate analysis

| | | | | Proportion of the phenotypic correlation due to | |
|---|---|---|---|---|---|
| Phenotypes | rG | rE | rPh | Genetic factors | Environmental factors |
| | | 95% CI | | | % |
| **AE** | | | | | |
| Apnea-Depression | 0.60 (0.32,0.92) | 0.02 (-0.16,0.19) | 0.25 (0.18,0.31) | 95 | 5 |
| Apnea-Anxiety | 0.24 (-0.02, 0.51) | 0.20 (0.02, 0.37) | 0.22 (0.15,0.29) | 47 | 53 |
| Apnea-Externalizing | 0.42 (0.13,0.72) | 0.20 (0.02, 0.38) | 0.29 (0.22,0.35) | 57 | 43 |
| Depression-Anxiety | 0.80 (0.69,0.89) | 0.49 (0.40,0.57) | 0.62 (0.59,0.65) | 54 | 46 |
| Externalizing-Depression | 0.58 (0.41,0.72) | 0.41 (0.30, 0.50) | 0.47 (0.43,0.50) | 48 | 52 |
| Externalizing-Anxiety | 0.39 (0.22,0.55) | 0.24 (0.13,0.35) | 0.30 (0.25,0.35) | 55 | 45 |

Note. CI: confidence interval; rE: environmental correlation; rG: genetic correlation rPh = phenotypic correlation