**Table S1.**

*Comparisons of Intercepts and Slopes of Depressive and Anxiety Symptoms Across Subgroups of Relationship Qualities: Means (Standard Errors)*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Father estrangement | Low quality | Moderately low quality | Moderately high quality | High quality |
| *n* (%) | 95 (2.48%) | 214 (5.58%) | 1318 (34.38%) | 1465 (38.21%) | 742 (19.35%) |
| Depressive symptoms (Grade 10) | **2.30c (0.21)** | **2.46d (0.19)**  | **2.24c (0.15)**  | **2.12b (0.17)**  | **1.85a (0.16)**  |
| Depressive symptoms (Grade 12) | **2.33c,d (0.10)** | **2.36d (0.23)**  | **2.18c (0.11)**  | **2.09b (0.16)**  | **1.98a (0.11)**  |
| Depressive symptoms (Slope) | 0.01a,b (0.01) | -0.05a (0.05)  | **-0.03a (0.03)**  | -0.01a (0.04)  | **0.07b (0.01)**  |
| Anxiety symptoms (Grade 10) | **1.94b,c (0.08)** | **2.20d (0.07)**  | **2.01c (0.06)**  | **1.87b (0.08)**  | **1.76a (0.09)**  |
| Anxiety symptoms (Grade 12) | **2.04c,d (0.08)** | **2.08d (0.07)**  | **1.93c (0.08)**  | **1.84b (0.09)**  | **1.78a (0.09)**  |
| Anxiety symptoms (Slope) | 0.05b (0.04) | **-0.06a (0.00)**  | **-0.04a (0.01)**  | -0.01b (0.01)  | 0.01b (0.00)  |

*Note*. Bold coefficients indicate significance at *p* < .05 (two‐tailed). Means in the same row with different subscripts (i.e., a, b, c, d) differ significantly at the .05 level.

**Table S2.**

*Within-Group Comparisons of Adolescent Relationship Qualities: Means (Standard Deviations)*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variables | Relationship quality with father |  | Relationship quality with mother |  | Relationship quality with peers |  | Relationship quality with teacher |  | *F* |
| *M* | *SD* |  | *M* | *SD* |  | *M* | *SD* |  | *M* | *SD* |  |
| Father estrangement (*n* = 95) | -2.23a | 0.53 |  |  0.35c | 0.69 |  |  0.09b,c | 1.01 |  | -0.10b | 0.98 |  | 231.01\*\*\* |
| Low quality (*n* = 214) | -1.93b | 0.32 |  | -2.23a | 0.63 |  | -0.77c | 1.02 |  | -0.81c | 0.96 |  | 218.40\*\*\* |
| Moderately low quality (*n* = 1,318) | -0.61b | 0.44 |  | -0.76a | 0.40 |  | -0.35c | 0.86 |  | -0.35c | 0.81 |  | 139.09\*\*\* |
| Moderately high quality (*n* = 1,465) |  0.33b | 0.43 |  |  0.36b | 0.40 |  |  0.11a | 0.92 |  |  0.12a | 0.92 |  | 54.02\*\*\* |
| High quality (*n* = 742) |  1.28c | 0.37 |  |  1.24b | 0.32 |  |  0.63a | 0.97 |  |  0.64a | 1.04 |  | 187.26\*\*\* |

*Note*. Means in the same row with different subscripts (i.e., a, b, c, d) differ significantly at the .05 level. \*\*\**p <* .001.

**Table S3.**

*Comparisons of the Intercepts and Slopes of Internalizing Problems across Relationship Qualities Profiles*

|  |  |  |  |
| --- | --- | --- | --- |
| Reference | Comparison | 　 | Internalizing problems |
|  | Intercept\_G10 |  | Intercept\_G12 |  | Slope |
| 　 | *B* (*SE*) | Cohen's *d* | 　 | *B* (*SE*) | Cohen's *d* | 　 |  *B* (*SE*) | Cohen's *d* |
| Father estrangement | Low quality |  |  **0.21 (0.06)** | 0.18 |  |  0.03 (0.08) | 0.02 |  | **-0.09 (0.04)** | 0.97 |
|  | Moderately low quality |  |  0.01 (0.06) | 0.00 |  | **-0.14 (0.07)** | 0.06 |  | **-0.08 (0.04)** | 0.31 |
|  | Moderately high quality |  | **-0.12 (0.06)** | 0.04 |  | **-0.23 (0.07)** | 0.07 |  | -0.05 (0.04) | 0.09 |
|  | High quality |  | **-0.31 (0.06)** | 0.15 |  | **-0.31 (0.07)** | 0.15 |  |  0.00 (0.04) | -- |
| Low quality | Moderately low quality |  |  **0.20 (0.04)** | 0.09 |  |  **0.17 (0.05)** | 0.07 |  | -0.02 (0.03) | 0.07 |
|  | Moderately high quality |  |  **0.33 (0.04)** | 0.11 |  |  **0.25 (0.05)** | 0.08 |  | -0.04 (0.38) | 0.09 |
|  | High quality |  |  **0.52 (0.04)** | 0.25 |  |  **0.34 (0.05)** | 0.15 |  | **-0.09 (0.03)** | 0.97 |
| Moderately low quality | Moderately high quality |  | **-0.13 (0.02)** | 0.04 |  | **-0.09 (0.02)** | 0.02 |  |  0.02 (0.01) | 0.05 |
|  | High quality |  | **-0.32 (0.02)** | 0.11 |  | **-0.18 (0.03)** | 0.06 |  |  **0.07 (0.01)** | 0.31 |
| Moderately high quality | High quality | 　 |  **0.19 (0.02)** | 0.05 | 　 |  **0.09 (0.03)** | 0.03 | 　 | **-0.05 (0.02)** | 0.09 |

*Note*. Bold coefficients indicate significance at *p* < .05 (two‐tailed). We conducted the comparisons via the “Model Constraint” command in Mplus with the BCH approach. The variances of slope of the “High quality” and “Father estrangement” subgroups were constrained to help the model converge.

**Table S4.**

*Comparisons of Trajectory Indicators Between Subgroups*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 　 | Convergent | 　 | Divergent | 　 | ∆χ2 |
| 　 | *M*  | *SE* | 　 | *M* | *SE* | 　 |
| Intercept (Grade 10) | **2.02**  | **0.11** |  | **2.12** | **0.11** |  | **4.804** |
| Intercept (Grade 12) | **1.99**  | **0.10** |  | **2.17** | **0.11** |  | **7.533** |
| Slope | **-0.01**  | **0.01** | 　 | 0.02 | 0.00 | 　 | 1.135 |

*Note.* Bold coefficients indicate significance at *p* < .05 (two‐tailed).

**Table S5.**

*Associations and Comparison between Relationship Qualities and Trajectory Indicators of Internalizing Problems in Subgroups*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Intercept (Grade 10) | 　 | Intercept (Grade 12) | 　 | Slope |
| Predictors | Convergent | Divergent | ∆χ2 | 　 | Convergent | Divergent | ∆χ2 | 　 | Convergent | Divergent | ∆χ2 |
| Relationship quality with father | **-0.07 (0.02)** | -0.06 (0.10) | 0.002 |  | **-0.07 (0.02)** | -0.22 (0.16) | 0.918 |  | -0.00 (0.01) | -0.08 (0.08) | 0.866 |
| Relationship quality with mother | -0.01 (0.02) | -0.04 (0.09) | 0.144 |  | 0.02 (0.02) | 0.08 (0.13) | 0.162 |  | 0.02 (0.01) | 0.06 (0.07) | 0.395 |
| Relationship quality with peers | **-0.15 (0.02)** | **-0.19 (0.09)** | 0.181 |  | **-0.10 (0.02)** | 0.07 (0.13) | 1.642 |  | **0.03 (0.01)** | 0.13 (0.07) | 2.238 |
| Relationship quality with teachers | **-0.23 (0.02)** | -0.16 (0.10) | 0.573 | 　 | **-0.13 (0.02)** | -0.10 (0.15) | 0.029 | 　 | **0.05 (0.01)** | 0.03 (0.08) | 0.086 |

*Note*. Bold coefficients indicate significance at *p* < .05 (two‐tailed). Mean differences tests are reported with chi-square test statistic resulting from pairwise Wald tests.