Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.
**eTable 1. Comparison of Current Study With TEDS Initial Sample and United Kingdom Census Characteristics**

| Returned data (N families) | % white | % Mothers with A-levels or higher | % Mother employed | % Father employed | % Female | % MZ |
|---------------------------|---------|----------------------------------|-------------------|------------------|---------|------|
| UK Census                 | -       | 93%                              | 32%               | 49%              | 89%     | -    |
| TEDS first contact        | 12593   | 92.90%                           | 35.50%            | 43.10%           | 91.60%  | 50.10%|
| Current study sample      | 5554    | 93.40%                           | 43.70%            | 47.30%           | 93.50%  | 53.10%|
| MFQ-Depression (Parent) 11-11yr | 5514   | 93.60%                           | 43.70%            | 47.20%           | 93.60%  | 53.10%|
| SPEQ-Cognitive Disorganisation (Child) 11-16yr | 3806   | 94.10%                           | 47.30%            | 47.40%           | 94.20%  | 55.80%|
| Total Difficulties (Child) 14-16yr | 2353   | 94.60%                           | 47.60%            | 47.20%           | 94.80%  | 56.30%|

Note. The Twins Early Development Study (TEDS). Twin births between 1994 and 1996 were identified through birth records by the United Kingdom Office for National Statistics. A total of 16,810 families responded to the office to acknowledge their interest in taking part in the TEDS study. A first contact with these families was made by TEDS team when the twins were about 18 months. A total of 12,593 families returned data for the first contact. eTable1 (above) shows the characteristics of these respondents. These characteristics mirror very closely the data from the U.K. census data. UK Census data from the 2000 General Household Survey is used rather than more recent data because they provide more appropriate comparisons for the TEDS Twins used in this sample who were born between 1994-1996. As such, TEDS families appear reasonably representative of the UK population. For the present study, twins who did not provide consent on first contact with TEDS, with unknown zygosity, or with severe medical or neurological problems were excluded from all analyses. The characteristics of the 5,554 families included in the current study sample are presented also in eTable 1 (above) and match closely with the first contact characteristics. The biggest difference is maternal education, with an 8.20 percentage point difference between mothers with A-levels of education or higher in the study sample as compared to the TEDS first contact sample. MZ = Monozygotic Twins. The three last rows present the characteristics for three subsamples, that is for the outcomes with the lowest N for our three longitudinal analyses (concurrent, two-year and five-year).
| Outcome | Timing | Variable Name | Total N (DZSS, MZ) | Phenotypic | DZ Differences | MZ Differences |
|---------|--------|---------------|-------------------|------------|----------------|----------------|
|         |        |               | est 1799, MZ) | B 95% CI | B 95% CI | B 95% CI |
| Total Difficulties | Concurrent | SDQ Total Difficulties (Parent) | 5525 (1799, 2010) | 0.233 (0.213, 0.253) | 0.181 (0.130, 0.232) | 0.043 (0.010, 0.075) |
|         |        | SDQ Total Difficulties (Teacher) | 3549 (1153,1313) | 0.207 (0.180, 0.235) | 0.108 (0.038, 0.182) | 0.088 (0.030, 0.144) |
|         |        | SDQ Total Difficulties (Child) | 5522 (1799, 2012) | 0.401 (0.382, 0.420) | 0.348 (0.294, 0.402) | 0.241 (0.189, 0.294) |
|         | Five-year | SDQ Total Difficulties (Child) | 3967 (1241,1403) | 0.178 (0.154, 0.203) | 0.143 (0.082, 0.205) | 0.055 (-0.004, 0.114) |
| Total Difficulties (Including peer problems) | Concurrent | SDQ including Peer Problems (Parent) | 5526 (1799, 2010) | 0.270 (0.250, 0.292) | 0.228 (0.180, 0.277) | 0.066 (0.035, 0.098) |
|         |        | SDQ including Peer Problems (Teacher) | 3560 (1156,1315) | 0.224 (0.196, 0.253) | 0.130 (0.066, 0.198) | 0.122 (0.069, 0.178) |
|         |        | SDQ including Peer Problems (Child) | 5523 (1799, 2012) | 0.457 (0.438, 0.476) | 0.414 (0.362, 0.468) | 0.276 (0.222, 0.329) |
|         | Five-year | SDQ including Peer Problems (Child) | 3808 (1241,1404) | 0.201 (0.178, 0.226) | 0.155 (0.094, 0.217) | 0.065 (-0.006, 0.122) |
| Anxiety & Depression | Concurrent | SDQ-Anxiety (Parent) | 5525 (1798, 2010) | 0.136 (-0.116, 0.157) | 0.124 (0.069, 0.179) | 0.052 (-0.002, 0.101) |
|         |        | SDQ-Anxiety (Teacher) | 3553 (1152,1316) | 0.147 (-0.120, 0.174) | 0.122 (0.050, 0.195) | 0.146 (0.079, 0.217) |
|         |        | SDQ-Anxiety (Child) | 5521 (1798,2012) | 0.325 (0.304, 0.345) | 0.308 (0.252, 0.365) | 0.274 (0.216, 0.332) |
|         |        | MFQ-Depression (Parent) | 5514 (1799,2009) | 0.193 (-0.170, 0.216) | 0.192 (0.135, 0.253) | 0.096 (0.041, 0.152) |
|         |        | MFQ-Depression (Child) | 5554 (1810,2020) | 0.427 (0.404, 0.450) | 0.436 (0.373, 0.499) | 0.377 (0.315, 0.438) |
|         | Five-year | MFQ-Depression (Child) | 3818 (1244,1409) | 0.124 (-0.098, 0.149) | 0.105 (-0.034, 0.174) | 0.034 (-0.035, 0.105) |
| Hyper-activity / Inattention / Impulsiveness | Concurrent | SDQ-Hyperactivity (Parent) | 5525 (1799, 2010) | 0.219 (-0.198, 0.239) | 0.140 (-0.090, 0.210) | 0.019 (-0.014, 0.063) |
|         |        | SDQ-Hyperactivity (Teacher) | 3560 (1156,1316) | 0.171 (-0.145, 0.197) | 0.081 (-0.014, 0.150) | 0.037 (-0.017, 0.093) |
|         |        | SDQ-Hyperactivity (Child) | 5522 (1799,2012) | 0.272 (-0.253, 0.292) | 0.218 (-0.163, 0.273) | 0.094 (0.042, 0.147) |
|         |        | Conners Total (Parent) | 5533 (1805,2007) | 0.231 (-0.210, 0.253) | 0.173 (-0.123, 0.227) | 0.025 (-0.004, 0.055) |
|         |        | Conners Hyp-Imp (Parent) | 5531 (1804,2007) | 0.192 (-0.170, 0.214) | 0.155 (-0.106, 0.212) | 0.005 (-0.021, 0.032) |
|         |        | Conners Inatt (Parent) | 5534 (1805,2006) | 0.228 (-0.207, 0.249) | 0.196 (-0.103, 0.214) | 0.037 (-0.003, 0.072) |
|         | Five-year | Conners Hyp-Imp (Parent) | 3851 (1247,1420) | 0.149 (-0.121, 0.178) | 0.131 (-0.058, 0.214) | 0.015 (-0.022, 0.055) |
|         |        | Conners Inatt (Parent) | 3851 (1247,1421) | 0.184 (-0.159, 0.211) | 0.173 (-0.050, 0.214) | 0.043 (-0.004, 0.092) |
| Conduct Problems | Concurrent | SDQ-CP (Parent) | 5525 (1799,2009) | 0.184 (-0.163, 0.206) | 0.128 (-0.076, 0.182) | 0.027 (-0.006, 0.063) |
|         |        | SDQ-CP (Teacher) | 3561 (1157,1316) | 0.140 (-0.112, 0.169) | 0.025 (-0.050, 0.098) | 0.001 (-0.060, 0.063) |
|         |        | SDQ-CP (Child) | 5523 (1799,2012) | 0.344 (0.323, 0.364) | 0.328 (0.223, 0.342) | 0.199 (0.140, 0.259) |
|         | Five-year | SDQ-CP (Parent) | 3851 (1249,1420) | 0.134 (-0.109, 0.160) | 0.070 (-0.003, 0.144) | 0.002 (-0.047, 0.052) |
|         |        | SDQ-CP (Child) | 3807 (1241,1404) | 0.174 (-0.149, 0.200) | 0.116 (-0.038, 0.189) | 0.018 (-0.051, 0.087) |
| Pro-social | Concurrent | SDQ-Prosocial (Parent) | 5538 (1806,2013) | -0.028 (-0.047,-0.010) | 0.048 (-0.002,0.095) | 0.000 (-0.035, 0.036) |
**eTable 2.** Extended Findings for Phenotypic Analyses, DZ (Same-Sex), MZ Twin Differences Analyses for Peer Victimization at Concurrent, and Mental Health Outcomes at Concurrent and 16 (i.e. Concurrent and Five-Year Analyses)

|                      | Concurrent | Five-year |
|----------------------|------------|-----------|
| **SDQ-Prosocial (Teacher)** | 3518 (1147,1300) | -0.075 (-0.099,-0.050) | 0.016 (-0.047,0.077) | -0.037 (-0.094,0.019) |
| **SDQ-Prosocial (Child)**   | 5526 (1799,2013)  | -0.026 (-0.046,-0.007) | 0.027 (-0.028,0.081) | 0.017 (-0.035,0.070) |
| **SDQ-Prosocial (Parent)** | 3848 (1248,1419) | -0.030 (-0.052,-0.008) | 0.032 (-0.026,0.090) | 0.009 (-0.024,0.041) |
| **SDQ-Prosocial (Child)**   | 3807 (1241,1404)  | -0.062 (-0.086,-0.037) | 0.017 (-0.052,0.084) | -0.001 (-0.069,0.065) |
| **SDQ-Peer Problems (Parent)** | 5525 (1799,2010) | 0.267 (0.243,0.291) | 0.257 (0.198,0.315) | 0.103 (0.064,0.145) |
| **SDQ-Peer Problems (Teacher)** | 3555 (1155,1315) | 0.175 (0.148,0.206) | 0.133 (0.070,0.201) | 0.163 (0.101,0.230) |
| **SDQ-Peer Problems (Child)** | 5523 (1799,2012)  | 0.407 (0.384,0.430) | 0.408 (0.345,0.473) | 0.246 (0.180,0.315) |
| **SDQ-Peer Problems (Child)** | 3808 (1241,1404)  | 0.167 (0.142,0.193) | 0.104 (0.037,0.169) | 0.064 (0.003,0.130) |
| **SPEQ-Paranoid Thoughts (Child)** | 3813 (1243,1404) | 0.209 (0.182,0.235) | 0.152 (0.086,0.217) | 0.075 (0.016,0.136) |
| **SPEQ-Hallucinations (Child)** | 3817 (1245,1408) | 0.146 (0.120,0.171) | 0.080 (0.007,0.150) | 0.059 (0.009,0.128) |
| **SPEQ-Grandiosity (Child)** | 3813 (1242,1406) | 0.044 (0.019,0.068) | 0.009 (-0.056,0.075) | 0.005 (-0.057,0.069) |
| **SPEQ-Cognitive Disorganisation (Child)** | 3806 (1238,1405) | 0.139 (0.115,0.163) | 0.124 (0.059,0.189) | 0.091 (0.031,0.150) |
| **SPEQ-Anhedonia (Child)** | 3807 (1238,1405) | 0.111 (0.087,0.134) | 0.033 (-0.033,0.097) | 0.017 (-0.054,0.085) |
| **SPEQ-Negative Symptoms (Parent)** | 3849 (1247,1419) | 0.096 (0.071,0.122) | 0.002 (-0.066,0.073) | 0.023 (-0.013,0.058) |

**Note:** Significant estimates are presented in **bold**. SDQ Total Difficulties includes three subscales of the SDQ: Anxiety, Hyperactivity, and Conduct Problems. A fourth scale, the Peer Problems scale, is added for the SDQ including Peer Problems.
### Table 3. Results From the Phenotypic Analyses, DZ (Same-Sex), and MZ Twin Differences Analyses for Victimization at Age 14 and Mental Health Outcomes at Age 16 (i.e. Two-Year Analyses)

| Outcome                  | Variable Name                   | Total N (DZSS, MZ) | B    | 95% CI         | B    | 95% CI         | B    | 95% CI         |
|--------------------------|---------------------------------|--------------------|------|----------------|------|----------------|------|----------------|
| Total Difficulties       | SDQ Total Difficulties (Child)  | 2353 (759,929)     | .238 | (.205,.271)    | .238 | (.154,.327)    | .106 | (.021,.187)    |
| Total Difficulties       | SDQ including Peer Problems (Child) | 2355 (759,930)     | .282 | (.251,.316)    | .238 | (.181,.350)    | .114 | (.032,.193)    |
| **Anxiety & Depression**| SDQ-Anxiety (Child)             | 2354 (759,930)     | .129 | (.097,.161)    | .117 | (.034,.193)    | .117 | (.042,.195)    |
|                          | ARBQ-Anxiety (Parent)           | 2387 (767,940)     | .078 | (.047,.112)    | .051 | (-.008,.112)   | .079 | (.015,.159)    |
|                          | CASI-Anxiety (Child)            | 2364 (766,930)     | .131 | (.099,.164)    | .132 | (.058,.214)    | .146 | (.065,.220)    |
|                          | MFQ-Depression (Parent)         | 2385 (767,937)     | .125 | (.092,.161)    | .101 | (.041,.172)    | .028 | (.060,.113)    |
|                          | MFQ-Depression (Child)          | 2363 (764,930)     | .189 | (.156,.223)    | .163 | (.094,.239)    | .069 | (.033,.161)    |
| **Hyper-activity / Inattention / Impulsiveness** | SDQ-Hyperactivity (Parent)      | 2378 (765,937)     | .173 | (.141,.205)    | .112 | (.034,.192)    | .035 | (.025,.107)    |
|                          | SDQ-Hyperactivity (Child)       | 2354 (759,929)     | .193 | (.161,.224)    | .209 | (.122,.302)    | .049 | (.040,.135)    |
|                          | Conners Total (Parent)          | 2382 (765,938)     | .185 | (.151,.221)    | .097 | (.034,.164)    | .027 | (.022,.114)    |
|                          | Conners Hyp-Impul (Parent)      | 2381 (765,937)     | .134 | (.100,.172)    | .067 | (.006,.134)    | .002 | (.052,.072)    |
|                          | Conners Inatt (Parent)          | 2382 (765,938)     | .185 | (.152,.219)    | .099 | (.031,.169)    | .041 | (.011,.118)    |
| **Conduct Problems**     | SDQ-CP (Parent)                 | 2384 (767,939)     | .155 | (.121,.188)    | .123 | (.054,.198)    | .033 | (.020,.087)    |
|                          | SDQ-CP (Child)                  | 2353 (759,930)     | .222 | (.190,.255)    | .210 | (.108,.314)    | .056 | (.044,.152)    |
| **Pro-social**           | SDQ-Prosocial (Parent)          | 2382 (767,938)     | -.060| (-.087,-.034)  | .026 | (-.028,.084)   | -.023| (-.067,.016)   |
|                          | SDQ-Prosocial (Child)           | 2354 (759,930)     | -.063| (-.093,-.032)  | -.006| (-.078,.071)   | .058 | (-.150,.036)   |
| **Peer Problems**        | SDQ-Peer Problems (Child)       | 2353 (759,929)     | .267 | (.234,.301)    | .196 | (.103,283)     | .070 | (.012,155)     |
| **Psychotic-like Symptoms** | SPEQ-Paranoid Thoughts (Child)  | 2362 (765,928)     | .342 | (.308,.377)    | .252 | (.179,.327)    | .241 | (.158,.333)    |
|                          | SPEQ-Hallucinations (Child)     | 2363 (765,930)     | .213 | (.179,.247)    | .149 | (.073,.225)    | .119 | (.028,.214)    |
|                          | SPEQ-Grandiosity (Child)        | 2360 (765,928)     | .057 | (.026,.088)    | .075 | (.014,.159)    | .077 | (.155,001)     |
|                          | SPEQ-Cognitive Disorganisation (Child) | 2360 (762,930)     | .194 | (.165,225)    | .215 | (.142,288)    | .146 | (.064,226)     |
|                          | SPEQ-Anhedonia (Child)          | 2359 (762,929)     | .152 | (.121,183)    | .069 | (.016,.151)    | .047 | (.043,135)     |
|                          | SPEQ-Negative Symptoms (Parent) | 2383 (767,936)     | .094 | (.062,127)    | -.011| (.074,047)    | .009 | (.040,060)     |

*Note:* Significant estimates are presented in bold; SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxiety, Hyperactivity, Conduct Problems and Peer Problems.
### eTable 4. Consideration of Early Parenting Variables

| Childhood factor          | Variable Name         | Total N (DZSS, MZ) | Phenotypic effects | DZ Differences | MZ Differences |
|---------------------------|-----------------------|--------------------|--------------------|---------------|---------------|
|                           |                       |                    | B      | 95% CI       | B      | 95% CI       | B      | 95% CI       |
| Parental feelings & discipline | Smack/shout          | 5484 (1788, 1995)  | .169   | .142 - .196  | .196   | .148 - .218  | .079   | .050 - .097  |
|                           | Explain/calm          | 5158 (1682, 1887)  | -.023  | -.049 - .003 | .003   | -.012 - .097 | .069   | .036 - .093  |
| Parental negative feelings |                       | 5489 (1788, 1998)  | .139   | .115 - .166  | .166   | .133 - .201  | .063   | .033 - .094  |

Note: As a sensitivity analysis, the possibility of additional non-shared environmental confounding by parenting variables was explored. Several variables that are conceptually related to other forms of early victimization were used, including harsh parenting and negative parental feelings. Parental Discipline was assessed using questions adapted from a semi-structured interview. From this measure, we derived a mean score for harsh parenting across time (“Give a smack or slap” and “Telling off or shouting”, assessed at age 3, 4, 7, and 9) and a mean score for positive parenting across time (“Explain to child, or reason with child” and “Be firm and calm with child”, assessed at age 3, 4 and 9). Negative parental feelings were assessed using items from the Negativity subscale of the Parental Feelings Questionnaire, assessed at age 3, 4, 7 and 9. Phenotypic, DZ, and MZ estimates were computed following the procedure described in the manuscript for main analyses.
| Outcome Variable Name | Mean  | SD   | Skew  | Kurtosis |
|-----------------------|-------|------|-------|----------|
| **Victimization**     |       |      |       |          |
| Peer Victimization (Child) | 7.76  | 7.36 | 1.05  | 0.43     |
| **Total Difficulties** |       |      |       |          |
| SDQ Total Difficulties (Parent) | 5.89  | 4.20 | 1.00  | 1.03     |
| SDQ Total Difficulties (Teacher) | 3.77  | 4.04 | 1.60  | 2.94     |
| SDQ Total Difficulties (Child) | 7.55  | 4.58 | 0.68  | 0.25     |
| **Total Difficulties (including peer problems)** |       |      |       |          |
| SDQ including Peer Problems (Parent) | 6.96  | 5.01 | 1.12  | 1.46     |
| SDQ including Peer Problems (Teacher) | 4.76  | 4.89 | 1.63  | 3.18     |
| SDQ including Peer Problems (Child) | 8.89  | 5.39 | 0.80  | 0.64     |
| **Anxiety & Depression** |       |      |       |          |
| SDQ-Anxiety (Parent) | 1.79  | 1.90 | 1.27  | 1.44     |
| SDQ-Anxiety (Teacher) | 1.19  | 1.79 | 1.87  | 3.54     |
| SDQ-Anxiety (Child) | 2.17  | 2.04 | 1.02  | 0.69     |
| MFQ-Depression (Parent) | 1.14  | 2.26 | 3.24  | 13.80    |
| MFQ-Depression (Child) | 2.28  | 3.29 | 2.14  | 5.30     |
| **Hyper-activity / Inattention / Impulsiveness** |       |      |       |          |
| SDQ-Hyperactivity (Parent) | 2.80  | 2.25 | 0.88  | 0.43     |
| SDQ-Hyperactivity (Teacher) | 2.04  | 2.39 | 1.33  | 1.22     |
| SDQ-Hyperactivity (Child) | 3.51  | 2.30 | 0.47  | -0.36    |
| Conners Total (Parent) | 9.69  | 8.42 | 1.60  | 3.28     |
| Conners Hyperactivity-Impulsivity (Parent) | 4.22  | 4.29 | 1.73  | 3.77     |
| Conners Inatt (Parent) | 5.48  | 5.05 | 1.38  | 2.08     |
| **Conduct Problems** |       |      |       |          |
| SDQ-Conduct Problems (Parent) | 1.31  | 1.45 | 1.45  | 2.88     |
| SDQ-Conduct Problems (Teacher) | 0.55  | 1.24 | 3.12  | 11.64    |
| SDQ-Conduct Problems (Child) | 1.88  | 1.65 | 1.12  | 1.40     |
| **Pro-social** |       |      |       |          |
| SDQ-Prosocial (Parent) | 8.56  | 1.63 | -1.24 | 1.39     |
| SDQ-Prosocial (Teacher) | 8.06  | 2.07 | -0.99 | 0.36     |
| SDQ-Prosocial (Child) | 7.45  | 1.90 | -0.46 | -0.43    |
| **Peer Problems** |       |      |       |          |
| SDQ-Peer Problems (Parent) | 1.07  | 1.48 | 1.87  | 4.13     |
| SDQ-Peer Problems (Teacher) | 0.98  | 1.54 | 2.07  | 4.94     |
| SDQ-Peer Problems (Child) | 1.33  | 1.56 | 1.66  | 3.39     |

**Note:** SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxiety, Hyperactivity, Conduct Problems and Peer Problems.
| Outcome                                      | Baseline 7 years | Baseline 9 years | Total N (DZSS, MZ) | MZ       | 95% CI     | MZ baseline | 95% CI     |
|----------------------------------------------|------------------|------------------|--------------------|----------|------------|------------|------------|
| SDQ Total Difficulties (Parent)             | SDQ Total Difficulties (Parent) | SDQ Total Difficulties (Parent) | 5146 (1676,1892) | 0.040 | (0.005,0.074) | 0.032 | (0.001,0.065) |
| SDQ Total Difficulties (Teacher)            | SDQ Total Difficulties (Teacher) | SDQ Total Difficulties (Teacher) | 2834 (923,1065) | 0.107 | (0.045,0.171) | 0.103 | (0.039,0.169) |
| SDQ Total Difficulties (Child)              | SDQ Total Difficulties (Child) | SDQ Total Difficulties (Child) | 5142 (1675,1890) | 0.246 | (0.191,0.302) | 0.240 | (0.185,0.295) |
| SDQ including Peer Problems (Parent)        | SDQ including Peer Problems (Parent) | SDQ including Peer Problems (Parent) | 5147 (1676,1892) | 0.062 | (0.029,0.095) | 0.052 | (0.021,0.083) |
| SDQ including Peer Problems (Teacher)       | SDQ including Peer Problems (Teacher) | SDQ including Peer Problems (Teacher) | 2853 (930,1069) | 0.137 | (0.075,0.199) | 0.134 | (0.072,0.197) |
| SDQ including Peer Problems (Child)         | SDQ including Peer Problems (Parent) | SDQ including Peer Problems (Parent) | 5146 (1675,1893) | 0.279 | (0.224,0.335) | 0.272 | (0.216,0.327) |
| SDQ-Anxiety (Parent)                        | SDQ-Anxiety (Parent) | SDQ-Anxiety (Parent) | 5147 (1676,1892) | 0.036 | (-0.015,0.066) | 0.034 | (-0.014,0.082) |
| SDQ-Anxiety (Teacher)                       | SDQ-Anxiety (Teacher) | SDQ-Anxiety (Teacher) | 2837 (925,1063) | 0.166 | (0.092,0.242) | 0.162 | (0.087,0.236) |
| SDQ-Anxiety (Child)                         | SDQ-Anxiety (Child) | SDQ-Anxiety (Child) | 5144 (1674,1893) | 0.269 | (0.209,0.328) | 0.265 | (0.208,0.325) |
| MFDQ-Depression (Parent)                    | MFDQ-Depression (Parent) | MFDQ-Depression (Parent) | 5136 (1676,1891) | 0.087 | (0.028,0.146) | 0.087 | (0.029,0.146) |
| MFDQ-Depression (Child)                     | MFDQ-Depression (Child) | MFDQ-Depression (Child) | 5172 (1686,1899) | 0.362 | (0.300,0.431) | 0.361 | (0.296,0.426) |
| SDQ-Hyperactivity (Parent)                  | SDQ-Hyperactivity (Parent) | SDQ-Hyperactivity (Parent) | 5145 (1675,1892) | 0.025 | (-0.008,0.061) | 0.020 | (-0.009,0.050) |
| SDQ-Hyperactivity (Teacher)                 | SDQ-Hyperactivity (Teacher) | SDQ-Hyperactivity (Teacher) | 2854 (932,1070) | 0.050 | (-0.013,0.114) | 0.048 | (-0.014,0.114) |
| SDQ-Hyperactivity (Child)                   | SDQ-Hyperactivity (Child) | SDQ-Hyperactivity (Child) | 5142 (1674,1892) | 0.102 | (0.050,0.157) | 0.100 | (0.046,0.155) |
| Conners Total (Parent)                      | Conners Total (Age 8) | Conners Total (Age 8) | 4547 (1472,1672) | 0.024 | (-0.006,0.056) | 0.012 | (-0.015,0.039) |
| Conners Inattention (Parent)                | Conners Inattention (Age 8) | Conners Inattention (Age 8) | 4544 (1471,1672) | 0.005 | (-0.023,0.034) | -0.001 | (-0.026,0.024) |
| SDQ-Conduct Problems (Parent)               | SDQ-Conduct Problems (Parent) | SDQ-Conduct Problems (Parent) | 5149 (1678,1891) | 0.030 | (-0.004,0.067) | 0.023 | (-0.012,0.059) |
| SDQ-Conduct Problems (Teacher)              | SDQ-Conduct Problems (Teacher) | SDQ-Conduct Problems (Teacher) | 2854 (932,1070) | 0.009 | (-0.056,0.077) | 0.005 | (-0.061,0.071) |
| SDQ-Conduct Problems (Child)                | SDQ-Conduct Problems (Child) | SDQ-Conduct Problems (Child) | 5149 (1677,1893) | 0.207 | (-0.146,0.270) | 0.197 | (-137,257) |
| SDQ-Prosocial (Parent)                      | SDQ-Prosocial (Parent) | SDQ-Prosocial (Parent) | 5160 (1684,1894) | -0.003 | (-0.039,0.033) | -0.011 | (-0.046,0.022) |
| SDQ-Prosocial (Teacher)                     | SDQ-Prosocial (Teacher) | SDQ-Prosocial (Teacher) | 2814 (924,1052) | -0.028 | (-0.090,0.033) | -0.029 | (-0.091,0.033) |
| SDQ-Prosocial (Child)                       | SDQ-Prosocial (Child) | SDQ-Prosocial (Child) | 5148 (1675,1893) | 0.011 | (-0.042,0.065) | 0.011 | (-0.044,0.064) |
| SDQ-Peer Problems (Parent)                  | SDQ-Peer Problems (Parent) | SDQ-Peer Problems (Parent) | 5146 (1676,1892) | 0.097 | (-0.059,0.139) | 0.086 | (-0.048,0.125) |
| SDQ-Peer Problems (Teacher)                 | SDQ-Peer Problems (Teacher) | SDQ-Peer Problems (Teacher) | 2839 (925,1067) | 0.151 | (0.080,0.224) | 0.153 | (0.083,0.228) |
| SDQ-Peer Problems (Child)                   | SDQ-Peer Problems (Child) | SDQ-Peer Problems (Child) | 5144 (1676,1890) | 0.242 | (-0.170,0.314) | 0.239 | (-164,308) |

Note: In MZ twin analyses, we further controlled for within-twin pairs differences in prior mental difficulties measured at age 7 and/or 9 years. Twin pairs had to have complete data on peer victimization, the respective outcome measures and prior mental health measures in order to be included in these additional analyses. In order to maximize available Ns, we averaged measures across ages 7 and 9 years. This procedure was followed for all outcome measures, except for the Conners scale, where data was collected at age 8 years instead. Wherever possible, the corresponding baseline measures were used (e.g. SDQ parent-rated anxiety when examining the SDQ parent-rated anxiety as an outcome). When not possible, the next best option was used. Detailed on measures that were used to generate this score of prior mental health difficulties are presented in the columns labelled "Baseline 7 years" and "Baseline 9 years".

Wherever possible, the corresponding baseline measures were used (e.g. SDQ parent-rated anxiety when examining the SDQ parent-rated anxiety as an outcome). When not possible, the next best option was used. Detailed on measures that were used to generate this score of prior mental health difficulties are presented in the columns labelled "Baseline 7 years" and "Baseline 9 years".

To facilitate comparison, we present MZ differences without this additional adjustment in the column "MZ". These analyses are the same as in the manuscript but with a smaller N due to missing data on prior mental health measures. The column "MZ baseline" contains the MZ estimates when controlling for prior mental health difficulties. Because the "MZ" analysis and the "MZ baseline" analysis were conducted on the same sample of participants (no. of pairs can be found in the column "Total N"), any change in significance between "MZ" and "MZ baseline" is due to the baseline controls being added into the regression, and not due to a change in sample size. All significant estimates are presented in bold.

SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxiety, Hyperactivity, Conduct Problems and Peer Problems.
| Outcome                          | Variable Name                  | Mean  | SD    | Skew | Kurtosis |
|---------------------------------|--------------------------------|-------|-------|------|----------|
|Victimization                    | Peer Victimization (Child)     | 7.31  | 7.06  | 1.15 | 0.80     |
|Total Difficulties               | SDQ Total Difficulties (Child)| 7.65  | 4.33  | 0.69 | 0.27     |
|Total Difficulties (Including peer problems) | SDQ including Peer Problems (Child) | 9.16  | 5.01  | 0.73 | 0.45     |
|Anxiety & Depression             | SDQ-Anxiety (Child)            | 2.70  | 2.24  | 0.80 | 0.09     |
|                                 | ARBQ-Anxiety (Parent)          | 3.25  | 3.76  | 2.04 | 6.02     |
|                                 | CASI-Anxiety (Child)           | 7.84  | 5.74  | 1.21 | 1.78     |
|                                 | MFQ-Depression (Parent)        | 0.88  | 2.16  | 4.21 | 22.29    |
|                                 | MFQ-Depression (Child)         | 2.75  | 3.71  | 2.16 | 5.23     |
|Hyper-activity / Inattention / Impulsiveness | SDQ-Hyperactivity (Parent)     | 2.05  | 1.83  | 1.19 | 1.54     |
|                                 | SDQ-Hyperactivity (Child)      | 3.44  | 2.29  | 0.55 | -0.22    |
|                                 | Conners Total (Parent)         | 5.83  | 6.54  | 2.11 | 6.45     |
|                                 | Conners Hyperactivity-Impulsivity (Parent) | 2.16  | 3.01  | 2.56 | 9.22     |
|                                 | Conners Inattention (Parent)   | 3.67  | 4.44  | 1.90 | 4.57     |
|Conduct Problems                 | SDQ-Conduct Problems (Parent)  | 1.10  | 1.29  | 1.69 | 4.17     |
|                                 | SDQ-Conduct Problems (Child)   | 1.51  | 1.39  | 1.34 | 2.32     |
|Pro-social                       | SDQ-Prosocial (Parent)         | 8.30  | 9.00  | -1.12| 0.78     |
|                                 | SDQ-Prosocial (Child)          | 7.27  | 9.00  | -0.52| -0.12    |
|Peer Problems                    | SDQ-Peer Problems (Child)      | 1.51  | 1.47  | 1.32 | 2.16     |
|Psychotic-like Symptoms          | SPEQ-Paranoid Thoughts (Child) | 12.19 | 10.62 | 1.57 | 3.32     |
|                                 | SPEQ-Hallucinations (Child)    | 4.59  | 5.98  | 2.17 | 6.12     |
|                                 | SPEQ-Grandiosity (Child)       | 5.27  | 4.39  | 1.20 | 1.53     |
|                                 | SPEQ-Cognitive Disorganisation (Child) | 3.84  | 2.82  | 0.47 | -0.65    |
|                                 | SPEQ-Anhedonia (Child)         | 1.20  | 1.28  | 1.24 | 1.48     |
|                                 | SPEQ-Negative Symptoms (Parent) | 2.58  | 3.61  | 2.32 | 7.18     |

**Note:** SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxiety, Hyperactivity, Conduct Problems and Peer Problems.
## eTable 8. Two-Year MZ Analyses Repeated With Further Control for Preexisting Twin Differences in Mental Health Difficulties at Ages 7 and 9 Years

| Outcome | Baseline 11 years | Total N (DZSS, MZ) | MZ | 95% CI | MZ baseline | 95% CI |
|---------|-------------------|--------------------|----|-------|-------------|-------|
| SDQ Total Difficulties (Child) | SDQ Total Difficulties (Child) | 2174 (703,853) | .106 | (.016, .191) | .075 | (-.013, .159) |
| SDQ including Peer Problems (Child) | SDQ including Peer Problems (Child) | 2175 (703,854) | .113 | (.028, .195) | .083 | (.000, .164) |
| ARBQ-Anxiety (Parent) | ARBQ-Anxiety (Parent) | 2220 (714,868) | .098 | (.032, .182) | .079 | (.013, .159) |
| CASI-Anxiety (Child) | CASI-Anxiety (Child) | 2183 (708,854) | .144 | (.060, .223) | .131 | (.049, .211) |
| SDO-Anxiety (Child) | SDO-Anxiety (Child) | 2175 (703,854) | .117 | (.034, .197) | .092 | (.017, .172) |
| MFQ-Depression (Parent) | MFQ-Depression (Child) | 2212 (714,864) | .033 | (-.056, .122) | .020 | (-.069, .108) |
| MFQ-Depression (Child) | MFQ-Depression (Child) | 2188 (710,854) | .085 | (-.020, .186) | .061 | (-.041, .158) |
| SDQ-Hyperactivity (Parent) | SDQ-Hyperactivity (Parent) | 2211 (712,865) | .040 | (-.022, .114) | .034 | (-.025, .101) |
| SDQ-Hyperactivity (Child) | SDQ-Hyperactivity (Child) | 2190 (707,859) | .060 | (-.028, .151) | .050 | (-.042, .140) |
| Conners Total (Parent) | Conners Total (Parent) | 2215 (711,867) | .031 | (-.020, .120) | .023 | (-.025, .104) |
| Conners Hyperactivity-Impulsivity (Parent) | Conners Hyperactivity-Impulsivity (Parent) | 2213 (710,866) | .004 | (-.047, .082) | .006 | (-.044, .087) |
| Conners Inattentiveness (Parent) | Conners Inattentiveness (Parent) | 2216 (711,867) | .043 | (-.010, .127) | .027 | (-.021, .087) |
| SDQ-Conduct Problems (Parent) | SDQ-Conduct Problems (Parent) | 2216 (714,866) | .042 | (-.015, .099) | .027 | (-.030, .084) |
| SDQ-Conduct Problems (Child) | SDQ-Conduct Problems (Child) | 2174 (703,854) | .044 | (-.063, .141) | .017 | (-.091, .116) |
| SDQ-Prosocial (Parent) | SDQ-Prosocial (Parent) | 2215 (714,866) | -.024 | (-.070, .018) | -.025 | (-.072, .016) |
| SDQ-Prosocial (Child) | SDQ-Prosocial (Child) | 2175 (703,854) | -.056 | (-.150, .040) | -.048 | (-.140, .046) |
| SDQ-Peer Problems (Child) | SDQ-Peer Problems (Child) | 2174 (703,853) | .068 | (-.013, .156) | .063 | (-.018, .152) |
| SPEQ-Paranoid Thoughts (Child) | SDQ including Peer Problems (Child) | 2183 (708,853) | .225 | (.139, .314) | .215 | (.133, .309) |
| SPEQ-Hallucinations (Child) | SDQ including Peer Problems (Child) | 2182 (707,855) | .104 | (.009, .200) | .095 | (.006, .189) |
| SPEQ-Grandiosity (Child) | SDQ including Peer Problems (Child) | 2180 (707,852) | -.081 | (-.163, .000) | -.079 | (-.163, .001) |
| SPEQ-Cognitive Disorganisation (Child) | SDQ including Peer Problems (Child) | 2178 (704,854) | .142 | (.056, .227) | .125 | (.041, .211) |
| SPEQ-Anhedonia (Child) | SDQ including Peer Problems (Child) | 2177 (704,853) | .033 | (-.057, .120) | .018 | (-.070, .104) |
| SPEQ-Negative Symptoms (Parent) | SDQ including Peer Problems (Parent) | 2216 (714,865) | .009 | (-.042, .062) | -.003 | (-.052, .050) |

**Note:** For the two-year analyses, peer victimization was assessed at age 14 years and outcomes at Five-years. Measures of prior mental health difficulties were therefore available at Concurrent years. Few pairs were lost when including prior mental health difficulties. See Note of eTable 6 for additional information on this set of analyses.
| Outcome | Variable Name                                      | Mean  | SD   | Skew | Kurtosis |
|---------|---------------------------------------------------|-------|------|------|----------|
|         | **Victimization**                                  |       |      |      |          |
|         | Peer Victimization (Child)                         | 7.47  | 7.21 | 1.11 | 0.62     |
|         | **Total Difficulties**                             |       |      |      |          |
|         | SDQ Total Difficulties (Child)                     | 7.85  | 4.41 | 0.64 | 0.17     |
|         | **Total Difficulties (including peer problems)**   |       |      |      |          |
|         | SDQ including Peer Problems (Child)                | 9.37  | 5.06 | 0.67 | 0.32     |
|         | **Anxiety & Depression**                           |       |      |      |          |
|         | SDQ-Anxiety (Child)                                | 2.73  | 2.23 | 0.75 | 0.00     |
|         | ARBQ-Anxiety (Parent)                              | 3.39  | 3.97 | 2.07 | 6.00     |
|         | CASI-Anxiety (Child)                               | 7.92  | 5.81 | 1.15 | 1.46     |
|         | MFQ-Depression (Parent)                            | 0.93  | 2.18 | 3.99 | 20.22    |
|         | MFQ-Depression (Child)                             | 2.74  | 3.68 | 2.20 | 5.57     |
|         | **Hyper-activity / Inattention / Impulsiveness**    |       |      |      |          |
|         | SDQ-Hyperactivity (Parent)                         | 2.17  | 1.89 | 1.16 | 1.52     |
|         | SDQ-Hyperactivity (Child)                          | 3.52  | 2.30 | 0.50 | -0.31    |
|         | Conners Total (Parent)                             | 6.33  | 6.88 | 2.02 | 5.68     |
|         | Conners Hyperactivity-Impulsivity (Parent)         | 2.38  | 3.22 | 2.49 | 8.51     |
|         | Conners Inattention (Parent)                       | 3.95  | 4.60 | 1.78 | 3.87     |
|         | **Conduct Problems**                               |       |      |      |          |
|         | SDQ-Conduct Problems (Parent)                      | 1.18  | 1.35 | 1.64 | 3.91     |
|         | SDQ-Conduct Problems (Child)                       | 1.61  | 1.45 | 1.31 | 2.14     |
|         | **Pro-social**                                     |       |      |      |          |
|         | SDQ-Prosocial (Parent)                             | 8.26  | 1.92 | -1.13| 0.81     |
|         | SDQ-Prosocial (Child)                              | 7.17  | 1.94 | -0.48| -0.19    |
|         | **Peer Problems**                                  |       |      |      |          |
|         | SDQ-Peer Problems (Child)                          | 1.51  | 1.48 | 1.35 | 2.38     |
|         | **Psychotic-like Symptoms**                        |       |      |      |          |
|         | SPEQ-Paranoid Thoughts (Child)                     | 12.15 | 10.56| 1.57 | 3.36     |
|         | SPEQ-Hallucinations (Child)                        | 4.65  | 6.02 | 2.12 | 5.67     |
|         | SPEQ-Grandiosity (Child)                           | 5.32  | 4.44 | 1.18 | 1.40     |
|         | SPEQ-Cognitive Disorganisation (Child)             | 3.92  | 2.84 | 0.47 | -0.67    |
|         | SPEQ-Anhedonia (Child)                             | 1.26  | 1.30 | 1.16 | 1.30     |
|         | SPEQ-Negative Symptoms (Parent)                    | 2.71  | 3.65 | 2.24 | 6.59     |

**Note:** SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxiety, Hyperactivity, Conduct Problems and Peer Problems.
| Outcome                                      | Baseline 7 years                      | Baseline 9 years                      | Total N (DZSS, MZ) | MZ     | 95% CI       | MZ baseline | 95% CI               |
|----------------------------------------------|--------------------------------------|--------------------------------------|--------------------|--------|--------------|--------------|----------------------|
| SDQ Total Difficulties (Child)              | SDQ Total Difficulties (Child)       | SDQ Total Difficulties (Child)       | 3598 (1170,1332)   | .062   | (.002,.123)  | .059         | (-.001,.121)         |
| SDQ including Peer Problems (Child)         | SDQ including Peer Problems (Child)  | SDQ including Peer Problems (Child)  | 3599 (1170,1333)   | .069   | (.008,.129)  | .065         | (.006,.125)          |
| ARBQ-Anxiety (Parent)                       | ARBQ-Anxiety (Parent)                | ARBQ-Anxiety (Parent)                | 3640 (1177,1350)   | .031   | (-.025,.084) | .029         | (-.025,.081)         |
| CASI-Anxiety (Child)                        | CASI-Anxiety (Child)                 | CASI-Anxiety (Child)                 | 3609 (1175,1336)   | .013   | (-.048,.071) | .013         | (-.047,.072)         |
| SDQ-Anxiety (Child)                         | SDQ-Anxiety (Child)                  | SDQ-Anxiety (Child)                  | 3600 (1170,1334)   | .041   | (-.020,.100) | .037         | (-.024,.095)         |
| MFQ-Depression (Parent)                     | MFQ-Depression (Parent)              | MFQ-Depression (Parent)              | 3637 (1177,1347)   | -.029  | (-.104,.028) | -.030        | (-.104,.026)         |
| MFQ-Depression (Child)                      | MFQ-Depression (Child)               | MFQ-Depression (Child)               | 3608 (1173,1338)   | .031   | (-.040,.103) | .031         | (-.040,.101)         |
| SDQ-Hyperactivity (Parent)                  | SDQ-Hyperactivity (Parent)           | SDQ-Hyperactivity (Parent)           | 3629 (1174,1347)   | .032   | (-.013,.082) | .032         | (-.011,.076)         |
| SDQ-Hyperactivity (Child)                   | SDQ-Hyperactivity (Child)            | SDQ-Hyperactivity (Child)            | 3595 (1169,1331)   | .062   | (-.005,.133) | .065         | (.000,.134)          |
| Conners Total (Parent)                      | Conners Total (Age 8)                | Conners Total (Age 8)                | 3311 (1028,1230)   | .027   | (-.011,.075) | .022         | (-.015,.067)         |
| Conners Hyperactivity-Impulsivity (Parent)  | Conners Hyperactivity-Impulsivity (Age 8) | Conners Hyperactivity-Impulsivity (Age 8) | 3307 (1062,1229)   | -.003  | (-.040,.036) | -.004        | (-.040,.033)         |
| Conners Inatt (Parent)                      | Conners Inattention (Age 8)          | Conners Inattention (Age 8)          | 3309 (1061,1230)   | .042   | (.003,.098)  | .034         | (.008,.084)          |
| SDQ-Conduct Problems (Parent)               | SDQ-Conduct Problems (Parent)        | SDQ-Conduct Problems (Parent)        | 3639 (1179,1349)   | .000   | (-.051,.051) | .002         | (-.053,.048)         |
| SDQ-Conduct Problems (Child)                | SDQ-Conduct Problems (Child)         | SDQ-Conduct Problems (Child)         | 3600 (1172,1333)   | .024   | (-.045,.095) | .021         | (-.048,.092)         |
| SDQ-Prosocial (Parent)                      | SDQ-Prosocial (Parent)               | SDQ-Prosocial (Parent)               | 3635 (1177,1348)   | .009   | (-.025,.044) | .002         | (-.031,.037)         |
| SDQ-Prosocial (Child)                       | SDQ-Prosocial (Child)                | SDQ-Prosocial (Child)                | 3598 (1170,1332)   | -.015  | (-.086,.052) | -.017        | (-.088,.052)         |
| SDQ-Peer Problems (Child)                   | SDQ-Peer Problems (Child)            | SDQ-Peer Problems (Child)            | 3599 (1170,1333)   | .059   | (-.008,1.24) | .059         | (-.006,.127)         |
| SPEQ-Paranoid Thoughts (Child)              | SDQ including Peer Problems (Parent) | SDQ including Peer Problems (Child)  | 3604 (1172,1334)   | .082   | (.022,.144)  | .085         | (.023,.147)          |
| SPEQ-Hallucinations (Child)                 | SDQ including Peer Problems (Parent) | SDQ including Peer Problems (Child)  | 3607 (1174,1337)   | -.061  | (-.005,.135) | .061         | (-.006,.136)         |
| SPEQ-Grandiosity (Child)                    | SDQ including Peer Problems (Parent) | SDQ including Peer Problems (Child)  | 3604 (1171,1336)   | .011   | (-.050,.078) | .012         | (-.051,.076)         |
| SPEQ-Cognitive Disorganisation (Child)      | SDQ including Peer Problems (Parent) | SDQ including Peer Problems (Child)  | 3598 (1168,1334)   | .087   | (.026,.147)  | .084         | (.023,.144)          |
| SPEQ-Anhedonia (Child)                      | SDQ including Peer Problems (Parent) | SDQ including Peer Problems (Child)  | 3598 (1167,1334)   | .008   | (-.065,.078) | .006         | (-.064,.077)         |
| SPEQ-Negative Symptoms (Parent)             | SDQ including Peer Problems (Parent) | SDQ including Peer Problems (Parent) | 3636 (1175,1349)   | -.014  | (-.023,.048) | .012         | (-.025,.047)         |

Note: See Note for eTable 6.
| Variable                                      | Phenotypic | DZ Differences | MZ Differences |
|----------------------------------------------|------------|----------------|----------------|
|                                              | B     | 95% CI         | B     | 95% CI         | B     | 95% CI         |
| SDQ Total Difficulties (Parent)              | .197   | (.177, .217)   | .149   | (.096, .201)   | .032   | (.002, .063)   |
| SDQ Total Difficulties (Teacher)             | .199   | (.171, .228)   | .034   | (-.038, .110)  | .089   | (.032, .146)   |
| SDQ Total Difficulties (Child)               | .306   | (.285, .326)   | .252   | (.194, .308)   | .116   | (.067, .167)   |
| SDQ including Peer Problems (Parent)         | .227   | (.207, .248)   | .186   | (.134, .236)   | .053   | (.021, .083)   |
| SDQ including Peer Problems (Teacher)        | .214   | (.184, .244)   | .059   | (-.015, .134)  | .120   | (.063, .177)   |
| SDQ including Peer Problems (Child)          | .351   | (.331, .371)   | .299   | (.242, .355)   | .143   | (.094, .198)   |
| SDQ-Anxiety (Parent)                         | .080   | (.060, .101)   | .068   | (.015, .120)   | .040   | (-.004, .083)  |
| SDQ-Anxiety (Teacher)                        | .110   | (.082, .139)   | .035   | (-.041, .112)  | .133   | (.065, .199)   |
| SDQ-Anxiety (Child)                          | .207   | (.187, .229)   | .215   | (.159, .270)   | .140   | (.087, .191)   |
| MFQ-Depression (Parent)                      | .149   | (.126, .171)   | .163   | (.106, .223)   | .072   | (.021, .123)   |
| MFQ-Depression (Child)                       | .311   | (.288, .334)   | .302   | (.238, .364)   | .203   | (.150, .260)   |
| SDQ-Hyperactivity (Parent)                   | .218   | (.199, .239)   | .157   | (.096, .218)   | .012   | (-.017, .042)  |
| SDQ-Hyperactivity (Teacher)                  | .182   | (.155, .208)   | .042   | (-.029, .115)  | .034   | (-.020, .089)  |
| SDQ-Hyperactivity (Child)                    | .235   | (.214, .254)   | .175   | (.115, .233)   | .025   | (-.024, .074)  |
| Conners Total (Parent)                       | .218   | (.197, .240)   | .153   | (.099, .212)   | .008   | (-.018, .036)  |
| Conners Hyperactivity-Impulsivity (Parent)   | .175   | (.153, .197)   | .117   | (.062, .174)   | -.008  | (-.032, .017)  |
| Conners Inattention (Parent)                 | .219   | (.198, .240)   | .156   | (.100, .216)   | .021   | (-.010, .054)  |
| SDQ-Conduct Problems (Parent)                | .151   | (.131, .173)   | .097   | (.044, .155)   | .024   | (-.009, .058)  |
| SDQ-Conduct Problems (Teacher)               | .147   | (.119, .178)   | -.001  | (-.079, .076)  | .023   | (-.031, .077)  |
| SDQ-Conduct Problems (Child)                 | .282   | (.261, .304)   | .190   | (.126, .253)   | .115   | (.061, .169)   |
| SDQ-Prosocial (Parent)                       | -.050  | (-.069, -.032) | .039   | (-.008, .086)  | -.002  | (-.036, .032)  |
| SDQ-Prosocial (Teacher)                      | -.110  | (-.135, -.085) | .013   | (-.049, .080)  | -.053  | (-.104, -.002) |
| SDQ-Prosocial (Child)                        | -.071  | (-.090, -.051) | .009   | (-.046, .062)  | .034   | (-.014, .083)  |
| SDQ-Peer Problems (Parent)                   | .224   | (.199, .248)   | .205   | (.140, .267)   | .087   | (.050, .126)   |
| SDQ-Peer Problems (Teacher)                  | .162   | (.133, .194)   | .095   | (.022, .172)   | .151   | (.093, .213)   |
| SDQ-Peer Problems (Child)                    | .324   | (.300, .348)   | .290   | (.227, .356)   | .154   | (.090, .221)   |

**Note:** Significant estimates are presented in **bold**. SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxiety, Hyperactivity, Conduct Problems and Peer Problems.
| Variable Description                  | Phenotypic Differences | DZ Differences | MZ Differences |
|---------------------------------------|------------------------|----------------|----------------|
|                                       | B  95% CI               | B  95% CI       | B  95% CI       |
| SDQ Total Difficulties (Child)        | 0.097 (.073, .121)     | 0.061 (.003, .131) | 0.056 (.002, .113) |
| SDQ including Peer Problems (Child)   | 0.119 (.096, .144)     | 0.072 (.006, .134) | 0.067 (.014, .124) |
| ARBQ-Anxiety (Parent)                 | 0.002 (-.022, .025)    | 0.027 -.029, .087 | 0.001 (-.047, .044) |
| CASI-Anxiety (Child)                  | 0.005 (.018, .030)     | 0.075 (.016, .137) | 0.019 (-.040, .077) |
| SDQ-Anxiety (Child)                   | -.028 (-.052, -.004)   | 0.031 (.029, .091) | 0.046 (.008, .100) |
| MFO-Depression (Parent)               | 0.042 (.018, .069)     | 0.034 (.029, .113) | 0.043 (.100, .003) |
| MFO-Depression (Child)                | 0.043 (.019, .067)     | 0.076 (.013, .134) | 0.030 (.030, .088) |
| SDQ-Hyperactivity (Parent)            | 0.172 (.146, .198)     | 0.082 (.005, .162) | 0.013 (.026, .052) |
| SDQ-Hyperactivity (Child)             | 0.135 (.110, .158)     | 0.049 -.021, .122 | 0.049 (.007, .106) |
| Conners Total (Parent)                | 0.171 (.145, .198)     | 0.080 (.015, .151) | 0.018 (.014, .051) |
| Conners Hyperactivity-Impulsivity (Parent) | 0.119 (.092, .149)   | 0.105 (.037, .185) | -.002 (-.035, .031) |
| Conners Inattention (Parent)          | 0.179 (.153, .206)     | 0.048 (.029, .119) | 0.026 (.006, .067) |
| SDQ-Conduct Problems (Parent)         | 0.104 (.079, .128)     | 0.048 (.018, .119) | -.003 (.046, .038) |
| SDQ-Conduct Problems (Child)          | 0.142 (.117, .167)     | 0.058 (.026, .141) | 0.022 (.040, .084) |
| SDQ-Prosocial (Parent)                | -.056 (-.079, -.035)   | 0.016 (.043, .075) | -.010 (.041, .020) |
| SDQ-Prosocial (Child)                 | -.100 (-.125, -.076)   | -.016 (.083, .052) | .017 (.049, .079) |
| SDQ-Peer Problems (Child)             | 0.123 (.098, .149)     | 0.062 (.007, .131) | 0.063 (.002, .124) |
| SPEQ-Paranoid Thoughts (Child)        | 0.128 (.102, .154)     | 0.085 (.020, .149) | 0.062 (.003, .122) |
| SPEQ-Hallucinations (Child)            | 0.085 (.061, .111)     | 0.029 -.041, .095 | 0.054 (.007, .121) |
| SPEQ-Grandiosity (Child)              | 0.065 (.042, .089)     | 0.054 -.010, .117 | 0.059 (.004, .118) |
| SPEQ-Cognitive Disorganisation (Child) | 0.060 (.037, .085)    | 0.057 -.005, .123 | 0.097 (.045, .152) |
| SPEQ-Anhedonia (Child)                | 0.109 (.086, .133)     | 0.060 -.005, .121 | 0.021 (.035, .080) |
| SPEQ-Negative Symptoms (Parent)       | 0.082 (.058, .108)     | -.005 (.074, .062) | .009 (.025, .038) |

**Note:** Significant estimates are presented in **bold**. SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxiety, hyperactivity, Conduct Problems and Peer Problems.
**eTable 13. Two-Year Analyses With Physical Victimization**

| Variable                               | Phenotypic |                  |                  |                  |                  |
|----------------------------------------|------------|------------------|------------------|------------------|------------------|
|                                        | B 95% CI   | B 95% CI         | B 95% CI         |                  |                  |
| SDQ Total Difficulties (Child)         | .137 (.105, .170) | .194 (.106, .287) | .046 (-.047, .138) |                  |                  |
| SDQ including Peer Problems (Child)    | .176 (.143, .209) | .205 (.121, .297) | .057 (-.028, .153) |                  |                  |
| ARBQ-Anxiety (Parent)                  | .015 (-.016, .046) | .018 (-.062, .087) | .061 (.004, .131) |                  |                  |
| CASI-Anxiety (Child)                   | -.005 (-.035, .030) | .080 (.002, .160) | .049 (-.033, .136) |                  |                  |
| SDQ-Anxiety (Child)                    | -.006 (-.036, .026) | .062 (-.020, .137) | .086 (-.075, .086) |                  |                  |
| MFQ-Depression (Parent)                | .073 (.039, .110) | .078 (.010, .183) | .037 (-.035, .114) |                  |                  |
| MFQ-Depression (Child)                 | .070 (.038, .105) | .092 (.022, .163) | -.001 (-.098, .101) |                  |                  |
| SDQ-Hyperactivity (Parent)             | .182 (.149, .216) | .115 (.033, .209) | .042 (-.022, .113) |                  |                  |
| SDQ-Hyperactivity (Child)              | .159 (.129, .191) | .206 (.117, .304) | .069 (.021, .157) |                  |                  |
| Conners Total (Parent)                 | .193 (.158, .232) | .097 (.031, .189) | .042 (-.007, .120) |                  |                  |
| Conners Hyperactivity-Impulsivity (Parent) | .134 (.097, .179) | .091 (.027, .191) | .040 (-.010, .103) |                  |                  |
| Conners Inattention (Parent)           | .196 (.161, .233) | .081 (.010, .159) | .035 (-.021, .110) |                  |                  |
| SDQ-Conduct Problems (Parent)          | .134 (.100, .170) | .127 (.047, .215) | .042 (-.012, .101) |                  |                  |
| SDQ-Conduct Problems (Child)           | .182 (.148, .217) | .166 (.063, .268) | .013 (-.093, .119) |                  |                  |
| SDQ-Prosocial (Parent)                 | -.078 (-.108, -.051) | .040 (-.019, .103) | -.030 (-.083, .013) |                  |                  |
| SDQ-Prosocial (Child)                  | -.122 (-.153, -.091) | -.029 (-.108, .046) | -.036 (-.134, .065) |                  |                  |
| SDQ-Peer Problems (Child)              | .198 (.164, .234) | .127 (.038, .211) | .052 (-.043, .147) |                  |                  |
| SPEQ-Paranoid Thoughts (Child)         | .210 (.175, .247) | .140 (.065, .219) | .163 (.072, .263) |                  |                  |
| SPEQ-Hallucinations (Child)            | .115 (.081, .151) | .098 (.012, .180) | .027 (-.089, .122) |                  |                  |
| SPEQ-Grandiosity (Child)               | .071 (.040, .104) | .076 (-.010, .165) | -.061 (-.149, .020) |                  |                  |
| SPEQ-Cognitive Disorganisation (Child) | .076 (.047, .105) | .158 (.085, .234) | .052 (-.029, .132) |                  |                  |
| SPEQ-Anhedonia (Child)                 | .138 (.105, .169) | .010 (-.076, .098) | .038 (-.063, .132) |                  |                  |
| SPEQ-Negative Symptoms (Parent)        | .100 (.067, .135) | -.042 (-.127, .030) | -.007 (-.053, .043) |                  |                  |

Note: Significant estimates are presented in bold. SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxiety, Hyperactivity, Conduct Problems and Peer Problems.
### eTable 14. Concurrent Analyses With Verbal Victimization

| Variable                              | Phenotypic |            |            |            |            |            |
|---------------------------------------|------------|------------|------------|------------|------------|------------|
|                                       |            | B          | 95% CI     | B          | 95% CI     | B          | 95% CI     |
| SDQ Total Difficulties (Parent)       | 0.202      | (0.183, 0.221) | 0.146      | (0.101, 0.193) | 0.028      | (-0.004, 0.058) |
| SDQ Total Difficulties (Teacher)      | 0.177      | (0.151, 0.203) | 0.098      | (0.037, 0.163) | 0.042      | (-0.010, 0.094) |
| SDQ Total Difficulties (Child)        | 0.352      | (0.332, 0.371) | 0.300      | (0.249, 0.352) | 0.177      | (0.127, 0.226) |
| SDQ including Peer Problems (Parent)  | 0.239      | (0.220, 0.259) | 0.196      | (0.152, 0.240) | 0.047      | (0.017, 0.077) |
| SDQ including Peer Problems (Teacher) | 0.197      | (0.171, 0.223) | 0.114      | (0.053, 0.177) | 0.077      | (0.027, 0.129) |
| SDQ including Peer Problems (Child)   | 0.405      | (0.386, 0.424) | 0.364      | (0.314, 0.412) | 0.212      | (0.164, 0.260) |
| SDQ-Anxiety (Parent)                  | 0.134      | (0.114, 0.154) | 0.136      | (0.083, 0.189) | 0.064      | (0.018, 0.111) |
| SDQ-Anxiety (Teacher)                 | 0.141      | (0.115, 0.167) | 0.114      | (0.041, 0.188) | 0.108      | (0.045, 0.169) |
| SDQ-Anxiety (Child)                   | 0.296      | (0.277, 0.317) | 0.279      | (0.221, 0.335) | 0.214      | (0.163, 0.267) |
| MFSQ-Depression (Parent)              | 0.172      | (0.151, 0.193) | 0.168      | (0.119, 0.224) | 0.075      | (0.027, 0.128) |
| MFSQ-Depression (Child)               | 0.373      | (0.351, 0.395) | 0.382      | (0.327, 0.443) | 0.280      | (0.222, 0.337) |
| SDQ-Hyperactivity (Parent)            | 0.184      | (0.164, 0.205) | 0.101      | (0.046, 0.157) | 0.066      | (-0.038, 0.026) |
| SDQ-Hyperactivity (Teacher)           | 0.138      | (0.113, 0.162) | 0.060      | (-0.002, 0.124) | 0.008      | (-0.059, 0.046) |
| SDQ-Hyperactivity (Child)             | 0.233      | (0.215, 0.254) | 0.180      | (0.128, 0.232) | 0.063      | (0.016, 0.112) |
| Connors Total (Parent)                | 0.190      | (0.171, 0.210) | 0.134      | (0.091, 0.179) | 0.016      | (-0.011, 0.043) |
| Connors Hyperactivity-Impulsivity (Parent) | 0.156      | (0.137, 0.176) | 0.127      | (0.083, 0.171) | 0.005      | (-0.022, 0.030) |
| Connors Inattention (Parent)          | 0.190      | (0.169, 0.210) | 0.115      | (0.066, 0.167) | 0.022      | (-0.009, 0.055) |
| SDQ-Conduct Problems (Parent)         | 0.152      | (0.133, 0.172) | 0.084      | (0.040, 0.130) | 0.006      | (-0.026, 0.037) |
| SDQ-Conduct Problems (Teacher)        | 0.118      | (0.092, 0.144) | 0.036      | (-0.027, 0.101) | 0.002      | (-0.055, 0.053) |
| SDQ-Conduct Problems (Child)          | 0.296      | (0.276, 0.315) | 0.238      | (0.184, 0.293) | 0.141      | (0.088, 0.195) |
| SDQ-Prosocial (Parent)                | -0.028     | (-0.047, -0.010) | 0.052      | (0.006, 0.098) | 0.001      | (-0.035, 0.034) |
| SDQ-Prosocial (Teacher)               | -0.070     | (-0.094, -0.046) | 0.007      | (-0.050, 0.063) | 0.008      | (-0.060, 0.043) |
| SDQ-Prosocial (Child)                 | -0.038     | (-0.058, -0.019) | 0.020      | (-0.032, 0.071) | 0.007      | (-0.057, 0.042) |
| SDQ-Peer Problems (Parent)            | 0.250      | (0.229, 0.272) | 0.250      | (0.197, 0.304) | 0.082      | (0.049, 0.115) |
| SDQ-Peer Problems (Teacher)           | 0.170      | (0.144, 0.197) | 0.106      | (0.044, 0.170) | 0.137      | (0.087, 0.192) |
| SDQ-Peer Problems (Child)             | 0.375      | (0.354, 0.398) | 0.376      | (0.318, 0.435) | 0.211      | (0.152, 0.273) |

**Note:** Significant estimates are presented in bold. SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxiety, Hyperactivity, Conduct Problems and Peer Problems.
**eTable 15. Five-Year Analyses With Verbal Victimization**

| Variable                                    | Phenotypic | DZ Differences | MZ Differences |
|---------------------------------------------|------------|---------------|---------------|
|                                             | B 95% CI   | B 95% CI      | B 95% CI      |
| SDQ Total Difficulties (Child)              | .161 (.137, .184) | .132 (.074, .192) | .031 (-.023, .088) |
| SDQ including Peer Problems (Child)         | .187 (.163, .210) | .149 (.090, .208) | .043 (-.014, .100) |
| ARBQ-Anxiety (Parent)                       | .065 (.042, .089) | .052 (.000, .109) | .084 (.034, .142) |
| CASI-Anxiety (Child)                        | .091 (.067, .117) | .108 (.048, .170) | .010 (-.050, .071) |
| SDQ-Anxiety (Child)                         | .084 (.060, .108) | .083 (.022, .145) | .028 (-.032, .089) |
| MFQ-Depression (Parent)                     | .094 (.067, .120) | .082 (.021, .152) | .050 (-.007, .120) |
| MFQ-Depression (Child)                      | .121 (.100, .147) | .107 (.041, .173) | .037 (-.036, .104) |
| SDQ-Hyperactivity (Parent)                  | .152 (.127, .176) | .117 (.051, .182) | .036 (.005, .076) |
| SDQ-Hyperactivity (Child)                   | .142 (.120, .166) | .101 (.036, .167) | .033 (-.025, .092) |
| Conners Total (Parent)                      | .163 (.140, .188) | .111 (.058, .168) | .019 (-.015, .056) |
| Conners Hyperactivity-Impulsivity (Parent)  | .122 (.098, .147) | .124 (.068, .185) | .003 (-.034, .038) |
| Conners Inattention (Parent)                | .164 (.141, .188) | .079 (.015, .139) | .025 (-.012, .065) |
| SDQ-Conduct Problems (Parent)               | .125 (.102, .149) | .071 (.013, .132) | .067 (-.036, .050) |
| SDQ-Conduct Problems (Child)                | .152 (.127, .176) | .115 (.046, .184) | -.004 (-.067, .060) |
| SDQ-Prosocial (Parent)                      | -.023 (-.045, -.002) | .057 (.009, .108) | .007 (-.025, .036) |
| SDQ-Prosocial (Child)                       | -.058 (-.082, -.034) | .035 (-.027, .096) | -.010 (-.072, .051) |
| SDQ-Peer Problems (Child)                   | .168 (.143, .192) | .117 (.053, .181) | -.060 (-.002, .121) |
| SPEQ-Paranoid Thoughts (Child)              | .202 (.178, .228) | .154 (.094, .214) | .039 (-.014, .096) |
| SPEQ-Hallucinations (Child)                 | .124 (.099, .148) | .069 (.005, .135) | -.002 (-.068, .061) |
| SPEQ-Grandiosity (Child)                    | .028 (.004, .052) | -.003 (-.065, .062) | -.019 (-.074, .035) |
| SPEQ-Cognitive Disorganisation (Child)       | .130 (.105, .154) | .114 (.048, .180) | .046 (-.010, .102) |
| SPEQ-Anhedonia (Child)                      | .097 (.073, .121) | .003 (-.059, .066) | .007 (-.061, .072) |
| SPEQ-Negative Symptoms (Parent)             | .086 (.062, .110) | -.014 (-.069, .045) | .041 (.007, .080) |

*Note:* Significant estimates are presented in bold. SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxiety, Hyperactivity, Conduct Problems and Peer Problems.
| Variable                                      | Phenotypic B (95% CI)       | DZ Differences B (95% CI) | MZ Differences B (95% CI) |
|----------------------------------------------|----------------------------|--------------------------|--------------------------|
| SDQ Total Difficulties (Child)              | .206 (.176,.237)           | .217 (.133,.301)         | .073 (.002,.144)         |
| SDQ including Peer Problems (Child)         | .243 (.212,.273)           | .240 (.160,.323)         | .079 (.008,.148)         |
| ARBQ-Anxiety (Parent)                       | .068 (.040,.097)           | .051 (-.006,.108)        | .041 (-.016,.097)        |
| CASI-Anxiety (Child)                        | .123 (.093,.154)           | .097 (.022,.173)         | .145 (.074,.213)         |
| SDQ-Anxiety (Child)                         | .126 (.095,.158)           | .137 (.049,.221)         | .091 (.018,.166)         |
| MFQ-Depression (Parent)                     | .101 (.070,.132)           | .108 (.043,.185)         | .008 (-.079,.080)        |
| MFQ-Depression (Child)                      | .176 (.145,.207)           | .162 (.092,.234)         | .054 (-.038,.139)        |
| SDQ-Hyperactivity (Parent)                  | .133 (.103,.163)           | .069 (-.006,.147)        | .011 (-.058,.039)        |
| SDQ-Hyperactivity (Child)                   | .154 (.124,.184)           | .166 (.080,.254)         | .003 (-.075,.070)        |
| Conners Total (Parent)                      | .141 (.114,.170)           | .078 (.019,.141)         | - .013 (-.051,.027)      |
| Conners Hyperactivity-Impulsivity (Parent)  | .098 (.070,.127)           | .066 (.008,.129)         | -.039 (-.081,-.01)       |
| Conners Inattention (Parent)                | .146 (.117,.177)           | .071 (.066,.139)         | .007 (-.034,.049)        |
| SDQ-Conduct Problems (Parent)               | .133 (.103,.163)           | .096 (.028,.170)         | .040 (-.011,.095)        |
| SDQ-Conduct Problems (Child)                | .191 (.160,.223)           | .180 (.093,.266)         | .061 (-.003,.166)        |
| SDQ-Prosocial (Parent)                      | -.053 (-.078,-.029)        | .012 (-.039,.063)        | -.012 (-.050,.022)       |
| SDQ-Prosocial (Child)                       | -.061 (-.092,-.031)        | -.010 (-.079,.060)       | -.035 (-.119,.048)       |
| SDQ-Peer Problems (Child)                   | .225 (.194,.256)           | .179 (.096,.258)         | .052 (-.020,.126)        |
| SPEQ-Paranoid Thoughts (Child)              | .313 (.282,.344)           | .229 (.156,.303)         | .176 (.101,.257)         |
| SPEQ-Hallucinations (Child)                 | .186 (.156,.217)           | .127 (.053,.201)         | .069 (-.013,.152)        |
| SPEQ-Grandiosity (Child)                    | .033 (.003,.063)           | .064 (-.014,.140)        | -.084 (-.164,-.005)      |
| SPEQ-Cognitive Disorganisation (Child)      | .163 (.133,.193)           | .170 (.092,.250)         | .108 (.035,.180)         |
| SPEQ-Anhedonia (Child)                      | .119 (.089,.149)           | .079 (-.005,.161)        | .041 (-.036,.118)        |
| SPEQ-Negative Symptoms (Parent)             | .077 (.048,.105)           | -.005 (-.062,.054)       | .016 (-.028,.056)        |

Note: Significant estimates are presented in bold. SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxiety, Hyperactivity, Conduct Problems and Peer Problems.
| Variable                              | Phenotypic | DZ Differences | MZ Differences |
|---------------------------------------|------------|----------------|----------------|
|                                       | B          | 95% CI         | B              | 95% CI         | B              | 95% CI         |
| SDQ Total Difficulties (Parent)      | .168       | (.148,.187)    | .150           | (.105,.194)    | .023           | (.006,.053)    |
| SDQ Total Difficulties (Teacher)     | .143       | (.117,.169)    | .105           | (.042,.175)    | .055           | (.004,.103)    |
| SDQ Total Difficulties (Child)       | .327       | (.307,.346)    | .278           | (.227,.330)    | .214           | (.167,.260)    |
| SDQ including Peer Problems (Parent) | .189       | (.170,.209)    | .175           | (.132,.218)    | .033           | (.004,.061)    |
| SDQ including Peer Problems (Teacher)| .148       | (.123,.175)    | .123           | (.063,.185)    | .071           | (.022,.120)    |
| SDQ including Peer Problems (Child)  | .364       | (.344,.384)    | .322           | (.270,.375)    | .231           | (.186,.280)    |
| SDQ-Anxiety (Parent)                 | .123       | (.104,.144)    | .084           | (.032,.135)    | .008           | (.033,.049)    |
| SDQ-Anxiety (Teacher)                | .122       | (.096,.148)    | .108           | (.046,.176)    | .113           | (.052,.172)    |
| SDQ-Anxiety (Child)                  | .301       | (.280,.322)    | .231           | (.174,.288)    | .226           | (.171,.279)    |
| MFQ-Depression (Parent)              | .151       | (.129,.173)    | .130           | (.080,.186)    | .050           | (.008,.090)    |
| MFQ-Depression (Child)               | .359       | (.336,.383)    | .336           | (.277,.395)    | .299           | (.242,.356)    |
| SDQ-Hyperactivity (Parent)           | .137       | (.117,.158)    | .127           | (.074,.178)    | .021           | (.010,.053)    |
| SDQ-Hyperactivity (Teacher)          | .106       | (.081,.131)    | .082           | (.021,.146)    | .019           | (.030,.066)    |
| SDQ-Hyperactivity (Child)            | .202       | (.182,.222)    | .179           | (.127,.231)    | .102           | (.056,.149)    |
| Conners Total (Parent)               | .148       | (.128,.169)    | .137           | (.096,.181)    | .022           | (.002,.049)    |
| Conners Hyperactivity-Impusivity (Parent) | .136     | (.116,.156)    | .141           | (.098,.185)    | .004           | (.017,.028)    |
| Conners Inattention (Parent)         | .139       | (.118,.159)    | .109           | (.062,.158)    | .033           | (.003,.065)    |
| SDQ-Conduct Problems (Parent)        | .145       | (.124,.165)    | .126           | (.082,.174)    | .026           | (.005,.057)    |
| SDQ-Conduct Problems (Teacher)       | .093       | (.067,.120)    | .027           | (.040,.097)    | -.021          | (.071,.030)    |
| SDQ-Conduct Problems (Child)         | .268       | (.248,.288)    | .238           | (.185,.292)    | .170           | (.118,.222)    |
| SDQ-Prosocial (Parent)               | .021       | (.003,.038)    | .037           | (.002,.078)    | .001           | (.028,.032)    |
| SDQ-Prosocial (Teacher)              | -.001      | (.025,.023)    | .029           | (.026,.087)    | -.020          | (.072,.032)    |
| SDQ-Prosocial (Child)                | .045       | (.025,.063)    | .032           | (.018,.082)    | .002           | (.042,.047)    |
| SDQ-Peer Problems (Parent)           | .181       | (.158,.203)    | .167           | (.116,.218)    | .045           | (.012,.081)    |
| SDQ-Peer Problems (Teacher)          | .103       | (.077,.130)    | .120           | (.065,.178)    | .080           | (.027,.136)    |
| SDQ-Peer Problems (Child)            | .307       | (.284,.330)    | .295           | (.235,.357)    | .172           | (.112,.231)    |

**Note:** Significant estimates are presented in bold. SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxiety, Hyperactivity, Conduct Problems, and Peer Problems.
| Variable | Phenotypic | DZ Differences | MZ Differences |
|----------|------------|----------------|---------------|
|          | B 95% CI   | B 95% CI       | B 95% CI      |
| SDQ Total Difficulties (Child) | .179 (.155,.204) | .152 (.092,.214) | .062 (.007,1.17) |
| SDQ including Peer Problems (Child) | .188 (.164,.213) | .153 (.095,.211) | .061 (.007,1.16) |
| ARBQ-Anxiety (Parent) | .074 (.050,.099) | .036 (-.017,.084) | .001 (-.044,.044) |
| CASI-Anxiety (Child) | .139 (.114,.164) | .121 (.057,.185) | .020 (-.030,.070) |
| SDQ-Anxiety (Child) | .117 (.093,.142) | .077 (.020,.135) | .026 (-.032,.084) |
| MFQ-Depression (Parent) | .102 (.075,.128) | .028 (-.026,.080) | .026 (-.085,.027) |
| MFQ-Depression (Child) | .132 (.110,.157) | .070 (.006,.130) | .043 (-.021,.110) |
| SDQ-Hyperactivity (Parent) | .119 (.094,.144) | .095 (.025,.169) | .026 (-.008,.070) |
| SDQ-Hyperactivity (Child) | .151 (.128,.174) | .143 (.077,.208) | .057 (-.002,1.16) |
| Conners Total (Parent) | .123 (.098,.148) | .062 (.002,.127) | .026 (-.011,.068) |
| Conners Hyperactivity-Impulsivity (Parent) | .127 (.102,.155) | .079 (.015,.150) | .020 (-.016,.059) |
| Conners Inattention (Parent) | .105 (.080,.130) | .038 (-.022,.099) | .024 (-.016,.070) |
| SDQ-Conduct Problems (Parent) | .107 (.083,.132) | .050 (-.011,.116) | .004 (-.038,.052) |
| SDQ-Conduct Problems (Child) | .144 (.119,.170) | .116 (.045,.217) | .057 (-.005,.119) |
| SDQ-Prosocial (Parent) | .010 (.011,.030) | .024 (.031,.073) | .014 (-.014,.041) |
| SDQ-Prosocial (Child) | .005 (.019,.029) | .014 (-.004,.073) | .003 (-.063,.059) |
| SDQ-Peer Problems (Child) | .119 (.094,.144) | .069 (.011,.127) | .029 (-.029,.091) |
| SPEQ-Paranoid Thoughts (Child) | .173 (.147,.200) | .114 (.056,.174) | .059 (.003,.118) |
| SPEQ-Hallucinations (Child) | .135 (.111,.160) | .067 (.007,.126) | .063 (-.002,.130) |
| SPEQ-Grandiosity (Child) | .013 (.009,.037) | -.011 (-.070,.047) | -.007 (-.064,.050) |
| SPEQ-Cognitive Disorganisation (Child) | .153 (.130,.177) | .123 (.064,.181) | .092 (.037,.147) |
| SPEQ-Anhedonia (Child) | .060 (.037,.084) | .016 (.042,.076) | -.011 (-.074,.050) |
| SPEQ-Negative Symptoms (Parent) | .056 (.034,.080) | -.003 (-.056,.050) | -.013 (-.047,.019) |

**Note:** Significant estimates are presented in **bold**. SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxious, Hyperactivity, Conduct Problems and Peer Problems.
### eTable 19. Two-Year Analyses With Social Victimization

| Variable                                      | Phenotypic | DZ Differences | MZ Differences |
|-----------------------------------------------|------------|----------------|----------------|
|                                               | B 95% CI   | B 95% CI       | B 95% CI       |
| SDQ Total Difficulties (Child)                | .238 (.206, .269) | .169 (.087, .256) | .112 (.044, .179) |
| SDQ including Peer Problems (Child)           | .268 (.236, .301) | .188 (.104, .277) | .122 (.058, .190) |
| ARBQ-Anxiety (Parent)                         | .091 (.061, .123) | .027 (-.032, .088) | .034 (.018, .093) |
| CASI-Anxiety (Child)                          | .192 (.160, .225) | .137 (.062, .215) | .117 (.050, .184) |
| SDQ-Anxiety (Child)                           | .186 (.155, .216) | .071 (-.002, .148) | .135 (.072, .196) |
| MFQ-Depression (Parent)                       | .129 (.096, .166) | .062 (-.009, .129) | -.009 (-.078, .060) |
| MFQ-Depression (Child)                        | .210 (.175, .245) | .168 (.098, .239) | .090 (.014, .163) |
| SDQ-Hyperactivity (Parent)                    | .105 (.076, .135) | .097 (.021, .176) | .032 (-.019, .086) |
| SDQ-Hyperactivity (Child)                     | .163 (.133, .194) | .144 (.055, .233) | .059 (-.014, .131) |
| Conners Total (Parent)                        | .112 (.081, .143) | .089 (.026, 1.050) | .028 (-.015, .083) |
| Conners Hyperactivity-Impulsivity (Parent)    | .102 (.071, .135) | .059 (-.004, .122) | .003 (-.039, .052) |
| Conners Inattention (Parent)                  | .103 (.072, .134) | .092 (.023, .161) | .038 (-.009, .096) |
| SDQ-Conduct Problems (Parent)                 | .124 (.093, .155) | .111 (.043, .180) | .013 (-.033, .083) |
| SDQ-Conduct Problems (Child)                  | .186 (.153, .221) | .178 (.075, .280) | .034 (-.048, .113) |
| SDQ-Prosocial (Parent)                        | -.003 (-.028, .023) | .023 (-.034, .078) | -.008 (-.042, .025) |
| SDQ-Prosocial (Child)                         | .031 (.002, .060) | .035 (-.041, .112) | -.051 (-.122, .021) |
| SDQ-Peer Problems (Child)                     | .216 (.182, .249) | .142 (.049, .233) | .084 (.016, .156) |
| SPEQ-Paranoid Thoughts (Child)                | .290 (.257, .325) | .210 (.137, .285) | .187 (.113, .261) |
| SPEQ-Hallucinations (Child)                   | .204 (.170, .239) | .124 (.043, .206) | .125 (.052, .205) |
| SPEQ-Grandiosity (Child)                      | .038 (.007, .070) | .089 (.006, .171) | -.015 (-.081, .051) |
| SPEQ-Cognitive Disorganisation (Child)        | .224 (.195, .255) | .179 (.104, .255) | .126 (.063, .189) |
| SPEQ-Anhedonia (Child)                        | .096 (.065, .128) | .037 (-.044, .116) | .045 (-.025, .114) |
| SPEQ-Negative Symptoms (Parent)               | .040 (.010, .071) | -.018 (-.085, .047) | -.013 (-.050, .024) |

**Note:** Significant estimates are presented in bold. SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxiety, Hyperactivity, Conduct Problems, and Peer Problems.
| Variable                                      | Phenotypic         | DZ Differences | MZ Differences |
|----------------------------------------------|--------------------|----------------|----------------|
| SDQ Total Difficulties (Parent)              | 0.149 (0.130,0.170)| 0.085 (0.038,0.130) | 0.030 (0.001,0.060) |
| SDQ Total Difficulties (Teacher)             | 0.130 (0.104,0.156)| 0.068 (0.010,0.129) | 0.052 (0.002,0.103) |
| SDQ Total Difficulties (Child)               | 0.281 (0.260,0.301)| 0.184 (0.134,0.234) | 0.128 (0.079,0.177) |
| SDQ including Peer Problems (Parent)         | 0.172 (0.152,0.193)| 0.108 (0.065,0.152) | 0.044 (0.015,0.074) |
| SDQ including Peer Problems (Teacher)        | 0.143 (0.117,0.169)| 0.077 (0.021,0.134) | 0.064 (0.016,0.112) |
| SDQ including Peer Problems (Child)          | 0.318 (0.298,0.339)| 0.220 (0.172,0.268) | 0.143 (0.094,0.191) |
| SDQ-Anxiety (Parent)                         | 0.082 (0.062,0.103)| 0.065 (0.018,0.112) | 0.026 (-0.017,0.077) |
| SDQ-Anxiety (Teacher)                        | 0.085 (0.060,0.111)| 0.090 (0.031,0.150) | 0.039 (-0.022,0.097) |
| SDQ-Anxiety (Child)                          | 0.223 (0.202,0.244)| 0.170 (0.119,0.220) | 0.142 (0.090,0.194) |
| MFQ-Depression (Parent)                      | 0.125 (0.103,0.150)| 0.096 (0.045,0.151) | 0.062 (0.014,0.107) |
| MFQ-Depression (Child)                       | 0.309 (0.285,0.334)| 0.243 (0.187,0.299) | 0.222 (0.169,0.277) |
| SDQ-Hyperactivity (Parent)                   | 0.153 (0.133,0.174)| 0.061 (0.007,0.114) | 0.023 (-0.005,0.053) |
| SDQ-Hyperactivity (Teacher)                  | 0.117 (0.092,0.143)| 0.049 (-0.011,0.107) | 0.058 (0.012,0.106) |
| SDQ-Hyperactivity (Child)                    | 0.198 (0.178,0.218)| 0.104 (0.054,0.154) | 0.054 (0.008,0.104) |
| Conners Total (Parent)                       | 0.159 (0.138,0.180)| 0.085 (0.038,0.136) | 0.019 (-0.006,0.044) |
| Conners Hyperactivity-Impulsivity (Parent)   | 0.121 (0.100,0.143)| 0.070 (0.022,0.119) | 0.012 (-0.010,0.036) |
| Conners Inattention (Parent)                 | 0.169 (0.148,0.190)| 0.083 (0.036,0.135) | 0.022 (-0.007,0.054) |
| SDQ-Conduct Problems (Parent)                | 0.116 (0.095,0.138)| 0.064 (0.015,0.117) | 0.017 (-0.013,0.048) |
| SDQ-Conduct Problems (Teacher)               | 0.083 (0.057,0.112)| 0.002 (-0.064,0.066) | 0.005 (-0.052,0.063) |
| SDQ-Conduct Problems (Child)                 | 0.245 (0.224,0.267)| 0.154 (0.097,0.207) | 0.104 (0.054,0.158) |
| SDQ-Prosocial (Parent)                       | -0.033 (-0.051,-0.015)| 0.011 (-0.035,0.057) | 0.000 (-0.026,0.027) |
| SDQ-Prosocial (Teacher)                      | -0.058 (-0.081,-0.034)| -0.004 (-0.060,0.051) | -0.024 (-0.069,0.020) |
| SDQ-Prosocial (Child)                        | -0.022 (-0.041,-0.002)| 0.017 (-0.035,0.069) | 0.018 (-0.027,0.061) |
| SDQ-Peer Problems (Parent)                   | 0.175 (0.151,0.199)| 0.124 (0.088,0.177) | 0.065 (0.027,0.105) |
| SDQ-Peer Problems (Teacher)                  | 0.115 (0.088,0.142)| 0.066 (0.010,0.127) | 0.070 (0.011,0.124) |
| SDQ-Peer Problems (Child)                    | 0.288 (0.264,0.312)| 0.221 (0.162,0.279) | 0.117 (0.057,0.172) |

**Note:** Significant estimates are presented in **bold**. SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxiety, Hyperactivity, Conduct Problems and Peer Problems.
## eTable 21. Five-Year Analyses With Property-Related Victimization

| Variable                                      | Phenotypic          | DZ Differences | MZ Differences |
|-----------------------------------------------|---------------------|----------------|----------------|
|                                               | B      | 95% CI       | B       | 95% CI       | B      | 95% CI       |
| SDQ Total Difficulties (Child)                | .117   | (.093, .141) | .052   | (-.008, .111) | .000   | (-.052, .050) |
| SDQ including Peer Problems (Child)           | .132   | (.108, .156) | .056   | (-.004, .114) | .004   | (-.048, .056) |
| ARBQ-Anger (Parent)                           | .029   | (.005, .053) | .031   | (-.018, .092) | -.001  | (-.061, .047) |
| CASI-Anger (Child)                            | .064   | (.040, .090) | .088   | (.333, .144)  | .016   | (-.032, .067) |
| SDQ-Anger (Child)                             | .042   | (.017, .066) | .038   | (-.022, .094) | .003   | (-.046, .054) |
| MFQ-Depression (Parent)                       | .060   | (.035, .087) | .040   | (-.015, .105) | -.052  | (-.141, .003) |
| MFQ-Depression (Child)                        | .090   | (.065, .117) | .043   | (-.021, .104) | -.019  | (-.079, .039) |
| SDQ-Hyperactivity (Parent)                    | .120   | (.096, .145) | .077   | (.011, .145)  | .002   | (-.038, .043) |
| SDQ-Hyperactivity (Child)                     | .123   | (.100, .146) | .039   | (-.022, .100) | .011   | (-.046, .070) |
| Conners Total (Parent)                        | .125   | (.098, .151) | .060   | (.000, .126)  | .037   | (.002, .078)  |
| Conners Hyperactivity-Impulsivity (Parent)    | .089   | (.062, .118) | .064   | (-.004, .138) | .020   | (.018, .059)  |
| Conners Inattention (Parent)                  | .130   | (.104, .157) | .045   | (-.019, .111) | .040   | (.003, .086)  |
| SDQ-Conduct Problems (Parent)                 | .074   | (.048, .100) | .027   | (-.031, .092) | -.004  | (-.046, .038) |
| SDQ-Conduct Problems (Child)                  | .119   | (.093, .144) | .036   | (-.033, .104) | -.023  | (-.083, .035) |
| SDQ-Prosocial (Parent)                        | -.024  | (-.045, -.004) | -.009  | (-.063, .043) | .012   | (-.011, .035) |
| SDQ-Prosocial (Child)                         | -.046  | (-.070, -.022) | .011   | (-.048, .071) | -.006  | (-.061, .048) |
| SDQ-Peer Problems (Child)                     | .114   | (.089, .140) | .038   | (-.021, .097) | .018   | (.040, .074)  |
| SPEQ-Paranoid Thoughts (Child)                | .149   | (.124, .176) | .068   | (.008, .125)  | .046   | (.006, .099)  |
| SPEQ-Hallucinations (Child)                   | .117   | (.092, .144) | .057   | (-.010, .120) | .050   | (.007, .112)  |
| SPEQ-Grandiosity (Child)                      | .036   | (.012, .061) | -.007  | (-.067, .052) | -.011  | (-.063, .043) |
| SPEQ-Cognitive Disorganisation (Child)        | .090   | (.067, .113) | .050   | (-.006, .108) | .015   | (-.039, .073) |
| SPEQ-Anhedonia (Child)                        | .088   | (.065, .112) | .022   | (-.037, .079) | .029   | (.033, .089)  |
| SPEQ-Negative Symptoms (Parent)               | .072   | (.047, .098) | .030   | (-.036, .096) | .025   | (.013, .057)  |

**Note:** Significant estimates are presented in bold. SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxiety, Hyperactivity, Conduct Problems and Peer Problems.
### eTable 22. Two-Year Analyses With Property-Related Victimization

| Variable                                      | Phenotypic | DZ Differences | MZ Differences |
|-----------------------------------------------|------------|----------------|----------------|
|                                               | B          | 95% CI         | B              | 95% CI         | B              | 95% CI         |
| SDQ Total Difficulties (Child)                | .148       | (.115,.180)    | .154           | (.074,.240)    | .021           | (.047,.088)    |
| SDQ including Peer Problems (Child)           | .185       | (.153,.217)    | .177           | (.099,.261)    | .016           | (.048,.081)    |
| ARBQ-Anxiety (Parent)                         | .056       | (.024,.089)    | .057           | (.004,.128)    | .067           | (.013,.137)    |
| CASI-Anxiety (Child)                          | .071       | (.030,.105)    | .091           | (.023,.161)    | .030           | (.034,.097)    |
| SDQ-Anxiety (Child)                           | .070       | (.039,.100)    | .074           | (.003,.147)    | .028           | (.034,.094)    |
| MFQ-Depression (Parent)                       | .086       | (.053,.123)    | .059           | (.025,.138)    | .035           | (.026,.095)    |
| MFQ-Depression (Child)                        | .114       | (.081,.148)    | .064           | (.012,.146)    | .012           | (.062,.085)    |
| SDQ-Hyperactivity (Parent)                    | .132       | (.101,.165)    | .078           | (.006,.158)    | .036           | (.016,.106)    |
| SDQ-Hyperactivity (Child)                     | .133       | (.101,.163)    | .143           | (.062,.229)    | .013           | (.056,.082)    |
| Conners Total (Parent)                        | .131       | (.097,.167)    | .043           | (.033,.104)    | .022           | (.026,.119)    |
| Conners Hyperactivity-Impulsivity (Parent)    | .083       | (.050,.121)    | .007           | (.079,.061)    | .010           | (.035,.093)    |
| Conners Inattention (Parent)                  | .139       | (.105,.176)    | .068           | (.012,.138)    | .026           | (.023,.115)    |
| SDQ-Conduct Problems (Parent)                 | .082       | (.051,.115)    | .050           | (.027,.120)    | -.006          | (.051,.039)    |
| SDQ-Conduct Problems (Child)                  | .140       | (.107,.175)    | .125           | (.028,.220)    | -.001          | (.081,.075)    |
| SDQ-Prosocial (Parent)                        | -.051      | (-.079,-.025)  | .014           | (.040,.077)    | -.016          | (.052,.020)    |
| SDQ-Prosocial (Child)                         | -.057      | (-.088,-.026)  | -.017          | (.085,.049)    | -.020          | (.100,.061)    |
| SPEQ-Paranoid Thoughts (Child)                | .200       | (.166,.235)    | .149           | (.061,.237)    | -.010          | (.080,.056)    |
| SPEQ-Hallucinations (Child)                   | .240       | (.206,.276)    | .179           | (.112,.254)    | .093           | (.022,.168)    |
| SPEQ-Grandiosity (Child)                      | .149       | (.114,.185)    | .103           | (.029,.179)    | .069           | (.008,.150)    |
| SPEQ-Cognitive Disorganisation (Child)         | .043       | (.012,.073)    | .004           | (.079,.084)    | -.046          | (-.112,.018)   |
| SPEQ-Anhedonia (Child)                        | .127       | (.096,.157)    | .160           | (.090,.232)    | .061           | (.010,.130)    |
| SPEQ-Negative Symptoms (Parent)               | .132       | (.102,.163)    | .074           | (.003,.146)    | -.003          | (.082,.071)    |

Note: Significant estimates are presented in **bold**. SDQ including Peer Problems refers to the four difficulty subscales of the SDQ: Anxiety, Hyperactivity, Conduct Problems and Peer Problems.
**eTable 23. Intercorrelations of Victimization Subscales at Concurrent**

|      | Physical | Verbal | Social | Property |
|------|----------|--------|--------|----------|
| Physical | (.81)    |        |        |          |
| Verbal  | .63      | (.82)  |        |          |
| Social  | .51      | .59    | (.80)  |          |
| Property| .57      | .55    | .54    | (.80)    |

*Note: Cronbach's alpha for each subscale is given down the diagonal in parentheses*
**eTable 24. Intercorrelations of Victimization Subscales at Age 14 Years**

|       | Physical | Verbal | Social | Property |
|-------|----------|--------|--------|----------|
| Physical | (.81)    |        |        |          |
| Verbal   | .53      | (.84)  |        |          |
| Social   | .42      | .58    | (.81)  |          |
| Property | .60      | .54    | .50    | (.83)    |

Note: Cronbach’s alpha for each subscale is given down the diagonal in parentheses.
| Outcome | Timing | Variable Name | Male model | Female model | Comparison model fits |
|---------|--------|---------------|------------|-------------|----------------------|
|         |        |               | B | 95% CI | B | 95% CI | χ² difference | p adjusted* | p adjusted* |
| **Total Difficulties** | | SDQ Total Difficulties (Parent) | .211 | .183 | .239 | .251 | .222 | .281 | 3.859 | .049 | .212 |
| Concurrent | | SDQ Total Difficulties (Teacher) | .205 | .164 | .245 | .195 | .156 | .231 | .130 | .719 | 1.000 |
| | | SDQ Total Difficulties (Child) | .377 | .350 | .404 | .425 | .397 | .453 | 5.777 | .016 | .089 |
| Five-year | | SDQ Total Difficulties (Child) | .152 | .118 | .186 | .218 | .184 | .252 | 7.348 | .007 | .050 |
| **Total Difficulties (Including peer problems)** | | SDQ including Peer Problems (Parent) | .255 | .226 | .283 | .282 | .252 | .312 | 1.684 | .194 | .484 |
| Concurrent | | SDQ including Peer Problems (Teacher) | .234 | .193 | .275 | .193 | .156 | .229 | 2.196 | .138 | .432 |
| | | SDQ including Peer Problems (Child) | .426 | .399 | .453 | .487 | .459 | .515 | 9.453 | .002 | .024 |
| Five-year | | SDQ including Peer Problems (Child) | .174 | .140 | .207 | .244 | .209 | .278 | 8.033 | .005 | .040 |
| **Anxiety & Depression** | | SDQ-Anxiety (Parent) | .114 | .087 | .141 | .168 | .138 | .199 | 6.654 | .010 | .060 |
| Concurrent | | SDQ-Anxiety (Teacher) | .164 | .126 | .203 | .129 | .091 | .167 | 1.677 | .195 | .484 |
| | | SDQ-Anxiety (Child) | .291 | .264 | .318 | .380 | .349 | .411 | 17.849 | .000 | .000 |
| | | MFQ-Depression (Parent) | .171 | .140 | .201 | .218 | .182 | .254 | 3.850 | .050 | .212 |
| | | MFQ-Depression (Child) | .388 | .357 | .419 | .472 | .436 | .508 | 12.321 | .000 | .000 |
| **Hyper-activity / Inattention / Impulsiveness** | | SDQ-Hyperactivity (Parent) | .198 | .169 | .227 | .227 | .198 | .256 | 1.883 | .170 | .484 |
| Concurrent | | SDQ-Hyperactivity (Teacher) | .174 | .136 | .212 | .142 | .108 | .175 | 1.564 | .211 | .506 |
| | | SDQ-Hyperactivity (Child) | .258 | .231 | .285 | .275 | .248 | .302 | .731 | .392 | .751 |
| | | Conners Total (Parent) | .223 | .192 | .254 | .230 | .201 | .260 | .112 | .738 | 1.000 |
| | | Conners Hyp-Impul (Parent) | .197 | .166 | .229 | .179 | .150 | .208 | .688 | .407 | .751 |
| | | Conners Inatt (Parent) | .209 | .180 | .238 | .237 | .207 | .267 | 1.688 | .194 | .484 |
| Five-year | | SDQ-Hyperactivity (Parent) | .175 | .139 | .212 | .172 | .135 | .208 | .021 | .886 | 1.000 |
| | | SDQ-Hyperactivity (Teacher) | .149 | .116 | .182 | .198 | .166 | .230 | 4.380 | .036 | .173 |
| | | SDQ-Hyperactivity (Child) | .222 | .181 | .263 | .148 | .115 | .182 | 7.749 | .005 | .040 |
| | | Conners Total (Parent) | .158 | .117 | .198 | .143 | .104 | .182 | .270 | .603 | 1.000 |
| | | Conners Hyp-Impul (Parent) | .213 | .173 | .252 | .145 | .112 | .177 | 7.011 | .008 | .052 |
| | | Conners Inatt (Parent) | .165 | .135 | .195 | .200 | .169 | .231 | 2.589 | .108 | .389 |
| **Conduct Problems** | | SDQ-CP (Parent) | .136 | .093 | .179 | .129 | .091 | .166 | .059 | .809 | 1.000 |
| Concurrent | | SDQ-CP (Teacher) | .328 | .298 | .357 | .351 | .323 | .379 | 1.233 | .267 | .580 |
| | | SDQ-CP (Child) | .153 | .115 | .190 | .117 | .083 | .152 | 1.811 | .178 | .484 |
| Five-year | | SDQ-CP (Parent) | .158 | .122 | .193 | .189 | .152 | .225 | 1.424 | .233 | .541 |
| **Pro-social** | | SDQ-Prosocial (Parent) | .011 | .015 | .037 | .060 | .066 | .033 | 14.436 | .000 | .000 |
| Concurrent | | SDQ-Prosocial (Teacher) | -.078 | -.113 | -.043 | -.051 | -.085 | -.017 | 1.195 | .274 | .580 |
| | | SDQ-Prosocial (Child) | -.021 | -.007 | .049 | -.052 | -.079 | -.025 | 13.998 | .000 | .000 |
| Five-year | | SDQ-Prosocial (Parent) | -.027 | -.060 | -.006 | -.024 | -.054 | -.006 | .021 | .885 | 1.000 |
| | | SDQ-Prosocial (Child) | -.037 | -.071 | -.002 | -.059 | -.092 | -.025 | .809 | .369 | .738 |

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### eTable 25. Moderation by Sex of Phenotypic Estimates, for Peer Victimization at Age 11 Years and Mental Health Outcomes at Age 11 Years (i.e. Concurrent Effect) and at Age 16 Years (i.e. Five-Year Effect)

|                      | Concurrent          |                              |                              |                              | Five-year         |                              |                              |                              |                              |                              | Five-year         |                              |                              |                              |                              |                              |
|----------------------|---------------------|------------------------------|------------------------------|------------------------------|---------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|---------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
|                      | SDQ-Peer Problems (Parent) | .266                        | .232                        | .301                        | .265               | .232                        | .296                        | .004                        | .948                        | 1.000                        | SDQ-Peer Problems (Parent) | .154                        | .189                        | .190                        | .189                        | .216                        | .993                        | .319                        | .656                        |
|                      | SDQ-Peer Problems (Teacher) | .189                        | .148                        | .231                        | .151               | .111                        | .190                        | 1.738                       | .187                        | .484                         | SDQ-Peer Problems (Teacher) | .056                        | .020                        | .091                        | .018                        | -.015                       | .050                        | .124                        | .406                        |
|                      | SDQ-Peer Problems (Child) | .388                        | .356                        | .421                        | -2.678             | .004                        | .948                        | 1.000                        |                              |                              | SDQ-Peer Problems (Child) | .135                        | .102                        | .196                        | .128                        | .196                        | 1.194                       | .274                        | .580                        |
|                      |                      |                              |                              |                              |                  |                              |                              |                              |                              |                              |                      |                              |                              |                              |                              |                              |                              |                              |
|                      | SPEQ-Paranoid Thoughts (Child) | .191                        | .155                        | .228                        | .233               | .195                        | .271                        | 2.442                       | .118                        | .405                         | SPEQ-Paranoid Thoughts (Child) | .095                        | .061                        | .129                        | .114                        | .081                        | .147                        | .613                        | .434                        | .781                        |
|                      | SPEQ-Hallucinations (Child) | .123                        | .088                        | .159                        | .171               | .136                        | .207                        | 3.397                       | .065                        | .260                         | SPEQ-Hallucinations (Child) | .092                        | .056                        | .127                        | .098                        | .062                        | .135                        | .062                        | .803                        | 1.000                       |
|                      | SPEQ-Grandiosity (Child) | .056                        | .020                        | .091                        | .018               | -.015                       | .050                        | 2.366                       | .124                        | .406                         | SPEQ-Grandiosity (Child) | .056                        | .020                        | .091                        | .018                        | -.015                       | .050                        | .124                        | .406                        |
|                      | SPEQ-Cognitive Disorganisation (Child) | .135                        | .102                        | .169                        | .162               | .128                        | .196                        | 1.194                       | .274                        | .580                         | SPEQ-Cognitive Disorganisation (Child) | .095                        | .061                        | .129                        | .114                        | .081                        | .147                        | .613                        | .434                        | .781                        |
|                      | SPEQ-Anhedonia (Child) | .095                        | .061                        | .129                        | .114               | .081                        | .147                        | .613                        | .434                        | .781                         | SPEQ-Anhedonia (Child) | .092                        | .056                        | .127                        | .098                        | .062                        | .135                        | .062                        | .803                        | 1.000                       |

**Note:** Sex differences in the effects of victimization on mental health outcome were tested by estimating two phenotypic models: 1) unconstrained model (i.e. parameters allowed to differ between sexes); 2) constrained model: regression parameter reflecting the association between mental health and victimization allowed to differ by sex. The two models were then estimated using a Maximum Likelihood Robust estimator and compared using a scaled difference chi-square test statistics, following previous research, implemented in the SEM software Lavaan.

* Adjusted p-value estimates using the false discovery rate procedure to control for multiple comparisons (k=72)
**eTable 26.** Moderation by Sex of Phenotypic Estimates: Same-Sex Twin Differences for Peer Victimization at Age 14 Years and Mental Health Outcomes at Age 16 Years (i.e., Two-Year Analyses)

| Outcome                          | Timing  | Variable Name                          | Male model | Female model | χ² difference | p adjusted* |
|----------------------------------|---------|----------------------------------------|------------|--------------|---------------|-------------|
| **Total Difficulties**           | Two-year| SDQ Total Difficulties (Child)         | .228       | .181         | .270          | .226        | .315 | 1.684 | .194 | 1.000 |
| **Total Difficulties (Including peer problems)** | Two-year| SDQ including Peer Problems (Child)    | .261       | .215         | .329          | .283        | .375 | 4.291 | .038 | .547 |
| **Anxiety & Depression**         |         | SDQ-Anxiety (Child)                    | .102       | .061         | .199          | .152        | .245 | 9.352 | .002 | .144 |
|                                  |         | ARBO-Anxiety (Parent)                  | .092       | .050         | .081          | .031        | .131 | .106 | .745 | 1.000 |
|                                  |         | CASI-Anxiety (Child)                   | .100       | .059         | .196          | .147        | .245 | 8.355 | .004 | .144 |
|                                  |         | MFQ-Depression (Parent)                | .102       | .062         | .168          | .109        | .227 | 3.550 | .060 | .627 |
|                                  |         | MFQ-Depression (Child)                 | .157       | .114         | .246          | .193        | .299 | 6.468 | .011 | .198 |
|                                  |         | SDQ-Anxiety (Child)                    | .102       | .061         | .199          | .152        | .245 | 9.352 | .002 | .144 |
|                                  |         | ARBO-Anxiety (Parent)                  | .092       | .050         | .081          | .031        | .131 | .106 | .745 | 1.000 |
|                                  |         | CASI-Anxiety (Child)                   | .100       | .059         | .196          | .147        | .245 | 8.355 | .004 | .144 |
|                                  |         | MFQ-Depression (Parent)                | .102       | .062         | .168          | .109        | .227 | 3.550 | .060 | .627 |
|                                  |         | MFQ-Depression (Child)                 | .157       | .114         | .246          | .193        | .299 | 6.468 | .011 | .198 |
| **Hyper-activity / Inattention / Impulsiveness** | Two-year| SDQ-Hyperactivity (Parent)             | .163       | .120         | .172          | .126        | .218 | .067 | .796 | 1.000 |
|                                  |         | SDQ-Hyperactivity (Child)              | .187       | .142         | .208          | .166        | .251 | .489 | .484 | 1.000 |
|                                  |         | Conners Total (Parent)                 | .172       | .127         | .194          | .140        | .248 | .391 | .532 | 1.000 |
|                                  |         | Conners Total (Parent)                 | .135       | .085         | .134          | .081        | .187 | .001 | .979 | 1.000 |
| **Conduct Problems**             |         | SDQ-CP (Parent)                        | .148       | .105         | .159          | .110        | .208 | .102 | .749 | 1.000 |
|                                  |         | SDQ-CP (Child)                         | .238       | .190         | .203          | .157        | .248 | 1.100 | .294 | 1.000 |
| **Pro-social**                   |         | SDQ-Prosocial (Parent)                 | -.046      | -.083        | -.065         | -.103       | -.028 | .514 | .474 | 1.000 |
|                                  |         | SDQ-Prosocial (Child)                  | -.049      | -.093        | -.044         | -.086       | -.003 | .020 | .888 | 1.000 |
| **Peer Problems**                |         | SDQ-Peer Problems (Child)              | .256       | .207         | .278          | .231        | .324 | .388 | .534 | 1.000 |
| **Psychotic-like Symptoms**      |         | SPEQ-Paranoid Thoughts (Child)         | .330       | .283         | .366          | .317        | .416 | 1.052 | .305 | 1.000 |
|                                  |         | SPEQ-Hallucinations (Child)            | .171       | .128         | .266          | .213        | .320 | 7.342 | .007 | .168 |
|                                  |         | SPEQ-Grandiosity (Child)               | .047       | .005         | .049          | .004        | .095 | .004 | .949 | 1.000 |
|                                  |         | SPEQ-Cognitive Disorganisation (Child)  | .184       | .143         | .240          | .197        | .284 | 3.512 | .061 | .627 |
|                                  |         | SPEQ-Anhedonia (Child)                 | .157       | .113         | .132          | .090        | .175 | .634 | .426 | 1.000 |
|                                  |         | SPEQ-Negative Symptoms (Parent)        | .074       | .036         | .109          | .055        | .164 | 1.115 | .291 | 1.000 |

*Note: See eTable 25.*
### eTable 27. Linear and Quadratic Effects in Phenotypic Analyses, Peer Victimization at Age 11 Years and Mental Health Outcomes at Age 11 Years (i.e. Concurrent Effect) and at Age 16 Years (i.e. Five-Year Effect)

| Outcome                        | Timing      | Variable Name                          | Linear effects | Nonlinear effects |
|--------------------------------|-------------|----------------------------------------|----------------|-------------------|
|                                |             |                                        | B  | 95% CI | B  | 95% CI |
| **Total Difficulties**         | Concurrent  | SDQ Total Difficulties (Parent)        | .247 | .223 | .271 | -.013 | -.029 | .005 |
|                                |             | SDQ Total Difficulties (Teacher)       | .205 | .175 | .237 | .002  | .020  | .025 |
|                                |             | SDQ Total Difficulties (Child)         | .439 | .416 | .463 | -.035 | -.050 | -.019 |
|                                | Five-year   | SDQ Total Difficulties (Child)         | .235 | .205 | .266 | -.050 | -.070 | -.031 |
| **Total Difficulties (Including peer problems)** | Concurrent | SDQ including Peer Problems (Parent)   | .275 | .251 | .299 | -.004 | -.021 | .013 |
|                                |             | SDQ including Peer Problems (Teacher)  | .217 | .187 | .248 | .006  | .017  | .030 |
|                                |             | SDQ including Peer Problems (Child)    | .481 | .457 | .503 | -.022 | -.037 | -.006 |
|                                | Five-year   | SDQ including Peer Problems (Child)    | .260 | .229 | .290 | -.051 | -.071 | -.032 |
| **Anxiety & Depression**       | Concurrent  | SDQ-Anxiety (Parent)                   | .167 | .142 | .193 | -.028 | -.045 | -.012 |
|                                |             | SDQ-Anxiety (Teacher)                  | .168 | .135 | .200 | -.019 | -.042 | .004 |
|                                |             | SDQ-Anxiety (Child)                    | .359 | .334 | .384 | -.033 | -.050 | -.016 |
|                                |             | MFQ-Depression (Parent)                | .196 | .171 | .221 | -.003 | -.023 | .016 |
|                                |             | MFQ-Depression (Child)                 | .435 | .411 | .460 | -.008 | -.026 | .012 |
|                                | Five-year   | SDQ-Anxiety (Child)                    | .137 | .106 | .170 | -.058 | -.078 | -.039 |
|                                |             | ARBQ-Anxiety (Parent)                  | .074 | .045 | .105 | .014  | .033  | .007 |
|                                |             | CASI-Anxiety (Child)                   | .144 | .113 | .176 | -.042 | -.062 | -.022 |
|                                |             | MFQ-Depression (Parent)                | .127 | .094 | .158 | .027  | -.049 | -.002 |
|                                |             | MFQ-Depression (Child)                 | .180 | .150 | .214 | -.050 | -.071 | -.029 |
| **Hyper-activity / Inattention / Impulsiveness** | Concurrent | SDQ-Hyperactivity (Parent)             | .228 | .203 | .254 | -.009 | -.026 | -.009 |
|                                |             | SDQ-Hyperactivity (Teacher)            | .165 | .135 | .196 | .006  | .015  | .027 |
|                                |             | SDQ-Hyperactivity (Child)              | .302 | .277 | .327 | -.028 | -.044 | -.012 |
|                                |             | Conners Total (Parent)                 | .224 | .200 | .249 | .006  | .012  | .024 |
|                                |             | Conners Hyp-Impul (Parent)             | .180 | .156 | .204 | .011  | .008  | .030 |
|                                |             | Conners Inatt (Parent)                 | .228 | .202 | .253 | -.001 | -.017 | -.018 |
|                                | Five-year   | SDQ-Hyperactivity (Parent)             | .197 | .166 | .228 | -.016 | -.038 | .006 |
|                                |             | SDQ-Hyperactivity (Child)              | .203 | .172 | .233 | -.027 | -.046 | -.008 |
|                                |             | Conners Total (Parent)                 | .205 | .174 | .235 | -.014 | -.035 | -.009 |
|                                |             | Conners Hyp-Impul (Parent)             | .139 | .109 | .169 | .008  | .015  | .034 |
|                                |             | Conners Inatt (Parent)                 | .216 | .186 | .248 | -.028 | -.049 | -.005 |
| **Conduct Problems**           | Concurrent  | SDQ-CP (Parent)                        | .176 | .152 | .200 | .007  | .010  | .025 |
|                                |             | SDQ-CP (Teacher)                       | .118 | .087 | .149 | .020  | .003  | .044 |
|                                |             | SDQ-CP (Child)                         | .365 | .341 | .389 | -.020 | -.036 | -.002 |
|                                | Five-year   | SDQ-CP (Parent)                        | .144 | .114 | .175 | -.009 | -.030 | .014 |
|                                |             | SDQ-CP (Child)                         | .198 | .166 | .229 | -.021 | -.042 | -.001 |
| **Pro-social**                 | Concurrent  | SDQ-Prosocial (Parent)                 | -.038 | -.063 | -.014 | .009  | .006  | .024 |
|                                |             | SDQ-Prosocial (Teacher)                | -.063 | -.093 | -.030 | -.011 | -.031 | -.008 |
**eTable 27. Linear and Quadratic Effects in Phenotypic Analyses, Peer Victimization at Age 11 Years and Mental Health Outcomes at Age 11 Years (i.e. Concurrent Effect)**

|                      | SDQ-Prosocial (Child) | SDQ-Prosocial (Parent) | SDQ-Prosocial (Child) | SDQ-Prosocial (Child) |
|----------------------|------------------------|------------------------|------------------------|------------------------|
| Five-year            | -.061                  | -.087                  | .032                   | .016                   | .049                   |
|                      |                        |                        |                        |                        |
| Peer Problems        |                        |                        |                        |                        |
| Concurrent           |                        |                        |                        |                        |
| SDQ-Peer Problems (Parent) | .244                  | .219                  | .269                   | .021                   | .001                   | .042                   |
| SDQ-Peer Problems (Teacher) | .160                  | .129                  | .190                   | .014                   | .010                   | .039                   |
| SDQ-Peer Problems (Child) | .380                  | .354                  | .404                   | .026                   | .006                   | .046                   |
| Five-year            |                        |                        |                        |                        |
|                      |                        |                        |                        |                        |
| Psychotic-like Symptoms |                        |                        |                        |                        |
| Five-year            |                        |                        |                        |                        |
| SPEQ-Paranoid Thoughts (Child) | .250                  | .220                  | .282                   | -.037                 | -.058                  | -.016                  |
| SPEQ-Hallucinations (Child) | .189                  | .157                  | .221                   | -.038                 | -.059                  | -.017                  |
| SPEQ-Grandiosity (Child) | .050                  | .019                  | .083                   | -.006                 | -.026                  | .015                   |
| SPEQ-Cognitive Disorganisation (Child) | .197                  | .165                  | .228                   | -.051                 | -.070                  | -.031                  |
| SPEQ-Anhedonia (Child) | .128                  | .096                  | .159                   | -.015                 | -.034                  | .004                   |
| SPEQ-Negative Symptoms (Parent) | .109                  | .078                  | .141                   | -.011                 | -.033                  | .012                   |

**Note:** The phenotypic models reported in the main manuscript tested a linear relationship between peer victimization and mental health. A plausible hypothesis of a non-linear relationship is that peer victimization has increasing impact at higher levels of exposure. We tested such possible nonlinear relationships by adding quadratic terms into the phenotypic models and bootstrapping the estimates. According to the aforementioned hypothesis, we would expect positive quadratic terms (i.e. flat or low effects at low scores of victimization and more rapidly increasing effects at higher scores of victimization). All estimates were bootstrapped. Significant estimates are presented in bold.
eReferences
1. Dodge KA, Pettit GS, Bates JE. Socialization mediators of the relation between socioeconomic status and child conduct problems. Child development. 1994;65(2):649-665.
2. Deater-Deckard K. The Parent Feelings Questionnaire. London: Institute of Psychiatry. 1996.
3. Satorra A, Bentler PM. A scaled difference chi-square test statistic for moment structure analysis. Psychometrika. 2001;66(4):507-514.