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**Analysis Plan for Exploratory and Confirmatory Factor Analyses of Parenting Measures**

To determine how our measures related to key constructs, exploratory factor analyses (EFA) and confirmatory factor analyses (CFA) were conducted using MPlus Version 8.3 (Muthén & Muthén, 2017). In each EFA, we evaluated the significance of factor loadings, the number of eigenvalues greater than 1, and overall model fit to determine the appropriate number of factors, using geomin rotation. In both EFA and CFA, in addition to the χ2 statistic, which is sensitive to sample size, we evaluated model fit using Bentler’s Comparative Fit Indices (CFI) (Bentler, 1990) and the root-mean-square error of approximation (RMSEA; Browne & Cudeck, 1992). CFIs greater than 0.95 and RMSEA values less than 0.06 indicate good model fit (Hu & Bentler, 1998).

We tested alternative models to address measurement invariance across family type (adoptive and nonadoptive) and sex in all CFAs, to determine whether factor structure was consistent across groups. We used the best-fitting model in subsequent analyses. For ordinal variables (i.e., for the Caldwell HOME Scale, Orientation to Parents Index, and MTF), a noninvariant model (where factor loadings and thresholds were freed across groups, all scale factors set to one, and all factor means fixed to zero), was compared to an invariant model (where factor loadings and thresholds were constrained to be equal across groups, factor means set at zero in one group and freed in the others, and scale factors fixed at one in one group and freed in the others). A χ2 difference test was used to test measurement invariance.

 To test for measurement invariance in continuous variables (i.e., for the Dibble and Cohen Parent Report, SIQYA Family Relationships Scale), configural, metric, scalar and strict invariant models were tested in sequential order. A configural invariant model (where factor loadings, intercepts, and residual variances were freed across groups and all factor means fixed to zero) was compared to metric invariant model (where intercepts and residual variances were freed across groups, factor loadings were constrained to be equal, factor means fixed to zero). The metric invariant model was then compared to a scalar invariant model (where residual variances were freed, intercepts and factor loadings constrained to be equal, and factor means set at zero in one group and freed in the others). Lastly, the scalar invariant model was compared to a residual invariant model (where intercepts, factor loadings, and residual variances were constrained to be equal and factor means set at zero in one group and free in the others). χ2 difference tests were used to test measurement invariance. When difference tests were significant, the less constrained model was used. For example, if the χ2 difference test showed a significant decrement in model fit between configural and metric invariant models, the configural invariant model would be retained, and we would not test for differences between the metric and scalar or between the scalar and residual invariant models.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*(2), 238–246. <https://doi.org/10.1037/0033-2909.107.2.238>

Browne, M. W., & Cudeck, R. (1992). Alternative Ways of Assessing Model Fit. *Sociological Methods & Research*, *21*(2), 230–258.

Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods*, *3*(4), 424–453. https://doi.org/10.1037/1082-989X.3.4.424

Muthén, L. K., & Muthén, B. O. (2017). *Mplus: Statistical Analysis with Latent Variables: User’s Guide (Version 8)*. Authors.

Table S1. *Early Positive Parenting (Caldwell HOME Scale): Frequencies and Percentages*

|  |  |  |  |
| --- | --- | --- | --- |
|  Item | Ordinal Category | Frequency  | % |
| Year 1 (Total = 734) |
| Mom initiates conversation |   |   |   |
|   | Missing | 6 | 0.8 |
| 0 | Quiet | 36 | 4.9 |
| 1 | Comments | 243 | 33.1 |
| 2 | Questions | 310 | 42.2 |
| 3 | Rambles | 139 | 18.9 |
| Mom spontaneously praises child |   |   |   |
|   | Missing | 14 | 1.9 |
| 0 | 0 times | 177 | 24.1 |
| 1 | 1 time | 149 | 20.3 |
| 2 | 2 times | 169 | 23.0 |
| 3 | 3 times | 115 | 15.7 |
| 4 | 4 times | 46 | 6.3 |
| 5 | 5 or more times | 64 | 8.7 |
| Mom's voice is positive |   |   |   |
|   | Missing | 4 | 0.5 |
| 0 | Neutral - Moderate | 210 | 28.6 |
| 1 | Beaming | 371 | 50.5 |
| 2 | Ecstatic | 149 | 20.3 |
| Mom's response to praise of kid |   |   |   |
|   | Missing | 7 | 1.0 |
| 0 | Couldn't care less - brightens | 316 | 43.1 |
| 1 | Adds to praise | 354 | 48.2 |
| 2 | Effusive | 57 | 7.8 |
| Year 2 (Total = 695) |
| Mom initiates conversation |   |   |   |
|   | Missing | 40 | 5.8 |
| 0 | Quiet | 35 | 5.0 |
| 1 | Comments | 189 | 27.2 |
| 2 | Questions | 267 | 38.4 |
| 3 | Rambles | 164 | 23.6 |
| Mom spontaneously praises child |   |   |   |
|   | Missing | 45 | 6.5 |
| 0 | 0 times | 180 | 25.9 |
| 1 | 1 time | 126 | 18.1 |
| 2 | 2 times | 127 | 18.3 |
| 3 | 3 times | 89 | 12.8 |
| 4 | 4 times | 46 | 6.6 |
| 5 | 5 or more times | 82 | 11.8 |
| Mom's voice is positive |   |   |   |
|   | Missing | 43 | 6.2 |
| 0 | Neutral - Moderate | 200 | 28.8 |
| 1 | Beaming | 315 | 45.3 |
| 2 | Ecstatic | 137 | 19.7 |
| Mom's response to praise of kid |   |   |   |
|   | Missing | 47 | 6.8 |
| 0 | Couldn't care less - brightens | 264 | 38.0 |
| 1 | Adds to praise | 331 | 47.6 |
| 2 | Effusive | 53 | 7.6 |
| Year 3 (Total = 673) |
| Mom spontaneously praises child |   |   |   |
|   | Missing | 61 | 9.1 |
| 0 | 0 times | 208 | 30.9 |
| 1 | 1 time | 117 | 17.4 |
| 2 | 2 times | 119 | 17.7 |
| 3 | 3 times | 78 | 11.6 |
| 4 | 4 times | 40 | 5.9 |
| 5 | 5 or more times | 50 | 7.4 |
| Mom's voice is positive |   |   |   |
|   | Missing | 58 | 8.6 |
| 0 | Neutral - Moderate | 224 | 33.3 |
| 1 | Beaming | 293 | 43.5 |
| 2 | Ecstatic | 98 | 14.6 |
| Mom's response to praise of kid |   |   |   |
|   | Missing | 63 | 9.4 |
| 0 | Responds once - brightens | 301 | 44.7 |
| 1 | Adds to praise | 278 | 41.3 |
| 2 | Effusive | 31 | 4.6 |
| Year 4 (Total = 685) |
| Mom's voice is positive |   |   |   |
|   | Missing | 77 | 11.2 |
| 0 | Neutral - moderate | 256 | 37.4 |
| 1 | Beaming | 257 | 37.5 |
| 2 | Ecstatic | 95 | 13.9 |
| Mom answers kid's queries |   |   |   |
|   | Missing | 80 | 11.7 |
| 0 | Ignores - barely responds | 59 | 8.6 |
| 1 | Sometimes responds | 280 | 40.9 |
| 2 | Responds consistently | 207 | 30.2 |
| 3 | Maintains dialogue | 59 | 8.6 |
| Mom spontaneously praises child |   |   |   |
|   | Missing | 81 | 11.8 |
| 0 | 0 times | 218 | 31.8 |
| 1 | 1 time | 135 | 19.7 |
| 2 | 2 times | 107 | 15.6 |
| 3 | 3 times | 72 | 10.5 |
| 4 | 4 or more times | 72 | 10.5 |
| Mom caresses, kisses kid |   |   |   |
|   | Missing | 79 | 11.5 |
| 0 | 0 times | 314 | 45.8 |
| 1 | 1 time | 146 | 21.3 |
| 2 | 2 times | 86 | 12.6 |
| 3 | 3 or more times | 60 | 8.8 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table S2. *Warm, Inconsistent, and Negative Parenting in Childhood through Adolescence (Dibble & Cohen Parent Report): Descriptive Statistics*

|  |  |  |
| --- | --- | --- |
| Year | N | Mean |
| Warmth Domaina |
| 7 | 582 | 72.791 (6.291) |
| 9 | 567 | 72.874 (6.847)  |
| 10 | 576 | 72.590 (7.289) |
| 11 | 510 | 72.300 (7.244) |
| 12 | 556 | 71.817 (7.333) |
| 13 | 494 | 71.520 (7.261) |
| 14 | 505 | 71.664 (7.708) |
| 15 | 378 | 71.508 (7.652) |
| Inconsistency Domainb |
| 7 | 583 | 23.277 (5.465) |
| 9 | 566 | 23.041 (6.137) |
| 10 | 576 | 22.917 (6.339) |
| 11 | 509 | 23.714 (6.425) |
| 12 | 558 | 24.173 (6.153) |
| 13 | 493 | 24.004 (6.248) |
| 14 | 506 | 24.288 (6.499) |
| 15 | 378 | 24.651 (6.295) |
| Negativity Domainc |
| 7 | 583 | 26.014 (7.059) |
| 9 | 567 | 24.407 (8.041) |
| 10 | 575 | 23.729 (7.945) |
| 11 | 510 | 23.193 (8.137) |
| 12 | 557 | 23.542 (8.204) |
| 13 | 495 | 23.317 (8.519) |
| 14 | 507 | 22.898 (8.726) |
| 15 | 379 | 22.672 (8.928) |

aItems comprising the Warmth domain:1. I see both the child’s good points and his faults
2. I feel close to him both when he is happy and when he is worried
3. I care about him even when he does less well than I know he could
4. I think of things that will please him
5. I give him a lot of care and attention
6. I consider his needs and interests when making my own plans
7. I encourage him to tell me what he is thinking and feeling
8. I know how he feels without his saying
9. I can predict how he will respond or feel about something new
10. I tell him how happy he makes me
11. I enjoy listening to him and doing things with him
12. I like to hug and kiss him
13. I like him to do things his way
14. I am aware of his need for privacy
15. I let him dress as he wants
16. I make decisions with him
17. I let him help me decide about things that affect him
18. I accept a decision even if it is not the way I think
19. I see to it that he obeys what he is told
20. I punish him for disobeying
21. I make clear rules for him to follow
22. I explain to him why he is being punished
23. I set limits for activities to help him stay out of trouble
24. I let him express his feelings about being punished or restricted

bItems comprising the Inconsistency domain:1. I forget things he has told me
2. I prefer going places and doing things without him
3. I am unaware of what he thinks or feels
4. I ignore misbehavior
5. I allow things to be left undone
6. I let myself be talked out of things
7. I forget rules that have been made
8. I enforce rules depending on my mood
9. I change rules

cItems comprising the Negativity domain:1. I ask others what he does while he is away from me
2. I check on what he is doing and whom he is seeing all during the day
3. I get angry about little things he does
4. I warn him about future punishments to prevent him from acting badly
5. I keep reminding him of past bad behavior
6. I tell him that I worry about how he will turn out because of his bad behavior
7. I let him know that I feel hurt if he does not do what he is told
8. I let him know all I have done for him when I want him to obey
9. I let him know that if he really cared he wouldn’t do things to cause me to worry
10. I speak in a strong way in order to teach him how to behave
11. I use physical punishment
12. I lose my temper when he does not do as I ask
13. I avoid talking to him after he displeases me
14. I avoid looking at him when I am disappointed in him
15. I withdrew from being with my child when he displeases me

|  |
| --- |
| Table S3. *Adolescent Substance Use: Frequencies and Percentages (Total N = 663)* |
| **Cigarette Items** | **Ordinal Category** | **Frequency**  | **%** |
| Have you ever used cigarettes? |  |   |   |
|   | Missing | 2 | 0.3 |
| 0 | Never | 223 | 33.6 |
| 1 | Once or twice | 119 | 17.9 |
| 2 | Occasionally, but not regularly | 109 | 16.4 |
| 3 | Regularly in the past | 79 | 11.9 |
| 4 | Regularly now | 131 | 19.8 |
| How many times have you used cigarettes in the past 30 days? |   |   |   |
|   | Missing | 2 | 0.3 |
| 0 | None | 409 | 61.7 |
| 1 | Less than once per day | 89 | 13.4 |
| 2 | 1-5 cigs per day | 64 | 9.7 |
| 3 | 1/2 pack or more per day | 99 | 14.9 |
| **Alcohol Items** |
| How many times have you used alcohol in your lifetime? |   |   |   |
|   | Missing | 5 | 0.8 |
| 0 | 0 times | 85 | 12.8 |
| 1 | 1-2 times | 59 | 8.9 |
| 2 | 3-5 times | 71 | 10.7 |
| 3 | 6-9 times | 71 | 10.7 |
| 4 | 10-19 times | 94 | 14.2 |
| 5 | 20-39 times | 103 | 15.5 |
| 6 | 40 or more times | 175 | 26.4 |
| How many times have you used alcohol in the past 12 months? |   |   |   |
|   | Missing | 8 | 1.2 |
| 0 | 0 times | 145 | 21.9 |
| 1 | 1-2 times | 94 | 14.2 |
| 2 | 3-5 times | 87 | 13.1 |
| 3 | 6-9 times | 75 | 11.3 |
| 4 | 10-19 times | 118 | 17.8 |
| 5 | 20+ times | 136 | 20.5 |
| How many times have you used alcohol in the past 30 days? |   |   |   |
|   | Missing | 8 | 1.2 |
| 0 | 0 times | 308 | 46.5 |
| 1 | 1-2 times | 168 | 25.3 |
| 2 | 3-5 times | 86 | 13 |
| 3 | 6-9 times | 43 | 6.5 |
| 4 | 10+ times | 50 | 7.5 |
| **Marijuana Items** |
| How many times have you used marijuana in your lifetime? |   |   |   |
|   | Missing | 3 | 0.5 |
| 0 | 0 times | 338 | 51 |
| 1 | 1-2 times | 67 | 10.1 |
| 2 | 3-9 times | 47 | 7.1 |
| 3 | 10-39 times | 71 | 10.7 |
| 4 | 40 or more times | 137 | 20.7 |
| How many times have you used marijuana in the past 12 months? |   |   |   |
|   | Missing | 3 | 0.5 |
| 0 | 0 times | 401 | 60.5 |
| 1 | 1-2 times | 60 | 9 |
| 2 | 3-5 times | 33 | 5 |
| 3 | 6-9 times | 29 | 4.4 |
| 4 | 10-19 times | 35 | 5.3 |
| 5 | 20-39 times | 27 | 4.1 |
| 6 | 40 or more times | 75 | 11.3 |
| How many times have you used marijuana in the past 30 days? |   |   |   |
|   | Missing | 4 | 0.6 |
| 0 | 0 times | 502 | 75.7 |
| 1 | 1-2 times | 48 | 7.2 |
| 2 | 3-9 times | 53 | 8 |
| 3 | 10 - 39 times | 36 | 5.4 |
| 4 | 40+ times | 20 | 3 |
| **Other Illicit Drug Items** |
| How many times have you used other illicit drugs in your lifetime? |   |   |   |
|   | Missing | 2 | 0.3 |
| 0 | 0 times | 471 | 71 |
| 1 | 1-2 times | 62 | 9.4 |
| 2 | 3-9 times | 51 | 7.7 |
| 3 | 10-39 times | 38 | 5.7 |
| 4 | 40+ times | 39 | 5.9 |
| How many times have you used other illicit drugs in the past 12 months? |   |   |   |
|   | Missing | 2 | 0.3 |
| 0 | 0 times | 520 | 78.4 |
| 1 | 1-2 times | 65 | 9.8 |
| 2 | 3-5 times | 26 | 3.9 |
| 3 | 6-19 times | 24 | 3.6 |
| 4 | 20+ times | 26 | 3.9 |
| How many times have you used other illicit drugs in the past 30 days? |   |   |   |
|   | Missing | 2 | 0.3 |
| 0 | 0 times | 601 | 90.6 |
| 1 | 1+ times | 60 | 9 |

Table S4.  *Parent–Child Relationship Quality in Later Childhood through Adolescence (SIQYA – Family Relationships Scalea): Descriptive Statistics*

|  |  |  |  |
| --- | --- | --- | --- |
| Year | N | Mean (SD) |  |
| 9 | 623 | 17.511 (4.980)  |
| 10 | 627 | 18.789 (4.931) |
| 11 | 622 | 19.404 (4.727) |
| 12 | 623 | 17.832 (5.378) |
| 13 | 644 | 18.255 (5.060) |
| 14 | 517 | 17.433 (5.395) |
| 15 | 524 | 17.067 (5.611) |

aItems Comprising the SIQYA Family Relationships Scale:1. My parents are on the side of someone else
2. I can count on my parents most of the time
3. I feel I have a part in family decisions
4. My parents are usually patient with me
5. I usually feel like a bother at home
6. I try to stay away from home
7. My parents are satisfied with me

Table S5. *Orientation to Parents in Adolescence* (*Orientation to Parents Index): Frequencies and Percentages (Total N = 663)*

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Ordinal Category | Frequency  | % |
| Agreement Items: Would you friends agree with your parents (or the main adults in your life) about: |
| What is really important in life? | Missing | 12 | 1.8 |
| 0 | No | 40 | 6 |
| 1 | A Little | 374 | 56.4 |
| 2 | A Lot | 237 | 35.7 |
| The kind of person you should become? | Missing | 8 | 1.2 |
| 0 | No | 50 | 7.5 |
| 1 | A Little | 347 | 52.3 |
| 2 | A Lot | 258 | 38.9 |
| What you should be getting out of being in school? | Missing | 8 | 1.2 |
| 0 | No | 58 | 8.7 |
| 1 | A Little | 333 | 50.2 |
| 2 | A Lot | 264 | 39.8 |
| Influence Items: Who would have the most influence on you, your friends or your parents: |
| If you had to make a serious decision about school or work? | Missing | 7 | 1.1 |
| 0 | Friends most | 96 | 14.5 |
| 1 | Parents & friends the same | 338 | 51 |
| 2 | Parents most | 222 | 33.5 |
| About how to take care of your health? | Missing | 10 | 1.5 |
| 0 | Friends most | 75 | 11.3 |
| 1 | Parents & friends the same | 216 | 32.6 |
| 2 | Parents most | 362 | 54.6 |
| About your outlook on life what's important to do and what it is important to become? | Missing | 9 | 1.4 |
| 0 | Friends most | 119 | 17.9 |
| 1 | Parents & friends the same | 357 | 53.8 |
| 2 | Parents most | 178 | 26.8 |

Table S6. *Adoption Satisfaction Domains: Descriptive Statistics*

|  |  |  |
| --- | --- | --- |
| Domain | N | Mean (SD) |
| Acceptancea | 283 | 0.2869 (0.370) |
| Securityb | 283 | 0.9427 (0.326) |
| Differences - Motherc | 247 |  25.3298 (7.057) |
| Integration - Motherd | 246 | 0.2763 (0.071) |
| Differences - Fatherc | 222 |  25.8514 (8.039) |
| Integration - Fatherd | 221 | 0.2649 (0.075) |

aItems Comprising the Acceptance Scale:1. Glad my parents adopted me
2. I feel good that I'm adopted
3. I like the fact that I’m adopted
4. Being adopted makes me feel loved
5. Feel proud that my pars adopted me
6. Being adopted makes me feel special
7. Being adopted makes me feel angry
8. Hurts to know I was adopted
9. Wish people did not know adopted
10. Feel like something missing in life
11. When older, would you adopt?
12. Wish I lived with birthparents

 bItems Comprising the Security Scale:1. Relatives make me feel like part of the family
2. I worry my parents might not want me
3. I feel like I don’t belong in my family
4. I think my parents would love a birth child more
5. I feel unwanted
6. I feel like I don’t belong to anyone

cItems Comprising the Differences Scales:1. Family with adoptees faces challenges
2. Adoptees face unique challenges
3. I introduce child as adopted
4. Bring up matters of adoption in fam
5. Child < 8, thought adoptive parents different
6. Child < 8, thought adoptive families different
7. Child < 8, thought raising adoptee different
8. Child < 8, thought adoptees same as others
9. Child < 8, thought more difficult to raise adoptees
10. Now, think adoptive parent different
11. Now, think adoptive families different
12. Now, think raising adoptee different
13. Now, think adoptees same as others
14. Now, think more difficult to raise adoptees

dItems Comprising the Integration Scales:1. Don’t think of child as adopted
2. Adopting Child has been rewarding
3. Child truly feels like they belong in family

Table S7.*Early Positive Parenting (Caldwell HOME Scale): Results from Exploratory Factor Analyses* |  |   |
| **Item** | **Factor loadings** |
| **Adopted** | **Biological** |
| **Girls** | **Boys** | **Girls** | **Boys** |
| **Year 1 Items** |  |  |  |  |
| Mom initiates conversation | 0.649 | 0.545 | 0.591 | 0.583 |
| Mom spontaneously praises child | 0.531 | 0.706 | 0.560 | 0.635 |
| Mom's voice is positive | 0.585 | 0.637 | 0.779 | 0.662 |
| Mom's response to praise of child | 0.870 | 0.823 | 0.749 | 0.846 |
|  |  |  |  |  |
| Fit statistics |  |  |  |  |
|  | χ2(2) = 7.229, *p* = 0.027, RMSEA = 0.124, CFI = 0.971 | χ2(2) = 2.002, *p* = 0.368, RMSEA = 0.002, CFI = 1.000 | χ2 (2) = 3.390, *p* = 0.184, RMSEA = 0.063, CFI = 0.992 | χ2 (2) = 1.182, *p* = 0.554, RMSEA < 0.001, CFI = 1.000 |
|  |  |  |  |  |
| **Year 2 Items** |  |  |  |  |
| Mom initiates conversation | 0.668 | 0.560 | 0.661 | 0.508 |
| Mom spontaneously praises child | 0.757 | 0.732 | 0.713 | 0.718 |
| Mom's voice is positive | 0.641 | 0.767 | 0.741 | 0.699 |
| Mom's response to praise of child | 0.715 | 0.763 | 0.813 | 0.734 |
|  |  |  |  |  |
| Fit statistics |  |  |  |  |
|  | χ2 (2) = 0.840, *p* = 0.657, RMSEA < 0.001, CFI = 1.000 | χ2 (2) = 1.711, *p* = 0.425, RMSEA < 0.001, CFI = 1.000 | χ2 (2) = 3.624, *p* = 0.163, RMSEA = 0.070, CFI = 0.994 | χ2 (2) = 0.618, *p* = 0.734, RMSEA < 0.001, CFI = 1.000 |
|  |  |  |  |  |
| **Year 3 Items** |  |  |  |  |
| Mom spontaneously praises child | 0.654 | 0.840 | 0.798 | 0.630 |
| Mom's voice is positive | 0.766 | 0.715 | 0.648 | 0.731 |
| Mom's response to praise of child | 0.765 | 0.704 | 0.878 | 0.711 |
|  |  |  |  |  |
| Fit statistics |  |  |  |  |
|  | χ2 (0) < 0.001, *p* < 0.001, RMSEA < 0.001, CFI = 1.000 | χ2 (0) < 0.001, *p* < 0.001, RMSEA < 0.001, CFI = 1.000 | χ2 (0) < 0.001, *p* < 0.001, RMSEA < 0.001, CFI = 1.000 | χ2 (0) < 0.001, *p* < 0.001, RMSEA < 0.001, CFI = 1.000 |
|  |  |  |   |  |
| **Year 4 Items** |  |  |  |  |
| Mom's voice is positive | 0.571 | 0.660 | 0.814 | 0.677 |
| Mom converses with child | 1.002 | 0.940 | 0.967 | 0.968 |
| Mom answers kids queries | 0.934 | 0.979 | 0.936 | 0.885 |
| Mom spontaneously praises child | 0.506 | 0.447 | 0.626 | 0.526 |
| Mom caresses, kisses child | 0.462 | 0.491 | 0.389 | 0.523 |
| Fit statistics |  |  |  |  |
|  | χ2 (5) = 13.806, *p* = 0.017, RMSEA = 0.119, CFI = 0.970 | χ2 (5) = 21.794, *p* < 0.001, RMSEA = 0.153, CFI = 0.994 | χ2 (5) = 26.064, *p* < 0.000, RMSEA = 0.163, CFI = 0.993 | χ2 (5) = 37.083, *p* < 0.001, RMSEA = 0.190, CFI = 0.935 |
| Note. Number of Eigenvalues > 1 = 1 for all participant groups at all years. CFI = Bentler's Comparative Fit Indices, RMSEA = Root Mean Square Error of ApproximationAll loadings significant at p < 0.05 |  |  |

|  |
| --- |
| Table S8. *Orientation to Parents in Adolescence* (*Orientation to Parents Index): Results from Exploratory Factor Analyses* |
|   |   | Factor Loadings |
|   |   | Adopted | Biological |
|  Items |   | Girls | Boys | Girls | Boys |
|   |   | Factor 1 | Factor 2 | Factor 1 | Factor 2 | Factor 1 | Factor 2 | Factor 1 | Factor 2 |
| Would you friends agree with your parents (or the main adults in your life) about: | What is really important in life? | 0.898\* | -0.089 | 0.656\* | 0.002 | 0.749\* | -0.044 | 0.765\* | 0.003 |
| The kind of person you should become? | 0.854\* | 0.080 | 0.929\* | 0.049 | 0.798\* | -0.001 | 0.708\* | 0.061 |
| What you should be getting out of being in school? | 0.837\* | 0.004 | 0.894\* | -0.193 | 0.822\* | 0.119 | 0.805\* | -0.049 |
| Who would have the most influence on you, your friends or your parents: | If you had to make a serious decision about school or work? | 0.001 | 0.903\* | -0.008 | 0.726\* | 0.000 | 0.786\* | 0.009 | 0.875\* |
| About how to take care of your health?  | -0.266\* | 0.700\* | 0.029 | 0.468\* | -0.042 | 0.635\* | -0.087 | 0.423\* |
| About your outlook on life what's important to do and what it is important to become?  | 0.170 | 0.727\* | 0.117 | 0.540\* | 0.035 | 0.675\* | -0.014 | 0.619\* |
| Fit statistics |   |   |   |   |   |   |   |   |   |
|   |   | χ2(4) = 2.489, p = .647, RMSEA < 0.001, CFI = 1.000 | χ2 (4) = 2.221, p = .695, RMSEA < 0.001,  CFI = 1.000 | χ2 (4) = 2.057, p = .725, RMSEA < 0.001, CFI = 1.000 | χ2 (4) = 3.534, p = .473, RMSEA < 0.001, CFI = 1.000 |

# of Eigenvalues > 1 = 2 for all participant groups; CFI = Bentler's Comparative Fit Indices, RMSEA = Root Mean Square Error of Approximation

\* *p* < 0.05

Table S9. *Correlations Between Adolescent Substance Use and Orientation to Parents in Adolescence, Controlling for Adoption Satisfaction Domains, Parent SES, and Pubertal Timing*

|  |  |
| --- | --- |
|  | Orientation to Parents in Adolescence (*N =* 308) |
| Adoption Satisfaction Measure/Group | Agreement | Influence |
| Acceptance |  |  |
| Girls | -.233\* [-.421, -.046] | -.129 [-.321, .064] |
| Boys | -.459\*\*\* [-.627, -.292] | -.502\*\*\* [-.719, -.284] |
| Security |  |  |
| Girls | -.292\*\* [-.480, -.104]+ | -.167 [-.377, .042]+ |
| Boys | -.462\*\*\* [-.618, -.331] | -.351\*\* [-.559, -.176] |
| Diff – M  |  |  |
| Girls | -.155 [-.316, .036] | -.108 [-.302, .086] |
| Boys | -.433 [-.581, -.257] | -.490\*\*\* [-.713, -.266] |
| Integ – M |  |  |
| Girls | -.149 [-.326, .028] | -.102 [-.295, .091] |
| Boys | -.405 [-.576, -.234] | -.474\*\*\* [-.701, -.246] |
| Diff – F  |  |  |
| Girls | -.115 [-.321, .092] | -.084 [-.293, .092] |
| Boys | -.423\*\*\* [-.593, -.253] | -.472\*\*\* [-.702, -.241]  |
| Integ – F |  |  |
| Girls | -.162 [-.370, .045] | -.118 [-.323, .087] |
| Boys | -.432\*\*\* [-.604, -.260] | -.466\*\*\* [-.698, -.234] |

*Note.* Orientation to Parents in Adolescence was measured by the Orientation to Parents Index. Higher agreement and influence scores indicate greater parent – adolescent relationship quality. Higher difference and lower integration scores indicate lower adoption satisfaction. Integ – M: Integration Mother; Diff – M: Difference Mother, Integ – F: Integration Father; Diff – F: Difference Father. Higher acceptance and security scores indicate lower adoption satisfaction. Higher difference and lower integration scores indicate lower adoption satisfaction.

+For these specific analyses, adolescent substance use was measured using lifetime use indicators for substance use, due to limited cell sizes (correlations between predictors and adolescent substance use were consistent with those using a hierarchical factor).

\**p* < .05, \*\**p* < .01, \*\*\**p* ≤ .001

Table S10. *Correlations Between Adolescent Substance Use and Orientation to Parents in Adolescence, Controlling for Pubertal Timing and Parent SES*

|  |  |
| --- | --- |
|  | Orientation to Parents in Adolescence (*N =* 660) |
| Group | Agreement | Influence |
| Nonadoptees |  |  |
| Girls Only | -.497\*\*\* [-.655, -.340] | -.474\*\*\* [-.651, -.297] |
| Boys Only | -.345\*\*\* [-.544, -.146] | -.343\*\*\* [-.514, -.172] |

*Note.* Orientation to Parents in Adolescence was measured by the Orientation to Parents Index. Higher agreement and influence scores indicate greater parent – adolescent relationship quality. If correlations were significant for either or both sex, results from the model where correlations are equated across sex are also shown.

\**p* < .05, \*\**p* < .01, \*\*\**p* ≤ .001

Table S11. *Correlations Between Adolescent Substance Use and Adoption Satisfaction Domains, Adolescent Self-Report, Controlling for Pubertal Timing and Parent SES*

(*N =* 308)

|  |  |  |
| --- | --- | --- |
| Group | Acceptance | Security |
| Girls Only | .204 [-.006, .414] | .090 [-.124, .303] |
| Boys Only | .263\* [.042, .484] | .179 [-.011, .369] |

*Note.* Higher acceptance and security scores indicate lower adoption satisfaction. Higher difference and lower integration scores indicate lower adoption satisfaction. To control for pubertal timing in adopted girls, adolescent substance use was measured using lifetime use indicators for other drugs, due to limited cell sizes (correlations between predictors and adolescent substance use were consistent with those using a hierarchical factor). The hierarchical substance use variable was used for adopted boys. If correlations were significant for either or both sex, results from the model where correlations are equated across sex are also shown.

\**p* < .05, \*\**p* < .01, \*\*\**p* ≤ .001

Table S12. *Correlations Between Adolescent Substance Use and Adoption Satisfaction, Parent Self-Report, Controlling for Pubertal Timing and Parent SES*

*(N = 301-305)*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sex | Diff – M  | Integ – M  | Diff – F  | Integ – F  |
| Girls | .258\* [.040, .477] | -.270\* [-.492, -.048] | .163 [-.091, .416] | -.104 [-.353, .145] |
| Boys | .157 [-.053, .367] | -.230\* [-.428, -.032] | .296\*\* [.080, .513] | -.250\* [-.450, -.050] |

*Note.* Integ – M: Integration Mother; Diff – M: Difference Mother, Integ – F: Integration Father; Diff – F: Difference Father. Higher acceptance and security scores indicate lower adoption satisfaction. Higher difference and lower integration scores indicate lower adoption satisfaction. The hierarchical substance use variable was used for adopted boys. If correlations were significant for either or both sex, results from the model where correlations are equated across sex are also shown. \**p* < .05, \*\**p* < .01, \*\*\**p* ≤ .001

Table S13. *Correlations Between Predictors in Adopted Girls and Boys*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 1. Accept | \* | 0.578\*\*\* | -0.024 | 0.229\* | -0.147 | 0.365\*\*\* | 0.057 | -0.085 | 0.052 | -0.109 | -0.380\*\*\* | -0.161 | -0.094 | 0.057 | -0.073 |
| 2. Security | 0.424\*\*\* | \* | 0.083 | 0.195\* | -0.128 | 0.176\* | 0.058 | -0.163 | 0.050 | -0.060 | -0.311\*\*\* | -0.155 | 0.014 | 0.034 | -0.154 |
| 3. Integ ­– F | -0.119 | -0.248\*\* | \* | -0.488\*\*\* | 0.073 | 0.015 | 0.043 | -0.120 | -0.120 | 0.034 | 0.052 | 0.197 | 0.006 | 0.041 | 0.258\* |
| 4. Diff – F | 0.182 | 0.176\* | -0.557\*\*\* | \* | -0.198\* | 0.289\*\*\* | 0.074 | 0.140 | 0.235\* | 0.040 | -0.224 | -0.126 | 0.068 | 0.040 | -0.139 |
| 5. Integ – M | 0.082 | 0.114 | -0.042 | -0.362\*\*\* | \* | -0.580\*\*\* | 0.190 | 0.021 | 0.069 | 0.064 | 0.240 | 0.178 | 0.146 | -0.101 | -0.014 |
| 6. Diff ­ ­– M | -0.215\* | -0.384\*\*\* | 0.303\*\* | 0.325\*\*\* | -0.474\*\*\* | \* | -0.035 | -0.108 | 0.050 | 0.056 | -0.331\*\* | -0.125 | -0.181 | 0.238 | 0.151 |
| 7. SU – M | -0.109 | -0.238\* | -0.014 | -0.007 | 0.210 | -0.053 | \* | 0.722\*\* | 0.000 | 0.079 | 0.065 | -0.076 | -0.156 | 0.033 | 0.075 |
| 8. SU – F | -0.109 | -0.325\*\* | -0.093 | 0.033 | 0.140 | -0.045 | 0.786\*\*\* | \* | 0.099 | 0.118 | -0.046 | -0.019 | 0.044 | -0.008 | 0.040 |
| 9. Caldwell | 0.043 | 0.085 | 0.041 | 0.058 | -0.146 | -0.166 | -0.005 | -0.191 | \* | 0.152 | -0.065 | -0.273 | 0.278\*\* | -0.042 | -0.048 |
| 10. SIQYA | -0.148 | -0.274 | 0.027 | -0.254 | 0.119 | 0.103 | 0.149 | 0.368 | 0.151 | \* | 0.526\*\* | 0.041 | 0.230 | -0.374\*\*\* | -0.040 |
| 11. Agreement | -0.264\* | -0.256\* | 0.128 | -0.097 | 0.135 | -0.182 | 0.081 | 0.233 | -0.154 | 0.550\*\*\* | \* | 0.263\* | -0.105 | 0.084 | 0.062 |
| 12. Influence | -0.386\*\*\* | -0.460\*\*\* | -0.059 | -0.067 | 0.284 | -0.134 | -0.110 | 0.141 | -0.039 | 0.844\*\*\* | 0.473\*\*\* | \* | 0.287\* | -0.253\* | -0.201 |
| 13. DC – Warm | -0.081 | -0.242\*\* | -0.068 | 0.019 | 0.350\*\*\* | -0.373\*\*\* | 0.002 | 0.152 | 0.103 | 0.461 | 0.095 | 0.292\*\* | \* | -0.392\*\*\* | -0.482\*\*\* |
| 14. DC – Neg | 0.010 | 0.093 | 0.279\*\* | 0.059 | -0.129 | 0.139 | -0.129 | -0.264\* | 0.065 | -0.480 | -0.139 | -0.081 | -0.360\*\*\* | \* | 0.200\* |
| 15. DC – Incon | 0.138 | 0.134 | -0.044 | -0.165 | -0.126 | 0.212\* | -0.151 | -0.130 | 0.111 | -0.243 | -0.220\* | -0.150 | -0.370\*\*\* | 0.253\*\* | \* |

Note: above diagonal = girls, below diagonal = boys.

Integ – M: Integration Mother; Diff – M: Difference Mother, Integ – F: Integration Father; Diff – F: Difference Father. Higher acceptance and security scores indicate lower adoption satisfaction. Higher difference and lower integration scores indicate lower adoption satisfaction.

SU – M: Substance Use Frequency Mother; SU – F: Substance Use Frequency Father.

Caldwell: Positive Parenting factor derived from the Caldwell HOME Scale. Higher Caldwell scores indicate higher positive parenting

SIQYA: Family Relationships Scale. Higher agreement, influence, and SIQYA scores indicate greater parent – adolescent relationship quality.

DC – Warmth: Dibble & Cohen Positive Parenting; DC – Inco: Dibble & Cohen Inconsistent Parenting; DC – Neg: Dibble & Cohen Negative Parenting. Higher warmth, inconsistency, and negative Dibble & Cohen parenting scores indicate greater warmth, inconsistent, and negative parenting respectively.

 \*p < 0.05, \*\*p < 0.01, \*\*\*p ≤ 0.001.

Table S14. *Correlations Between Predictors in Nondadopted Girls and Boys*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. |
| 1. SU – M | **\*** | 0.796\*\*\* | 0.207 | 0.064 | -0.154 | -0.079 | 0.028 | -0.286\*\* | 0.007 |
| 2. SU – F | 0.629\*\*\* | \* | 0.195 | 0.083 | -0.157 | -0.120 | 0.064 | -0.009 | 0.159 |
| 3. Caldwell | -0.119 | -0.123 | \* | 0.270\* | -0.018 | 0.082 | 0.296\*\* | -0.231\* | -0.142 |
| 4. SIQYA | -0.039 | 0.124 | 0.406\*\*\* | \* | 0.641\*\*\* | 0.408\*\* | 0.197 | -0.121 | -0.010 |
| 5. Agreement | 0.054 | -0.046 | 0.346\*\* | 0.363\*\*\* | \* | 0.252\* | 0.137 | -0.123 | -0.250\*\* |
| 6. Influence | 0.015 | 0.107 | 0.040 | 0.255\* | 0.186 | \* | 0.210\* | -0.279\* | -0.277\*\* |
| 7. DC – Warm | -0.174 | -0.130 | 0.406\*\*\* | 0.105 | 0.004 | -0.033 | \* |  | -0.430\*\*\* |
| 8. DC – Neg | -0.156 | -0.293\* | -0.167 | -0.321\*\*\* | -0.048 | -0.070 | -0.305\*\*\* | \* | 0.178\* |
| 9. DC – Inco | 0.262\*\* | 0.082 | -0.160 | -0.096 | -0.062 | -0.169 | -0.521\*\*\* | 0.314\*\*\* | \* |
|  |  |  |  |  |  |  |  |  |

Note: above diagonal = girls, below diagonal = boys.

Integ – M: Integration Mother; Diff – M: Difference Mother, Integ – F: Integration Father; Diff – F: Difference Father. Higher acceptance and security scores indicate lower adoption satisfaction. Higher difference and lower integration scores indicate lower adoption satisfaction.

SU – M: Substance Use Frequency Mother; SU – F: Substance Use Frequency Father.

Caldwell: Positive Parenting factor derived from the Caldwell HOME Scale. Higher Caldwell scores indicate higher positive parenting

SIQYA: Family Relationships Scale. Higher agreement, influence, and SIQYA scores indicate greater parent – adolescent relationship quality.

DC – Warmth: Dibble & Cohen Positive Parenting; DC – Inco: Dibble & Cohen Inconsistent Parenting; DC – Neg: Dibble & Cohen Negative Parenting. Higher warmth, inconsistency, and negative Dibble & Cohen parenting scores indicate greater warmth, inconsistent, and negative parenting respectively.

 \*p < 0.05, \*\*p < 0.01, \*\*\*p ≤ 0.001.

In nonadopted boys, father’s substance use frequency was measured by one last use variable, due to high correlations between last and weekly use indicators. In this group, correlations between maternal and paternal substance use were estimated using one indicator for each variable, due to high correlations between factors.

Table S15. *Direct and Indirect Effects of Positive Parenting (Caldwell HOME Scale) on Adolescent Substance Use via Parent–Child Relationship Quality (SIQYA Family Relationships Scale)*

|  |  |  |
| --- | --- | --- |
|  | Direct Effects | Indirect Effects |
| Adoptees |  |  |
| Girls | 0.001 [-0.285, 0.370] | -0.020 [-0.328, 0.157] |
| Boys | 0.500 [0.199, 2.460]\* | -0.353 [-2.181, -0.038]\* |
| Nonadoptees |  |
| Girls | 0.263 [-0.005, 1.093] | -0.159 [-0.974, 0.056] |
| Boys | 0.095 [-0.213, 0.345] | -0.190 [-0.402, -0.009]\* |

Adolescent SU no longer hierarchical factor, consists of lifetime use indicators.

Correlations between predictors and adolescent SU consistent with those using hierarchical factor.

Direct effects positive and significant due to suppression effects (e.g., high correlations between positive parenting and parent–child relationship quality).

\*95% confidence interval does not include 0

Table S16. *Direct and Indirect Effects of Positive Parenting (Caldwell HOME Scale) on Adolescent Substance Use via Orientation to Parents (Agreement Factor)*

|  |  |  |
| --- | --- | --- |
|  | Direct Effects | Indirect Effects |
| Adoptees |  |  |
| Girls | 0.005 [-0.284, 0.300] | -0.024 [-0.270, 0.214] |
| Boys | 0.092 [-0.106, 0.289] | 0.057 [-0.037, 0.161] |
| Nonadoptees |  |
| Girls | 0.085 [-0.110, 0.288] | 0.018 [-0.143, 0.151] |
| Boys | 0.020 [-0.244, 0.312] | -0.114 [-0.295, -0.036]\* |

Adolescent SU no longer hierarchical factor, consists of lifetime use indicators.

Correlations between predictors and adolescent SU consistent with those using hierarchical factor.

\*95% confidence interval does not include 0

Table S17. *Correlations of Predictors Between Siblings*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Parent-Child Relationship Quality (SIQYA) | Agreement | Influence |
| Group |  |  |  |
| Adoptive Siblings | 0.190 [-0.191, 0.571] | 0.152 [-0.096, 0.400] | 0.334\* [0.010, 0.658] |
| Nonadopted Siblings | 0.364\* [0.160, 0.568] | 0.251\* [0.043, 0.459] | 0.237 [-0.030, 0.504] |

χ2  difference test for significant differences in correlations:

SIQYA: χ2(1) = 0.769, *p* = 0.380

Agreement: χ2(1) = 0.358, *p* = 0.550

Influence: χ2(1) = 0.207, *p* = 0.649

\**p* < 0.05

Table S18. *Correlations of Predictors Between Siblings: Mixed Sex (Boy–Girl) Sibling Pairs Only*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Parent-Child Relationship Quality (SIQYA) | Agreement | Influence |
| Group |  |  |  |
| Adoptive Mixed Sex Sibling Pairs | 0.238 [-0.182, 0.658] | 0.077 [-0.205, 0.359] | 0.349 [-0.017, 0.714] |
| Nonadopted Siblings Mixed Sex Sibling Pairs | 0.192 [-0.140, 0.524] | 0.131 [-0.203, 0.464] | 0.320 [-0.105, 0.746] |

SIQYA: χ2(1) = 0.347, *p =* .556

Agreement: χ2(1) = 0.059, *p* = .810

Influence: χ2(1) = 0.010, *p* = 0.921

\**p* < 0.05

|  |
| --- |
| Table S19*. Parental Substance Use Measure: Frequencies and Percentages (Total N = 975)* |
| Alcohol Use Item | Ordinal Category | Frequency  | % |
| When was the last time you used alcohol? |   |   |   |
|   | Missing | 66 | 6.8 |
| 0 | More than month ago | 87 | 8.9 |
| 1 | Week to month ago | 257 | 26.4 |
| 2 | Less than a week ago | 565 | 57.9 |
| How frequently do you use alcohol per week? |  |  |   |
|   | Missing | 33 | 3.4 |
| 0 | less than 1x per week | 451 | 46.3 |
| 1 | 1 per week | 232 | 23.8 |
| 2 | 1 per day | 172 | 17.6 |
| 3 | 2+ per day | 87 | 8.9 |

Table S20. *Correlations Between Adolescent Substance Use and Parental Substance Use*

|  |  |  |
| --- | --- | --- |
|  | SU – M  | SU – F  |
| Group |  |  |
| Adoptees |  |  |
| Girls | 0.094 [-0.125, 0.314] | 0.121 [-0.088, 0.330] |
| Boys | 0.085 [-0.116, 0.285] | 0.093 [-0.123, 0.309] |
| Nonadoptees |  |  |
| Girls | 0.208\* [0.023, 0.392] | 0.181 [-0.026, 0.387] |
| Boys | 0.032 [-0.142, 0.206] | 0.208 [-0.006, 0.423] |

*Note.* SU – M: Substance Use Frequency Mother; SU – F: Substance Use Frequency Father.

\*p < 0.05. No FDR adjusted p < 0.05.

No evidence for differences by sex, ∆χ2(2) = 1.752, p = 0.416, or adoption status ∆χ2(2) = 0.718, p = 0.698.

Figure S1.

*0.571/0.591*

0.673/0.662

*0.644/0.677*

*0.588/0.671*

*0.861/0.820*

*0.782/0.729*

0.665/0.634

0.570/0.548

0.800/0.815

0.691/0.623

0.904/0.734

*0.715/0.822*

Year 3

Mom spontan-eously praises child

0.713/0.636

*0.621/0.656*

Year 2

Mom’s voice

is positive

0.724/0.653

*0.693/0.641*

0.691/0.650

*0.735/0.784*

*0.428/0.409*

0.433/0.497

*0.693/0.721*

Year 4

Mom’s

answers kid’s queries

*0.647/0.649*

0.729/0.610

*0.784/0.817*

0.613/0.640

*0.665/0.590*

0.783/0.652

0.787/0.729

Year 4

Mom spontan-eously praises child

Year 4

Mom’s voice is positive

*0.725/0.794*

0.937/0.911

*0.669/0.731*

0.637/0.673

*0.693/0.631*

*0.732/0.750*

0.802/0.755

0.646/0.677

0.755/0.759

*0.733/0.800*

Year 3

Mom’s response to praise of kid

Year 1

Mom initiates conversation

Year 4

Mom caresses, kisses kid

Year 2

Mom initiates conversation

Year 1

Mom’s voice

is positive

Year 1

Mom’s response to praise of kid

Year 1

Mom spontan-eously praises

child

Year 3

Mom’s voice

is positive

Year 2

Mom’s response to praise of kid

Year 2

Mom spontan-eously praises

child

Model fit: χ2(464) = 656.563, p < 0.001, RMSEA = 0.047, CFI = 0.945

χ2  difference test for measurement invariance: χ2(120) = 132.863, *p* = 0.199

Loading index: *italicized/italicized = female adopted/male adopted offspring;* not italicized/not italicized = female biological/male biological offspring

All loadings *p* < 0.01

Standardized parameters reported: although factor loadings and thresholds set to be equal in all groups, loadings differ because latent variable variances differ across groups

Figure S2.

*0.799/0.832*

0.831/0.814

*0.801/0.833*

0.832/0.815

*0.733/0.772*

0.771/0.750

*0.759/0.795*

0.794/0.775

*0.784/0.818*

0.817/0.799

*0.774/0.809*

0.808/0.790

*0.815/0.845*

0.845/0.828

*0.628/0.673*

0.672/0.648

Year 13

Year 12

Year 14

Year 15

Model fit: χ2(146) = 201.709, p = 0.002, RMSEA = 0.047, CFI = 0.971

χ2  difference test for measurement invariance: χ2(24) = 13.388, p = 0.959 (cf. scalar vs residual)

Loading index: *italicized/italicized = female adopted/male adopted offspring;* not italicized/not italicized = female biological/male biological offspring

All loadings p < 0.01

Standardized parameters reported: although factor loadings set to be equal in 4 groups, loadings differ because latent variable variances differ across groups

Year 10

Year 9

Year 11

Year 7

Figure S3.

Year 12

Year 15

Year 14

Year 13

Year 11

Year 10

Year 9

Year 7

Model fit: χ2(146) = 222.875, p < 0.001, RMSEA = 0.055, CFI = 0.964

χ2  difference test for measurement invariance: χ2(24) = 32.530, p = 0.114 (cf. scalar vs residual)

Loading index: *italicized/italicized = female adopted/male adopted offspring;* not italicized/not italicized = female biological/male biological offspring

All loadings p < 0.01

Standardized parameters reported: although factor loadings set to be equal in 4 groups, loadings differ because latent variable variances differ across groups

*0.657/0.617*

0.625/0.698

*0.742/0.706*

0.713/0.778

*0.809/0.778*

0.785/0.839

*0.844/0.816*

0.822/0.869

*0.838/0.810*

0.816/0.864

*0.806/0.775*

0.781/0.836

*0.786/0.753*

0.760/0.818

*0.832/0.803*

0.809/0.859

Figure S4.

Model fit: χ2(80) = 167.297, p < 0.001, RMSEA = 0.079, CFI = 0.966

χ2  difference test for measurement invariance: χ2(21) = 34.378 p = 0.033 (cf configural vs metric)

Loading index: *italicized/italicized = female adopted/male adopted offspring;* not italicized/not italicized = female biological/male biological offspring

All loadings p < 0.01

Standardized parameters reported: factor loadings freed in 4 groups, latent variable variances differ across groups

Year 10

Year 12

*0.810/0.785*

0.849/0.801

*0.788/0.910*

0.864/0.827

Year 9

*0.880/0.773*

0.825/0.851

Year 13

*0.862/0.862*

0.874/0.888

Year 11

*0.875/0.840*

0.866/0.889

Year 14

*0.836/0.851*

0.867/0.850

Year 15

*0.887/0.708*

0.825/0.698

Year 7

*0.599/0.741*

0.670/0.592

Figure S5.

Model fit: χ2(282) = 402.209, p < 0.001, RMSEA = 0.051, CFI = 0.997

χ2  difference test for measurement invariance: χ2(120) = 118.249, p = 0.528

Loading index: *italicized/italicized = female adopted/male adopted offspring;* not italicized/not italicized = female biological/male biological offspring

All loadings p < 0.01

Standardized parameters reported: although factor loadings and thresholds set to be equal in all groups, loadings differ because latent variable variances differ across groups

Lifetime use

Past 12 months use

Past 30 days use

Lifetime use

Past 12 months use

Past 30 days use

Lifetime use

Past 12 months use

Past 30 days use

Use history

Past 30 days use

*0.982/0.992*

0.954/0.981

*0.982/0.959*

0.946/0.976

0.931/0.949

*0.964/0.968*

0.896/0.874

*0.767/0.880*

0.955/0.975

*0.964/0.963*

*0.964/0.991*

0.969/0.980

0.915/0.958

0.997/0.988

*0.916/0.944*

*0.986/0.988*

*0.949/0.977*

0.957/0.969

*0.968/0.979*

*0.928/0.882*

0.998/0.967

0.938/0.974

*0.823/0.912*

*0.809/0.807*

*0.789/0.805*

*0.914/0.926*

0.832/0.854

0.805/0.884

0.776/0.796

0.964/0.924

Figure S6.

*0.246\*/0.468\*\**

0.260\*/0.186 +

*0.803/0.599*

0.720/0.679

*0.608/0.391*

0.546/0.478

*0.871/0.763*

0.792/0.757

*0.827/0.850*

0.822/0.766

*0.905/0.871*

0.836*/*0.793

*0.843/0.712*

0.721/0.713

Health

Outlook on life

School/work

Kind of person should become

Getting out of school

Important in life

Model fit: χ2(56) = 63.260, p = 0.236, RMSEA = 0.028, CFI = 0.995

χ2  difference test for measurement invariance: χ2(24) = 25.482, *p* = 0.380

Loading index: *italicized/italicized = female adopted/male adopted offspring;* not italicized/not italicized = female biological/male biological offspring

All loadings *p* < 0.01, unless otherwise specified:

+*p* < 0.1, \**p* < 0.05, \*\**p* < .01

Standardized parameters reported:

although factor loadings and thresholds set to be equal in all groups, loadings differ because latent variable variances differ across groups

Fi**g**ure S7.

*0.895/0.869*

0.847/0.874

*0.895/0.856*

0.939/0.947

Last time consumed alcohol

Alcohol consumption per week

Model fit: χ2(6) = 3.162, p = 0.788, RMSEA < 0.001, CFI = 1.00

χ2  difference test for measurement invariance: χ2(6) = 3.162, p = 0.788

Loading index: *italicized/italicized = adoptive mother/adoptive father,* not italicized/not italicized = control mother/control father

All loadings p < 0.01

Standardized parameters reported: although factor loadings and thresholds set to be equal in 4 groups, loadings differ because latent variable variances differ across groups