<HX> Appendix A

<AP> Supplemental results

The supplemental results presented below are organized by child temperament and maternal anxiety outcome at age 3 years as a function of each predictor in infancy. Only statistically significant (*p* < .050) and modest (nonsignificant trend, *p* = .050–.079) effects are reported in the text.

<H2> *Surgency (age 3)*

<H3> *Surgency (infancy).* The total effect of T1 surgency on T3 surgency was significant: higher infant surgency predicted higher 3-year surgency. This effect operated indirectly through higher T2 surgency for both boys and girls. Moreover, in boys only there was a residual direct effect of T1 surgency on T3 surgency that was unaccounted for by the observed mediators, suggesting the possibility of additional mediation through other unmeasured variables in this pathway.

<H3> *Negative affectivity (infancy)*. The total effect of T1 negative affectivity on T3 surgency was not significant. However, higher T1 negative affectivity predicted lower T3 surgency indirectly through higher T2 negative affectivity among girls only.

<H3> *Orienting/Regulation (infancy)*. There were no significant total or indirect effects of T1 orienting/regulation on T3 surgency in either boys or girls.

<H3> *Maternal anxiety (infancy)*. The total effect of T1 maternal anxiety on T3 child surgency was significant: higher maternal anxiety predicted higher child surgency. This effect operated indirectly through higher T2 maternal anxiety in both boys and girls.

<H2> *Negative affectivity (age 3)*

<H3> *Surgency (infancy).* The total effect of T1 surgency on T3 negative affectivity was not significant. However, higher T1 surgency predicted higher T3 negative affectivity indirectly both through higher T2 negative affectivity and, modestly, through higher T2 surgency in both boys and girls.

<H3> *Negative affectivity (infancy)*. The total effect of T1 negative affectivity on T3 negative affectivity was significant: higher infant negative affectivity predicted higher 3-year negative affectivity. This effect operated indirectly through higher T2 negative affectivity in both boys and girls. There was also a modest residual direct effect of T1 negative affectivity on T3 negative affectivity that was unaccounted for by the observed mediators, suggesting the possibility of additional mediation through other unmeasured variables in this pathway.

<H3> *Orienting/regulation (infancy)*. The total effect of T1 orienting/regulation on T3 negative affectivity was not significant. However, lower T1 orienting/regulation predicted higher T3 negative affectivity indirectly through lower T2 effortful control in both boys and girls.

<H3> *Maternal anxiety (infancy)*. The total effect of T1 maternal anxiety on T3 child negative affectivity was significant: higher maternal anxiety predicted higher child negative affectivity. This effect operated indirectly through lower T2 effortful control and, modestly, through higher T2 negative affectivity in both boys and girls. There was also a modest residual direct effect of T1 maternal anxiety on T3 child negative affectivity that was unaccounted for by the observed mediators, suggesting the possibility of additional mediation through other unmeasured variables in this pathway.

<H2> *Effortful control (age 3)*

<H3> *Surgency (infancy).* There were no significant total or indirect effects of T1 surgency on T3 effortful control for either boys or girls.

<H3> *Negative affectivity* *(infancy)*. There were no significant total or indirect effects of T1 negative affectivity on T3 effortful control for either boys or girls.

<H3> *Orienting/regulation (infancy)*. The total effect of T1 orienting/regulation on T3 effortful control was significant: higher orienting/regulation predicted higher effortful control. This effect operated indirectly through higher T2 effortful control in both boys and girls.

<H3> *Maternal anxiety (infancy)*. The total effect of T1 maternal anxiety on T3 child effortful control was significant: higher maternal anxiety predicted lower child effortful control. This effect operated indirectly through lower T2 effortful control in both boys and girls.

<H2> *Maternal anxiety (age 3)*

<H3> *Surgency (infancy).* There were no significant total or indirect effects of T1 child surgency on T3 maternal anxiety for either boys or girls.

<H3> *Negative affectivity (infancy)*. There were no significant total or indirect effects of T1 child negative affectivity on T3 maternal anxiety for either boys or girls.

<H3> *Orienting/regulation (infancy)*. The total effect of T1 child orienting/regulation on T3 maternal anxiety was not significant. However, lower T1 orienting/regulation predicted higher T3 maternal anxiety indirectly through lower T2 child effortful control in both boys and girls.

<H3> *Maternal anxiety (infancy)*. The total effect of T1 maternal anxiety on T3 maternal anxiety was significant: higher maternal anxiety in infancy predicted higher maternal anxiety at age 3 years. This effect operated indirectly both through higher T2 maternal anxiety and, modestly, through lower T2 child effortful control in both boys and girls. There was also a residual direct effect of T1 maternal anxiety on T3 maternal anxiety that was unaccounted for by the observed mediators, suggesting the possibility of additional mediation through other unmeasured variables in this pathway.

<TC> **Table A.1.** Sample sociodemographic and descriptive statistics

|  |  |  |  |
| --- | --- | --- | --- |
|  | **T1** | **T2** | **T3** |
|  | Boys | Girls | *p* | All | Boys | Girls | *p* | All | Boys | Girls | *p* | All |
|  | % (*n*) | % (*n*) |  | % (*n*) | % (*n*) | % (*n*) |  | % (*n*) | % (*n*) | % (*n*) |  | % (*n*) |
| Child sex | 54.2 (293) | 45.8 (248) | *ns* | 100 (541) |  |  |  |  |  |  |  |  |
| Child race |  |  | *ns* |  |  |  |  |  |  |  |  |  |
|  White | 79.2 (232) | 80.2 (199) |  | 79.7 (431) |  |  |  |  |  |  |  |  |
|  Black or African American | 3.4 (10) | 1.6 (4) |  | 2.6 (14) |  |  |  |  |  |  |  |  |
|  American Indian or  Alaska Native | 0.0 (0) | 0.0 (0) |  | 0.0 (0) |  |  |  |  |  |  |  |  |
|  Asian Indian | 0.3 (1) | 0.4 (1) |  | 0.4 (2) |  |  |  |  |  |  |  |  |
|  Asian  | 2.4 (7) | 3.2 (8) |  | 2.8 (15) |  |  |  |  |  |  |  |  |
|  Pacific Islander  | 0.0 (0) | 0.4 (1) |  | 0.2 (1) |  |  |  |  |  |  |  |  |
|  Mixed race | 13.7 (40) | 12.9 (32) |  | 13.3 (72) |  |  |  |  |  |  |  |  |
| Family household income(past 12 months) |  |  | *ns* |  |  |  |  |  |  |  |  |  |
|  Don’t know | 1.7 (5) | 1.2 (3) |  | 1.5 (8) |  |  |  |  |  |  |  |  |
|  Less than $5,000 | 0.3 (1) | 1.2 (3) |  | 0.7 (4) |  |  |  |  |  |  |  |  |
|  $5,000 through $11,999 | 0.3 (1) | 0.8 (2) |  | 0.6 (3) |  |  |  |  |  |  |  |  |
|  $12,000 through $15,999 | 0.3 (1) | 0.4 (1) |  | 0.4 (2) |  |  |  |  |  |  |  |  |
|  $16,000 through $24,999 | 1.4 (4) | 0.8 (2) |  | 1.1 (6) |  |  |  |  |  |  |  |  |
|  $25,000 through $34,999 | 0.7 (2) | 2.0 (5) |  | 1.3 (7) |  |  |  |  |  |  |  |  |
|  $35,000 through $49,999 | 3.1 (9) | 2.8 (7) |  | 3.0 (7) |  |  |  |  |  |  |  |  |
|  $50,000 through $74,999 | 9.2 (27) | 10.9 (27) |  | 10.0 (54) |  |  |  |  |  |  |  |  |
|  $75,000 through $99,999 | 16.7 (43) | 12.1 (30) |  | 13.5 (73) |  |  |  |  |  |  |  |  |
|  $100,000 and greater | 59.7 (175) | 60.5 (150) |  | 60.1 (325) |  |  |  |  |  |  |  |  |
| Maternal education |  |  | *ns* |  |  |  |  |  |  |  |  |  |
|  8th grade or less | 0.0 (0) | 0.0 (0) |  | 0.0 (0) |  |  |  |  |  |  |  |  |
|  Some high school | 0.0 (0) | 0.4 (1) |  | 0.2 (1) |  |  |  |  |  |  |  |  |
|  High school/GED | 4.8 (14) | 5.2 (13) |  | 5.0 (27) |  |  |  |  |  |  |  |  |
|  Associate’s degree | 2.4 (7) | 1.2 (3) |  | 1.8 (10) |  |  |  |  |  |  |  |  |
|  Bachelor’s degree | 30.4 (89) | 31.0 (77) |  | 30.7 (166) |  |  |  |  |  |  |  |  |
|  Master’s degree | 41.3 (121) | 44.4 (110) |  | 42.7 (231) |  |  |  |  |  |  |  |  |
|  MD, PhD, JD,  or Equivalent | 20.8 (61) | 17.7. (44) |  | 19.4 (105) |  |  |  |  |  |  |  |  |
|  | Mean (*SD*) | Mean (*SD*) | *p* | Mean (*SD*) | Mean (*SD*) | Mean (*SD*) | *p* | Mean (*SD*) | Mean (*SD*) | Mean (*SD*) | *p* | Mean (*SD*) |
| Child birth weight (in grams) | 3623.2 (613.2) | 3443.2 (616.3) | .001 | 3540.3 (620.6) |  |  |  |  |  |  |  |  |
| Child age (in days) | 255.6 (90.1) | 259.4 (93.0) | *ns* | 257.4 (91.4) | 752.6 (40.6) | 752.8 (42.7) | *ns* | 752.7 (41.5) | 1136.6 (56.9) | 1143.6 (57.7) | *ns* | 1139.8 (57.3) |
| Maternal age (in years) | 33.6 (4.4) | 33.5 (3.7) | *ns* | 33.6 (4.1) | 34.9 (4.4) | 35.0 (3.5) | *ns* | 35.0 (4.0) | 36.0 (4.4) | 35.8 (3.7) | *ns* | 35.9 (4.1) |
| STAI |  |  |  |  |  |  |  |  |  |  |  |  |
|  Maternal anxiety | 33.8 (8.0) | 34.5 (7.8) | *ns* | 34.1 (7.9) | 32.2 (7.3) | 33.4 (7.9) | .131 | 32.7 (7.6) | 32.4 (7.4) | 33.6 (7.4) | .147 | 32.9 (7.4) |
| IBQ-R/ ECBQ |  |  |  |  |  |  |  |  |  |  |  |  |
|  Surgency | 4.78 (0.72) | 4.73 (0.68) | *ns* | 4.76 (0.70) | 4.99 (0.56) | 4.85 (0.53) | .009 | 4.93 (.55) | 5.03 (0.58) | 4.85 (0.46) | .001 | 4.95 (0.53) |
|  Negative affectivity | 3.25 (0.69) | 3.19 (.072) | *ns* | 3.17 (0.70) | 2.82 (0.51) | 2.88 (0.47) | *ns* | 2.85 (.49) | 2.91 (0.55) | 2.99 (0.51) | .176 | 2.95 (0.54) |
|  Orienting/regulation, Effortful control | 5.10 (0.57) | 5.07 (0.58) | *ns* | 5.09 (0.57) | 4.86 (0.55) | 4.81 (0.57) | *ns* | 4.84 (.56) | 4.96 (0.49) | 4.99 (0.54) | *ns* | 4.97 (0.52) |
| ITSEA |  |  |  |  |  |  |  |  |  |  |  |  |
|  Externalizing behaviors |  |  |  |  |  |  |  |  |  |  |  |  |
| Raw scores |  |  |  |  |  |  |  |  | 0.41 (0.22) | 0.38 (0.19) | .088 | 0.4 (0.21) |
| T scores |  |  |  |  |  |  |  |  | 47.72 (8.2) | 48.14 (6.5) | *ns* | 47.92 (7.5) |
|  Internalizing behaviors |  |  |  |  |  |  |  |  |  |  |  |  |
| Raw scores |  |  |  |  |  |  |  |  | 0.43 (0.23) | 0.51 (0.21) | .001 | 0.47 (0.23) |
| T scores |  |  |  |  |  |  |  |  | 47.70 (10.2) | 50.73 (9.0) | .004 | 49.12 (9.6) |
|  Dysregulation |  |  |  |  |  |  |  |  |  |  |  |  |
| Raw scores |  |  |  |  |  |  |  |  | 0.41 (0.21) | 0.43 (0.22) | *ns* | 0.42 (0.22) |
| T scores |  |  |  |  |  |  |  |  | 47.86 (9.3) | 48.49 (9.6) | *ns* | 48.16 (9.4) |
|  Competence |  |  |  |  |  |  |  |  |  |  |  |  |
| Raw scores |  |  |  |  |  |  |  |  | 1.55 (0.22) | 1.58 (0.22) | *ns* | 1.56 (0.22) |
| T scores |  |  |  |  |  |  |  |  | 54.07 (7.8) | 50.3 (8.8) | <.001 | 52.32 (8.5) |

<TFN> *Note*: *n* represents number of cases, and *p* values are for two-tailed, two-sample *t* tests, reported without correction for multiple comparisons. SD, standard deviation. STAI, State–Trait Anxiety Inventory, trait scale. IBQ-R, Infant Behavior Questionnaire—Revised. ECBQ, Early Childhood Behavior Questionnaire—Short Form. ITSEA, Infant–Toddler Social and Emotional Assessment.

<H2> *Sample social-emotional characteristics by child sex*

Using the recommended clinical cutoff STAI score of ≥40, among mothers of boys, 20.8% scored above the cutoff at T1, 14.6% at T2, and 14.9% at T3; among mothers of girls, 21.4% scored above the cutoff at T1, 18.1% at T2, and 15.7% at T3. Using clinical cutoff ITSEA *T* scores of ≥63 and ≤37 for problem and competence domains, respectively, at T3, boys scored in the clinical range (extreme 10th percentile) as follows: externalizing symptoms, 5.1%; internalizing symptoms, 9.4%; dysregulation, 6.0%; and competence delays, 2.8%, and girls scored in the clinical range as follows: externalizing symptoms, 2.0%; internalizing symptoms, 8.9%; dysregulation, 7.0%; and competence delays, 10.5%.

<TC> **Table A.2.** Pearson correlation coefficients among study variables for whole sample

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | *N* |
| **T1, Infancy time point** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 IBQ-R surgency | — |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 541 |
| 2 IBQ-R negative affectivity | –.01 | — |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 541 |
| 3 IBQ-R orienting/regulation | .21 \*\*\* | –.39 \*\*\* | — |  |  |  |  |  |  |  |  |  |  |  |  |  | 541 |
| 4 STAI maternal anxiety | –.16 \*\*\* | .33 \*\*\* | –.29 \*\*\* | — |  |  |  |  |  |  |  |  |  |  |  |  | 541 |
|  [Infant age] | .43 \*\*\* | .09 \* | –.30 \*\*\* | .01 |  |  |  |  |  |  |  |  |  |  |  |  | 541 |
| **T2, 2-year time point** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 ECBQ surgency | .24 \*\*\* | –.06 | .12 \* | –.07 | — |  |  |  |  |  |  |  |  |  |  |  | 375 |
| 6 ECBQ negative affectivity | .04 | .38 \*\*\* | –.09 | .18 \*\*\* | –.04 | — |  |  |  |  |  |  |  |  |  |  | 375 |
| 7 ECBQ effortful control | .23 \*\*\* | –.23 \*\*\* | .47 \*\*\* | –.33 \*\*\* | .13 \* | –.28 \*\*\* | — |  |  |  |  |  |  |  |  |  | 375 |
| 8 STAI maternal anxiety | –.20 \*\*\* | .26 \*\*\* | –.22 \*\*\* | .73 \*\*\* | –.09 | .24 \*\*\* | –.39 \*\*\* | — |  |  |  |  |  |  |  |  | 365 |
|  [Child age] |  |  |  |  | .08 | –.06 | .13 \* | –.02 |  |  |  |  |  |  |  |  | 375 |
| **T3, 3-year time point** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Primary outcomes** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 ITSEA externalizing Behaviors | –.06 | .12 \* | –.09 | .20 \*\*\* | .21 \*\*\* | .28 \*\*\* | –.38 \*\*\* | .24 \*\*\* | — |  |  |  |  |  |  |  | 325 |
| 10 ITSEA internalizing Behaviors | –.15 \* | .25 \*\*\* | –.15 \* | .17 \*\* | –.21 \*\*\* | .46 \*\*\* | –.24 \*\*\* | .24 \*\*\* | .21 \*\*\* | — |  |  |  |  |  |  | 337 |
| 11 ITSEA dysregulation | –.11 \* | .33 \*\*\* | –.19 \*\*\* | .29 \*\*\* | –.06 | .45 \*\*\* | –.3 \*\*\* | .28 \*\*\* | .43 \*\*\* | .50 \*\*\* | — |  |  |  |  |  | 337 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 12 ITSEA competence | .31 \*\*\* | –.19 \*\*\* | .33 \*\*\* | –.20 \*\*\* | .13 \* | –.13 \* | .48 \*\*\* | –.25 \*\*\* | –.33 \*\*\* | –.21 \*\*\* | –.33 \*\*\* | — |  |  |  |  | 327 |
| **Secondary outcomes** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 ECBQ surgency | .22 \*\*\* | –.02 | .13 \* | .01 | .63 \*\*\* | –.003 | .05 | .03 | .32 \*\*\* | –.29 \*\*\* | –.03 |  | — |  |  |  | 342 |
| 14 ECBQ negative affectivity | .003 | .35 \*\*\* | –.15 \* | .23 \*\*\* | .01 | .7 \*\*\* | –.29 \*\*\* | .24 \*\*\* | .39 \*\*\*\* | .56 \*\*\* | .57 \*\*\* | –.22 \*\*\* | .06 | — |  |  | 342 |
| 15 ECBQ effortful control | .17 \*\*\* | –.15 \*\* | .3 \*\*\* | –.17 \*\*\* | .04 | –.14 \* | .69 \*\*\* | –.28 \*\*\* | –.51 \*\*\* | –.13 \* | –.32 \*\*\* | .59 \*\*\* | –.05 | –.3 \*\*\* | — |  | 342 |
| 16 STAI maternal anxiety | –.24 \*\*\* | .31 \*\*\* | –.24 \*\*\* | .74 \*\*\* | –.11 | .29 \*\*\* | –.36 \*\*\* | .81 \*\*\* | .29 \*\*\* | .25 \*\*\* | .34 \*\*\* | –.26 \*\*\* | .04 | .30 \*\*\* | –.33 \*\*\* | — | 334 |
|  [Child age] |  |  |  |  |  |  |  |  | .01 | –.03 | .02 | .05 | .07 | –.02 | –.03 | –.09 | 343 |

<TFN> *Note*: *N*, total number of cases with data included in the analysis. STAI, State–Trait Anxiety Inventory, trait scale. IBQ-R, Infant Behavior Questionnaire—Revised. ECBQ, Early Childhood Behavior Questionnaire—Short Form. ITSEA, Infant–Toddler Social and Emotional Assessment. Infant/child age, in days, reported at each time point, *p* values for two-tailed, and Pearson correlations are reported without correction for multiple testing. \**p* < .05. \*\**p* ≤ .005. \*\*\**p* ≤ .001.

<TC> **Table A.3.** Total, direct, and indirect effects of child temperament and maternal anxiety in infancy on child temperament and maternal anxiety outcomes at age 3 years: Boys only

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Predictor  | Effect | **Child surgency** | **Child negative affectivity** | **Child effortful control** | **Maternal anxiety** |
|  |  | β (*SE*) | 95% CI | β (*SE*) | 95% CI | β (*SE*) | 95% CI | β (*SE*) | 95% CI |
| **Infant surgency** | Total  | **.399\*\*\*** (.05) | [.29, .50] | .091 (.06) | [–.03, .21] | .027 (.06) | [–.09, .14] | –.022 (.04) | [–.09, .05] |
| Direct | **.224\*\*\*** (.05) | [.13, .32] | .005 (.05) | [–.09, .10] | –.012 (.05) | [–.12, .09] | –.018 (.03) | [–.08, .05] |
|  | *z* | STD ES95% CI | *z* | STD ES95% CI | *z* | STD ES95% CI | *z* | STD ES95% CI |
| Indirect   SUR  NA  EC  STAI | 5.115.310.591–0.681–0.518 | **.175\*\*\***[.11, .24]**.179\*\*\***[.11, .25].004[–.01, .02]–.003[–.01, .006]–.004[–.02, .01] | 2.321.982.01–1.260.486 | **.086\***[.01, .16]**.027\***[.000, .05]**.068\***[.002, .13]–.011[–.03, .006].002[–.005, .009] | 0.922–1.340.5061.390.459 | .038[–.04, .12]–.018[–.04, .008].003[–.008, .01]–.052[–.02, .13].001[–.004, .007] | –0.1641.140.264–1.17–0.524 | –.004[–.05, .05].013[–.009, .04].001[–.007, .009]–.007[–.02, .005]–.011[–.05, .03] |
|  |  | β (*SE*) | 95% CI | β (*SE*) | 95% CI | β (*SE*) | 95% CI | β (*SE*) | 95% CI |
| **Infant negative affectivity** | Total  | .042 (.05) | [–.06, .14] | **.295\*\*\*** (.05) | [.19, .40] | –.011 (.05) | [–.1, .09] | .047 (.04) | [–.04, .13] |
| Direct | .037 (.04) | [–.04, .12] | **.081†** (.04) | [–.005, .17] | –.008 (.05) | [–.1, .09] | .025 (.04) | [–.05, .1] |
|  | *z* | STD ES95% CI | *z* | STD ES95% CI | *z* | STD ES95% CI | *z* | STD ES95% CI |
| Indirect   SUR  NA  EC  STAI | 0.144–0.5590.6170.3090.924 | .005[–.07, .08]–.016[–.07, .04].0,3[–.03, .06].001[–.003, .005].008[–.009, .02] | 5.91–0.5366.410.327–0.772 | **.214\*\*\***[.14, .29]–.003[–.01, .007]**.217\*\*\***[.15, .28].002[–.01, .02]–.003[–.01, .005] | –0.0840.5140.515–0.327–0.684 | –.003[–.08, .07].002[–.005, .008].009[–.02, .04]–.011[–.08, .06]–.002[–.009, .004] | 0.884 –0.5320.2680.3180.943 | .023[–.03, .07]–.001[–.006, .003].003[–.02, .03].002[–.008, .01].019[–.02, .06] |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Predictor  | Effect | **Child surgency** | **Child negative affectivity** | **Child effortful control** | **Maternal anxiety** |
|  |  | β (*SE*) | 95% CI | β (*SE*) | 95% CI | β (*SE*) | 95% CI | β (*SE*) | 95% CI |
| **Infant orienting/ regulation** | Total  | .019 (.05) | [–.08, .12] | –.027 (.06) | [–.14, .09] | **.289\*\*\*** (.05) | [.18, .4] | –.005 (.04) | [–.09, .08] |
| Direct | .058 (.05) | [–.04, .15] | .010 (.06) | [–.10, .12] | .016 (.05) | [–.08, .11] | .045 (.04) | [–.03, .12] |
|  | *z* | STD ES95% CI | *z* | STD ES95% CI | *z* | STD ES95% CI | *z* | STD ES95% CI |
| Indirect   SUR  NA  EC  STAI | –0.978–0.6330.418–0.775–0.475 | –.039[–.12, .04]–.020[–.08, .04].001[–.004, .007]–.016[–.06, .02]–.004[–.02, .01] | –0.990–0.6040.606–2.590.473 | –.037[–.11, .04]–.003[–.01, .007].019[–.04, .08]**–.055\***[–.1, –.01].002[–.005, .009] | 6.910.5590.3926.930.435 | **.273\*\*\***[.2, .35].002[–.005, .009].001[–.003, .005]**.269\*\*\***[.19, .35].001[–.004, .007] | –1.71–0.5730.246–2.07–0.477 | –.050[–.11, .007]–.001[–.006, .004].000[–.002, .003]**–.038\***[–.07, –.002]–.010[–.05, .03] |
|  |  | β (*SE*) | 95% CI | β (*SE*) | 95% CI | β (*SE*) | 95% CI | β (*SE*) | 95% CI |
| **Maternal anxiety in infancy** | Total  | **.142\*\*** (.05) | [.05, .24] | **.124\*** (.05) | [.02, .23] | **–.136\*** (.05) | [–.24, –.03] | **.759\*\*\*** (.04) | [.69, .83] |
| Direct | –.026 (.06) | [–.14, .09] | **.098†** (.05) | [–.008, .21] | .035 (.06) | [–.08, .15] | **.367\*\*\*** (.05) | [.27, .47] |
|  | *z* | STD ES95% CI | *z* | STD ES95% CI | *z* | STD ES95% CI | *z* | STD ES95% CI |
| Indirect   SUR  NA  EC  STAI | 3.160.1530.5710.7653.41 | **.169\*\***[.06, .27].005[–.06, .07].004[–.009, .02].007[–.01, .03]**.153\*\*\***[.07, .24] | 0.5140.1521.972.11–1.5 | .025[–.07, .12].001[–.009, .01]**.058\***[.000, .12]**.026\***[.002, .05]–.060[–.14, .02] | –3.03–0.1530.508–3.49–0.964 | **–.171\*\***[–.28, –.06].000[–.007, .006].002[–.007, .01]**–.128\*\*\***[–.20, –.06]–.044[–.14, .05] | 10.210.1520.2671.969.42 | **.392\*\*\***[.32, .47].000[–.004, .005].001[–.006, .008]**.018†**[.000, .04]**.372\*\*\***[.3, .45] |

<TFN> *Note*:β,beta coefficient. SE, standard error. 95% CI, confidence interval at .05 level. *z*,standardized estimate/*SE* (estimate). STD ES, standardized effect size (a\*b) for the indirect effect. SUR, surgency. NA, negative affectivity. EC, effortful control. STAI, State–Trait Anxiety Inventory. **†***p* = .050–.079. \**p* < .05. \*\**p* ≤ .005. \*\*\**p* ≤ .001.

<TC> **Table A.4.** Total, direct, and indirect effects of child temperament and maternal anxiety in infancy on child temperament and maternal anxiety outcomes at age 3 years: Girls only

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Predictor  | Effect | **Child surgency** | **Child negative affectivity** | **Child effortful control** | **Maternal anxiety** |
|  |  | β (*SE*) | 95% CI | β (*SE*) | 95% CI | β (*SE*) | 95% CI | β (*SE*) | 95% CI |
| **Infant surgency** | Total  | **.222\*\*\*** (.07) | [.09, .36] | .084 (.06) | [–.03, .19] | .024 (.05) | [–.08, .13] | –.019 (.03) | [–.08, .04] |
| Direct | .059 (.06) | [–.06, .18] | .005 (.05) | [–.08, .09] | –.011 (.05) | [–.11, .08] | –.016 (.03) | [–.07, .04] |
|  | *z* | STD ES95% CI | *z* | STD ES95% CI | *z* | STD ES95% CI | *z* | STD ES95% CI |
| Indirect   SUR  NA  EC  STAI | 4.075.34–1.75–0.684–0.523 | **.164\*\*\***[.09, .24]**.193\*\*\***[.12, .26]–.021[–.05, .003]–.003[–.013, .006]–.005[–.02, .01] | 2.341.962.04–1.250.489 | **.079\***[.01, .15]**.025†**[.000, .05]**.062\***[.002, .12]–.010[–.03, .006].002[–.005, .008] | 0.931–1.340.5061.400.462 | .035[–.04, .11]–.016[–.04, .008].002[–.007, .01].047[–.02, .11].001[–.004, .006] | –0.1641.140.264–1.18–0.528 | –.004[–.05, .04].011[–.008, .03].001[–.006, .008]–.006[–.02, .004]–.009[–.04, .03] |
|  |  | β (*SE*) | 95% CI | β (*SE*) | 95% CI | β (*SE*) | 95% CI | β (*SE*) | 95% CI |
| **Infant negative affectivity** | Total  | –.043 (.06) | [–.17, .08] | **.316\*\*\*** (.06) | [.21, .43] | –.012 (.06) | [–.12, .1] | .048 (.04) | [–.04, .13] |
| Direct | .047 (.05) | [–.06, .15] | **.087†** (.05) | [–.004, .18] | –.009 (.05) | [–.10, .09] | .025 (.04) | [–.06, .1] |
|  | *z* | STD ES95% CI | *z* | STD ES95% CI | *z* | STD ES95% CI | *z* | STD ES95% CI |
| Indirect   SUR  NA  EC  STAI | –2.01–0.561–3.100.3100.918 | **–.090\***[–.18, –.002]–.021[–.09, .05]**–.080**\*\*[–.13, –.03].001[–.004, .006].010[–.01, .03] | 6.05–0.5376.580.327–0.772 | **.230\*\*\***[.16, .30]–.003[–.01, .007]**.233\*\*\***[.16, .30].002[–.01, .02]–.003[–.01, .005] | –0.0840.5150.516–0.328–0.683 | –.003[–.08, .07].002[–.005, .008].009[–.03, .04]–.012[–.08, .06]–.002[–.009, .004] | 0.883–0.5330.2680.3190.943 | .023[–.03, .07]–.001[–.006, .003].004[–.02, .03].002[–.008, .01].019[–.02, .06] |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Predictor  | Effect | **Child surgency** | **Child negative affectivity** |  **Child effortful control** | **Maternal anxiety** |
|  |  | β (*SE*) | 95% CI | β (*SE*) | 95% CI | β (*SE*) | 95% CI | β (*SE*) | 95% CI |
| **Infant orienting/ regulation** | Total  | .015 (.07) | [–.11, .14] | –.028 (.06) | [–.14, .09] | **.293\*\*\*** (.06) | [.19, .40] | –.005 (.04) | [–.09, .08] |
| Direct | .070 (.06) | [–.04, .19] | .011 (.06) | [–.11, .13] | .016 (.05) | [–.08, .12] | .044 (.04) | [–.03, .12] |
|  | *z* | STD ES95% CI | *z* | STD ES95% CI | *z* | STD ES95% CI | *z* | STD ES95% CI |
| Indirect   SUR  NA  EC  STAI | –1.1–0.636–0.597–0.773–0.473 | –.055[–.15, .04]–.024[–.1, .05]–.007[–.03, .02]–.019[–.07, .03]–.005[–.03, .02] | –0.989–0.6050.606–2.560.472 | –.039[–.12, .04]–.003[–.01, .007].020[–.05, .09]**–.057\***[–.10, –.01].002[–.005, .009] | 6.740.5600.3936.740.434 | **.277\*\*\***[.2, .36].002[–.005, .009].001[–.003, .005]**.273\*\*\***[.19, .35].001[–.004, .007] | –1.68–0.5730.245–2.04–0.475 | –.048[–.11, .008]–.001[–.006, .003].000[–.002, .003]**–.037\***[–.07, –.001]–.010[–.05, .03] |
|  |  | β (*SE*) | 95% CI | β (*SE*) | 95% CI | β (*SE*) | 95% CI | β (*SE*) | 95% CI |
| **Maternal anxiety in infancy** | Total  | **.143\*** (.06) | [.03, .25] | **.124\*** (.05) | [.02, .23] | **–.133\*** (.05) | [–.24, –.03] | **.716\*\*\*** (.04) | [.64, .79] |
| Direct | –.031 (.07) | [–.16, .10] | **.098†** (.05) | [–.008, .21] | .035 (.06) | [–.08, .15] | **.347\*\*\*** (.05) | [.25, .45] |
|  | *z* | STD ES95% CI | *z* | STD ES95% CI | *z* | STD ES95% CI | *z* | STD ES95% CI |
| Indirect   SUR  NA  EC  STAI | 2.730.153–1.730.7653.46 | **.174\***[.05, .3].006[–.07, .08]–.020[–.04, .003].009[–.01, .03]**.179\*\*\***[.08, .28] | 0.5130.1511.962.10–1.49 | .025[–.07, .12].001[–.009, .01]**.058†**[.000, .12]**.026\***[.002, .05]–.060[–.14, .02] | –3.06–0.1530.510–3.45–0.972 | **–.168\*\***[–.28, –.06].000[–.007, .006].002[–.006, .01]**–.126\*\*\***[–.2, –.05]–.044[–.13, .04] | 11.030.1520.2671.9410.27 | **.370\*\*\***[.30, .44].000[–.004, .005].001[–.006, .007]**.017†**[.000, .04]**.351\*\*\***[.28, .42] |

<TFN> *Note*: β,beta coefficient. SE, standard error. 95% CI, confidence interval at .05 level. *z*,standardized estimate/*SE* (estimate). STD ES, standardized effect size (a\*b) for the indirect effect. SUR, surgency. NA, negative affectivity. EC, effortful control. STAI, State–Trait Anxiety Inventory. **†***p* = .050–.079. \**p* < .05. \*\**p* ≤ .005. \*\*\**p* ≤ .001.

<TC> **Table A.5.** Covariances (T1) and residual covariances/correlations (T2/T3)

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Boys** | **Girls** |
| **T1, Infancy time point** |  | *r*  | *r* |
|  IBQ-R surgency | NAORSTAI | .005.374\*\*\*–.162\* | –.135\*.420\*\*\*–.208\*\*\* |
|  IBQ-R negative affectivity | ORSTAI | –.335\*\*\* .256\*\*\*  | –.432\*\*\*.418\*\*\* |
|  IBQ-R orienting/regulation | STAI | –.350\*\*\*  | –.241\*\*\* |
| **T2, 2-year time point** |  | *r*  | *r* |
|  ECBQ surgency | NAECSTAI | –.034.063-–.048 | –.036.066–.042 |
|  ECBQ negative affectivity | ECSTAI | –.276\*\*\*.188\*\*\* | –.271\*\*\*.153\*\*\* |
|  ECBQ effortful control | STAI | –.232\*\*\* | –.186\*\*\* |
| **T3, 3-year time point** |  | *r*  | *r* |
| **Primary outcomes** |  |  |  |
|  ITSEA externalizing behaviors | INTDYSCOMPSURNAECSTAI | .118\* .302\*\*\* –.198\*\*\* .312\*\*\* .221\*\*\* –.314\*\*\* .089  | .153\* .359\*\*\* –.242\*\*\* .111 .293\*\*\* –.397\*\*\* .106  |
|  ITSEA internalizing behaviors | DYSCOMPSURNAECSTAI | .318\*\*\* –.094 –.250\*\*\* .387\*\*\* .010 .115\*  | .380\*\*\* –.096 –.318\*\*\* .430\*\*\* .010 .114  |
|  ITSEA dysregulation | COMPSURNAECSTAI | –.205\*\*\* –.039 .410\*\*\* –.169\*\* .089  | –.192\*\*\* –.046 .417\*\*\* –.164\*\* .081  |
|  ITSEA competence | SURNAECSTAI | .070 –.124\* .405\*\*\* –.023  | .084 –.130\* .404\*\*\* –.021  |
| **Secondary outcomes** |  |  |  |
|  ECBQ surgency | NAECSTAI | .045 .017 –.046  | .059 –.216\*\* –.053  |
|  ECBQ negative affectivity | ECSTAI | –.179\*\*\* .140\*  | –.193\*\*\* .142\*  |
|  ECBQ effortful control | STAI | –.194\*\*\*  | –.187\*\*\*  |

<TFN> *Note*: *r*,residual covariance/correlation estimate. STAI, State–Trait Anxiety Inventory, trait scale. IBQ-R, Infant Behavior Questionnaire—Revised. ECBQ, Early Childhood Behavior Questionnaire—Short Form. ITSEA, Infant–Toddler Social and Emotional Assessment.SUR, infant/child surgency. NA, infant/child negative affectivity. OR, infant orienting/regulation. EC, child effortful control. STAI, maternal anxiety. INT, child internalizing behaviors. DYS, child dysregulation. COMP, child competence. \**p* < .05. \*\**p* ≤ .005. \*\*\**p* ≤ .001.

<TC> **Table A.6.** Residual variances

|  |  |  |
| --- | --- | --- |
|  | **Boys** | **Girls** |
| **T2, 2-year time point** | σ  | σ  |
|  ECBQ surgency | .91\*  | .92\*  |
|  ECBQ negative affectivity | .84\*  | .84\*  |
|  ECBQ effortful control | .73\*  | .74\*  |
|  STAI maternal anxiety | .43\*  | .54\*  |
| **T3, 3-year time point** | σ  | σ  |
| **Primary outcomes** |  |  |
|  ITSEA externalizing behaviors | .74\*  | .65\*  |
|  ITSEA internalizing behaviors | .78\*  | .76\*  |
|  ITSEA dysregulation | .76\*  | .69\*  |
|  ITSEA competence | .68\*  | .69\*  |
| **Secondary outcomes** |  |  |
|  ECBQ surgency | .52\*  | .50\*  |
|  ECBQ negative affectivity | .51\*  | .47\*  |
|  ECBQ effortful control | .50\*  | .49\*  |
|  STAI maternal anxiety | .26\*  | .27\*  |

<TFN> *Note*: σ, residual variance estimate. STAI, State–Trait Anxiety Inventory, trait scale. ECBQ, Early Childhood Behavior Questionnaire—Short Form. ITSEA, Infant–Toddler Social and Emotional Assessment. \**p* < .001.