***Preliminary Analyses***

**Missing data.** The study employed a “planned missing” design to reduce participant burden during the postpartum home visits, which produces data missing completely at random (MCAR), preventing bias in parameter estimates (Enders, 2010). Of the 322 women who participated in the prenatal home visit, 210 (93% of the randomly assigned 226 women) completed the 24-week home visit. Of these 210 families, 182 (87%) had baseline dyadic RSA data and 129 (61%) had free play dyadic RSA data.No women were missing on postpartum depressive symptoms. Neither missingness on maternal or infant RSA were related to maternal country of origin, number of other children, prenatal economic hardship, birth outcomes, child biological sex, or infant temperamental negativity (all *p*’s > .05).

Because funding was not initially available for a 12-month lab visit, only 266 of 322 families were eligible for the 12-month lab visit. Of those eligible, 205 (77%) women reported on 12-month depressive symptoms and 195 (73%) women reported on 12-month child behavior problems. At 36-months, 214 (66% of the prenatal sample) women reported on their depressive symptoms and 215 (67%) women reported on their child’s behavior problems.Missingness on 12-month maternal depressive symptoms, *p* = .008, and 12-month child problems, *p* < .001, and on 36-month maternal and child outcomes, *p*’s < .001, were related to maternal country of origin, such that mothers who were born in the US were more likely to be missing on 12-month and 36-month outcomes. Missingness on 12-month child behavior problems was related to number of other children, *t*(237.08) = 2.18, *p* = .031, such that women who were missing on 12-month child behavior problems had fewer children (M = 1.72, SD = 1.8) than children who were not missing (M = 2.15, SD = 1.57).Neither missingness on maternal depressive symptoms or child behavior problems at either 12- or 36-months were related to prenatal economic hardship, birth outcomes (birth weight, gestational age), child sex, or infant temperamental negativity (all *p*’s > .05).

**Associations with primary study variables.** Independent samples t-tests, Chi-square tests, and Pearson correlations were conducted to evaluate associations between primary study variables and potential covariates.Children’s 36-month internalizing problems, *t*(212) = 2.00, *p* = .047, and externalizing problems, *t*(212) = 3.60, *p* < .001, differed by maternal country of origin, such that children whose mothers were born in the United States had more behavior problems than children whose mothers were born in Mexico. Mothers’ 12-month depressive symptoms, *t*(203) = 2.09, *p* = .038, differed by child sex, such that mothers of boys reported more depressive symptoms than mothers of girls. Maternal RSA during free play was negatively associated with prenatal hardship, *r* = -.18, *p* = .045, and number of children, *r* = -.23, *p* = .009. Maternal RSA during baseline was negatively associated with number of children, *r* = -.16, *p* = .022. Children’s 12-month problems, *r* = .23, *p* = .002, and children’s 36-month internalizing problems, *r* = .20, *p* = .005, and externalizing problems, *r* = .24, *p* < .001, and mothers’ 36-month depressive symptoms, *r* = .18, *p* = .01, were positively correlated with 6-week temperamental negativity. Mothers’ 12-month depressive symptoms, *r* = .23, *p* < .001, and 36-month depressive symptoms, *r* = .19, *p* = .006, and children’s 36-month internalizing problems, *r* = .14, *p* = .03, were positively corelated with prenatal economic hardship. Children’s 36-month externalizing problems were negatively correlated with number of other children, *r* = -.16, *p* = .018.

***Evaluation of Parity as an Alternative Covariate***

As an alternative to the number of biological children, we also considered parity as a potential covariate. Results of preliminary analyses involving parity were similar to those obtained with the number of biological children. Parity was related to missingness on 12-month child behavior problems and maternal depressive symptoms. Specifically, missingness on 12-month child behavior problems was related to parity, *X2(*1) = 13.20, p < .001. Missingness on 12-month maternal depressive symptoms was also related to parity, X2 (1) = 11.62, p = .001. Parity was not related to missingness on 36-month outcomes. There were marginally significant differences in children’s 36-month externalizing problems by parity, *t*(212) = 1.924, p = .056, and statistically significant differences in children’s internalizing problems by parity, t(212) = 2.055, p = .041.

We subsequently evaluated primary models using parity as a covariate in lieu of number of biological children. Results of primary analyses involving free play RSA synchrony are shown in Supplemental Table 1 and results of primary analyses involving baseline RSA synchrony are shown in Supplemental Table 2. As shown below, the pattern and statistical significance of results was consistent to those obtained using number of biological children as a covariate.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Supplemental Table 1  *Model Predicting Maternal Depressive Symptoms and Child Behavior Problems from Within-dyad RSA Synchrony During Free Play Task* | | | | | | | | |
| Outcome | Predictors | Beta | | SE Beta | | *p* | | R2 |
| Child internalizing behavior problems (36-months) |  |  | |  | |  | | 0.071\*\*\* |
|  | 12-month problems | -0.074 | | 0.026 | | .004 | |  |
|  | 12-month depressive symptoms | -0.056 | | 0.029 | | .054 | |  |
|  | 24-week RSA synchrony | -0.057 | | 0.031 | | .162 | |  |
|  | 24-week depressive symptoms | 0.141 | | 0.053 | | .008 | |  |
|  | 24-week RSA synchrony x depressive symptoms | -0.195 | | 0.068 | | .004 | |  |
|  | 24-week maternal average RSA | 0.132 | | 0.011 | | <.001 | |  |
|  | 24-week infant average RSA | -0.093 | | 0.025 | | <.001 | |  |
|  | Country of birth | 0.088 | | 0.029 | | .003 | |  |
|  | Prenatal economic hardship | 0.111 | | 0.008 | | <.001 | |  |
|  | 6-week infant temperament | 0.140 | | 0.018 | | <.001 | |  |
|  | Parity | -0.007 | | 0.017 | | .673 | |  |
| Child externalizing behavior problems (36-months) |  |  | |  | |  | | 0.200\*\*\* |
|  | 12-month problems | 0.052 | | 0.030 | | .078 | |  |
|  | 12-month depressive symptoms | 0.186 | | 0.025 | | <.001 | |  |
|  | 24-week RSA synchrony | -0.050 | | 0.058 | | .391 | |  |
|  | 24-week depressive symptoms | -0.126 | | 0.050 | | .011 | |  |
|  | 24-week RSA synchrony x depressive symptoms | -0.097 | | 0.061 | | .113 | |  |
|  | 24-week maternal average RSA | 0.017 | | 0.012 | | .152 | |  |
|  | 24-week infant average RSA | 0.163 | | 0.027 | | <.001 | |  |
|  | Country of birth | -0.221 | | 0.018 | | <.001 | |  |
|  | 6-week infant temperament | 0.279 | | 0.015 | | <.001 | |  |
|  | Parity | -0.036 | | 0.014 | | .009 | |  |
| Maternal depressive symptoms (36-months) |  |  |  | |  | | 0.330\*\*\* | |
|  | 12-month problems | -0.011 | 0.030 | | .716 | |  | |
|  | 12-month depressive symptoms | 0.353 | 0.029 | | <.001 | |  | |
|  | 24-week RSA synchrony | 0.018 | 0.054 | | .744 | |  | |
|  | 24-week depressive symptoms | -0.059 | 0.055 | | .283 | |  | |
|  | 24-week RSA synchrony x depressive symptoms | -0.056 | 0.063 | | .371 | |  | |
|  | 24-week maternal average RSA | 0.047 | 0.010 | | <.001 | |  | |
|  | 24-week infant average RSA | 0.007 | 0.029 | | .807 | |  | |
|  | Country of birth | -0.052 | 0.016 | | .001 | |  | |
|  | Prenatal economic hardship | -0.028 | 0.009 | | .001 | |  | |
|  | 6-week infant temperament | 0.085 | | 0.015 | | <.001 | |  |
| Infant behavior problems (12-months) |  |  |  | |  | | 0.508\*\*\* | |
|  | 24-week RSA synchrony | -0.131 | 0.070 | | .059 | |  | |
|  | 24-week depressive symptoms | 0.389 | 0.025 | | <.001 | |  | |
|  | 24-week RSA synchrony x depressive symptoms | -0.349 | 0.057 | | <.001 | |  | |
|  | 24-week maternal average RSA | 0.006 | 0.020 | | 0.766 | |  | |
|  | 24-week infant average RSA | -0.392 | 0.031 | | <.001 | |  | |
|  | Country of birth | 0.193 | 0.035 | | <.001 | |  | |
|  | Parity | -0.060 | 0.016 | | <.001 | |  | |
|  | 6-week infant temperament | 0.254 | | 0.022 | | <.001 | |  |
| Maternal depressive symptoms (12-months) |  |  |  | |  | | 0.106\*\*\* | |
|  | 24-week RSA synchrony | -0.136 | 0.063 | | 0.031 | |  | |
|  | 24-week depressive symptoms | 0.640 | 0.027 | | <.001 | |  | |
|  | 24-week RSA synchrony x depressive symptoms | -0.229 | 0.061 | | <.001 | |  | |
|  | 24-week maternal average RSA | -0.024 | 0.015 | | .127 | |  | |
|  | 24-week infant average RSA | -0.066 | 0.026 | | .013 | |  | |
|  | Country of birth | 0.024 | 0.031 | | .443 | |  | |
|  | Child sex | -0.061 | 0.013 | | <.001 | |  | |
|  | Prenatal economic hardship | 0.214 | 0.015 | | <.001 | |  | |
|  | 6-week infant temperament | -0.151 | 0.020 | | <.001 | |  | |
|  | Parity | 0.167 | 0.019 | | <.001 | |  | |

*Note*. RSA = Respiratory Sinus Arrhythmia. \*\*\* *p* < .001.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Supplemental Table 2  *Model Predicting Maternal Depressive Symptoms and Child Behavior Problems from Within-dyad RSA Synchrony During Baseline Task* | | | | | | | | |
| Outcome | Predictors | Beta | | SE Beta | | *p* | | R2 |
| Child internalizing behavior problems (36-months) |  |  | |  | |  | |  |
|  | 12-month problems | 0.005 | | 0.013 | | .714 | |  |
|  | 12-month depressive symptoms | 0.144 | | 0.019 | | <.001 | |  |
|  | 24-week RSA synchrony | -0.103 | | 0.037 | | .006 | |  |
|  | 24-week depressive symptoms | -0.077 | | 0.017 | | <.001 | |  |
|  | 24-week RSA synchrony x depressive symptoms | 0.139 | | 0.038 | | <.001 | |  |
|  | 24-week maternal average RSA | 0.059 | | 0.013 | | <.001 | |  |
|  | 24-week infant average RSA | -0.026 | | 0.016 | | .098 | |  |
|  | Country of birth | -0.019 | | 0.010 | | .062 | |  |
|  | Prenatal economic hardship | 0.142 | | 0.006 | | <.001 | |  |
|  | 6-week infant temperament | 0.127 | | 0.013 | | <.001 | |  |
|  | Parity | -0.205 | | 0.009 | | <.001 | |  |
| Child externalizing behavior problems (36-months) |  |  | |  | |  | |  |
|  | 12-month problems | 0.018 | | 0.012 | | .125 | |  |
|  | 12-month depressive symptoms | 0.185 | | 0.016 | | <.001 | |  |
|  | 24-week RSA synchrony | -0.009 | | 0.037 | | .801 | |  |
|  | 24-week depressive symptoms | -0.063 | | 0.017 | | <.001 | |  |
|  | 24-week RSA synchrony x depressive symptoms | 0.108 | | 0.032 | | .001 | |  |
|  | 24-week maternal average RSA | -0.072 | | 0.008 | | <.001 | |  |
|  | 24-week infant average RSA | 0.211 | | 0.011 | | <.001 | |  |
|  | Country of birth | -0.222 | | 0.009 | | <.001 | |  |
|  | 6-week infant temperament | 0.174 | | 0.011 | | <.001 | |  |
|  | Parity | -0.142 | | 0.006 | | <.001 | |  |
| Maternal depressive symptoms (36-months) |  |  | |  | |  | |  |
|  | 12-month problems | -0.050 | | 0.013 | | <.001 | |  |
|  | 12-month depressive symptoms | 0.361 | | 0.015 | | <.001 | |  |
|  | 24-week RSA synchrony | 0.041 | | 0.033 | | .209 | |  |
|  | 24-week depressive symptoms | 0.044 | | 0.019 | | .018 | |  |
|  | 24-week RSA synchrony x depressive symptoms | 0.162 | | 0.032 | | <.001 | |  |
|  | 24-week maternal average RSA | -0.030 | | 0.010 | | .002 | |  |
|  | 24-week infant average RSA | -0.067 | | 0.011 | | <.001 | |  |
|  | Country of birth | -0.080 | | 0.012 | | <.001 | |  |
|  | Prenatal economic hardship | 0.107 | | 0.008 | | <.001 | |  |
|  | 6-week infant temperament | 0.061 | | 0.011 | | <.001 | |  |
| Infant behavior problems (12-months) |  |  | |  | |  | |  |
|  | 24-week RSA synchrony | -0.006 | | 0.040 | | .871 | |  |
|  | 24-week depressive symptoms | 0.308 | | 0.012 | | <.001 | |  |
|  | 24-week RSA synchrony x depressive symptoms | -0.085 | | 0.036 | | .017 | |  |
|  | 24-week maternal average RSA | 0.076 | | 0.011 | | <.001 | |  |
|  | 24-week infant average RSA | -0.162 | | 0.015 | | <.001 | |  |
|  | Country of birth | 0.236 | | 0.011 | | <.001 | |  |
|  | Parity | 0.075 | | 0.006 | | <.001 | |  |
|  | 6-week infant temperament | 0.235 | | 0.008 | | <.001 | |  |
| Maternal depressive symptoms (12-months) |  |  |  | |  | |  | |
|  | 24-week RSA synchrony | 0.060 | 0.037 | | .105 | |  | |
|  | 24-week depressive symptoms | 0.507 | 0.014 | | <.001 | |  | |
|  | 24-week RSA synchrony x depressive symptoms | 0.162 | 0.029 | | <.001 | |  | |
|  | 24-week maternal average RSA | 0.011 | 0.009 | | .186 | |  | |
|  | 24-week infant average RSA | -0.072 | 0.017 | | <.001 | |  | |
|  | Country of birth | 0.127 | 0.008 | | <.001 | |  | |
|  | Child sex | -0.040 | 0.006 | | <.001 | |  | |
|  | Parity | 0.103 | 0.005 | | <.001 | |  | |
|  | Prenatal economic hardship | 0.267 | 0.011 | | <.001 | |  | |
|  | 6-week infant temperament | 0.008 | | 0008 | | .312 | |  |

*Note*. RSA = Respiratory Sinus Arrhythmia. \*\*\* *p* < .001.