

Supplementary Online Content

Eskenazi BE, Fahey CA, Kogut K, et al. Association of perceived immigration policy vulnerability with mental and physical health among US-born Latino adolescents in California. *JAMA Pediatr*. Published online June 24, 2019. doi:10.1001/jamapediatrics.2019.1475

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This supplementary material has been provided by the authors to give readers additional information about their work.

| Items from Perceived Immigration Policy Effects Scale | Responses | | | | |
|---|----------------|-----------------|--------------------|----------------|-----------------|
| | Never N (%) | Rarely N (%) | Sometimes N (%) | Often N (%) | Always N (%) |
| Threat to Family Subscale | | | | | |
| Worry about the impact of immigration policies on your family | 126 (31.7) | 93 (23.4) | 89 (22.4) | 56 (14.1) | 33 (8.3) |
| Fear that you or a family member would be reported to immigration officials | 138 (34.8) | 95 (23.9) | 78 (19.6) | 44 (11.1) | 42 (10.6) |
| Worry about family separation due to deportation | 143 (36) | 77 (19.4) | 77 (19.4) | 43 (10.8) | 57 (14.4) |
| Children's Vulnerability Subscale | | | | | |
| Stressed about family members being deported or detained | 216 (54.4) | 86 (21.7) | 53 (13.4) | 23 (5.8) | 19 (4.8) |
| Felt unsafe due to immigration policies | 215 (54.2) | 70 (17.6) | 63 (15.9) | 30 (7.6) | 19 (4.8) |
| Emotionally upset due to immigration policies | 195 (49.1) | 66 (16.6) | 71 (17.9) | 35 (8.8) | 30 (7.6) |
| Feared authorities due to immigration policies | 233 (58.7) | 67 (16.9) | 56 (14.1) | 24 (6) | 17 (4.3) |
| Difficulties focusing in school due to immigration policies | 282 (71) | 55 (13.9) | 38 (9.6) | 17 (4.3) | 5 (1.3) |

eTable 1: Responses on the Threat to Family and Children's Vulnerability Subscale of the Perceived Immigration Policy Effects Scale (PIPES) among 16-year-old U.S.-born children of immigrants, CHAMACOS study (N=397)

eTable 2: Responses to the Pittsburgh Sleep Quality Index for 16-year-old youth with Low/Moderate vs. High Perceived Immigration Policy Effects Scale (PIPES) scores, CHAMACOS study

| | N (%) | Perceived Immigration Policy Effects (PIPES) | | p |
|---|------------|--|----------------------------|-------|
| | | Low/Moderate N (%) ^a | High N (%) ^b | |
| Overall Sleep Quality | | | | |
| Very good | 98 (24.6) | 82 (25.9) | 16 (19.5) | 0.01 |
| Fairly good | 235 (59) | 192 (60.8) | 43 (52.4) | |
| Fairly bad | 65 (16.3) | 42 (13.3) | 23 (28) | |
| Sleep Latency | | | | |
| Falls asleep quickly/no trouble | 190 (47.6) | 162 (51.1) | 28 (34.1) | 0.02 |
| Takes some time/has some trouble falling asleep | 124 (31.1) | 93 (29.3) | 31 (37.8) | |
| Takes a long time/has some trouble falling asleep | 85 (21.3) | 62 (19.6) | 23 (28) | |
| Duration of Sleep | | | | |
| ≥7 hours | 307 (77.3) | 245 (77.5) | 62 (76.5) | 0.94 |
| 6-7 hours | 64 (16.1) | 51 (16.1) | 13 (16) | |
| <6 hours | 26 (6.5) | 20 (6.3) | 6 (7.4) | |
| Sleep Efficiency | | | | |
| ≥85% | 385 (97) | 304 (96.2) | 81 (100) | 0.08 |
| <85% | 12 (3) | 12 (3.8) | 0 (0) | |
| Sleep Disturbance | | | | |
| Minimal disturbance | 66 (17) | 55 (17.7) | 11 (13.9) | 0.001 |
| Some disturbance | 281 (72.2) | 231 (74.5) | 50 (63.3) | |
| Much disturbance | 42 (10.8) | 24 (7.7) | 18 (22.8) | |
| Need Medication to Sleep | | | | |
| Not during the past month | 346 (86.9) | 279 (88.3) | 67 (81.7) | 0.12 |
| At least once during the past month | 52 (13.1) | 37 (11.7) | 15 (18.3) | |
| Day Dysfunction due to Sleepiness | | | | |
| Not during the past month | 231 (58) | 196 (62) | 35 (42.7) | 0.01 |
| Less than once a week | 124 (31.2) | 91 (28.8) | 33 (40.2) | |
| Once a week or more | 43 (10.8) | 29 (9.2) | 14 (17.1) | |

^a PIPES score of 8-23, corresponding to an average of less than "sometimes" for all eight questions (N=315).

^b PIPES score of 24-40, corresponding to an average of "sometimes" or more for all eight questions (N=82).

eTable 3: Pearson correlations between health outcomes for 16-year-old youth, CHAMACOS study

| | | | | | Anxiety | | Depression | | PSQI Score | Subjective Health |
|---------------------------|----------|-----------|--------|--------|-------------|---------------|-------------|---------------|------------|-------------------|
| | Systolic | Diastolic | MAP | BMI | Self Report | Parent Report | Self Report | Parent Report | | |
| Systolic Blood Pressure | 1.00 | | | | | | | | | |
| Diastolic Blood Pressure | 0.86** | 1.00 | | | | | | | | |
| Mean Arterial Pressure | 0.86** | 0.60** | 1.00 | | | | | | | |
| BMI | 0.42** | 0.47** | 0.22** | 1.00 | | | | | | |
| Anxiety: Self Report | 0.00 | -0.02 | 0.01 | -0.10 | 1.00 | | | | | |
| Anxiety: Parent Report | 0.13* | 0.11* | 0.11* | 0.03 | 0.17** | 1.00 | | | | |
| Depression: Self Report | 0.02 | 0.02 | 0.02 | -0.02 | 0.62** | 0.17** | 1.00 | | | |
| Depression: Parent Report | 0.02 | 0.02 | -0.01 | 0.12* | 0.12* | 0.51** | 0.27** | 1.00 | | |
| PSQI Score | -0.15* | -0.18* | -0.10 | -0.09 | 0.36** | 0.11* | 0.35** | 0.16** | 1.00 | |
| Subjective Health | 0.13* | 0.13* | 0.10 | 0.18** | -0.07 | 0.15** | 0.02 | 0.22** | -0.01 | 1.00 |

*p<0.05

**p<0.01

eTable 4: Associations of binary health outcomes with categorical Perceived Immigration Policy Effects Scale (PIPES) among 16-year-old US-born children of immigrants, CHAMACOS study

| | N | PIPES Total IRR (95% CI) | Threat to Family IRR (95% CI) | Children's Vulnerability IRR (95% CI) |
|--|-----|-----------------------------|----------------------------------|--|
| Blood Pressure | | | | |
| Hypertension ^a | 350 | 0.81 (0.26, 2.52) | 1.10 (0.43, 2.83) | 0.64 (0.18, 2.27) |
| Body Composition | | | | |
| BMI: Overweight or Obese ^b | 390 | 1.01 (0.72, 1.43) | 1.09 (0.82, 1.46) | 0.93 (0.64, 1.36) |
| Anxiety | | | | |
| Self Report: Clinically Significant/At-Risk ^c | 385 | 1.62 (1.00, 2.63) | 1.23 (0.78, 1.93) | 1.50 (0.90, 2.48) |
| Parent Report: Clinically Significant/At-Risk ^c | 390 | 1.64 (0.94, 2.86) | 1.24 (0.73, 2.09) | 1.72 (0.97, 3.04) |
| Depression | | | | |
| Self Report: Clinically Significant/At-Risk ^c | 385 | 1.55 (0.86, 2.79) | 1.24 (0.72, 2.14) | 1.61 (0.88, 2.93) |
| Parent Report: Clinically Significant/At-Risk ^c | 390 | 1.08 (0.59, 1.98) | 1.13 (0.66, 1.92) | 0.95 (0.50, 1.83) |
| Sleep Quality | | | | |
| PSQI: Poor sleep quality ^d | 385 | 1.54 (1.03, 2.33) | 1.28 (0.88, 1.87) | 1.53 (1.00, 2.35) |
| Subjective Health | | | | |
| Low parent-rated health ^e | 384 | 0.91 (0.62, 1.35) | 0.95 (0.68, 1.33) | 0.90 (0.60, 1.37) |

IRR, Incidence Rate Ratio; CI, Confidence Interval; BMI, Body-mass index; PSQI, Pittsburgh Sleep Quality Index.

Estimates from generalized linear models with the Poisson distribution and log link, providing the incidence rate ratio for an increase from low/moderate to high PIPES category. Adjusted for maternal education, maternal marital status, maternal depression, mother's years in US, household income, and youth's sex.

a. Systolic blood pressure \geq 95th percentile for sex, age, and height (Stage 1 to Stage 2 hypertension).

b. Body mass index (BMI) $>$ 85th percentile for sex and age.

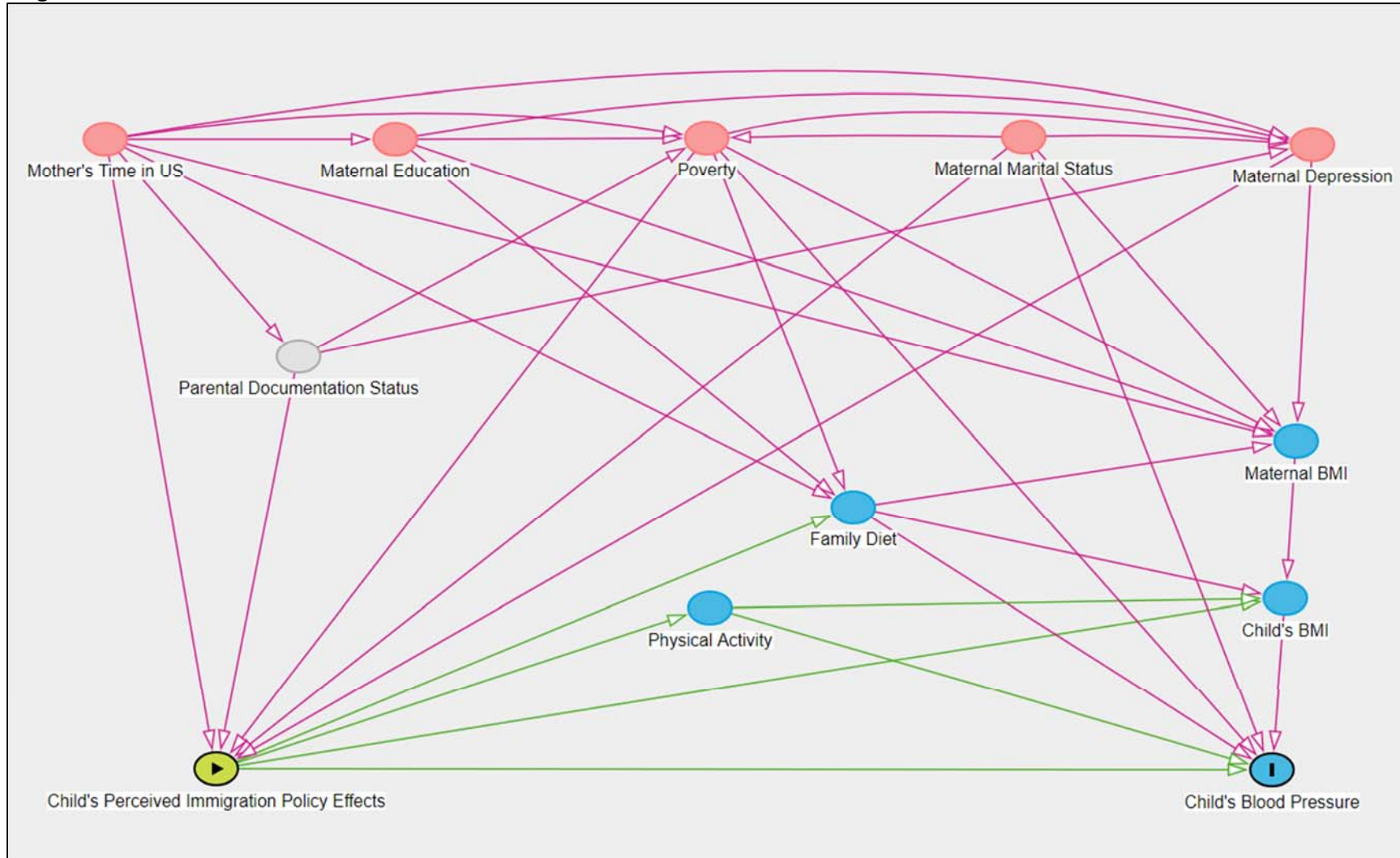
c. Behavior Assessment for Children (BASC)-2 t-score $>$ 60 (sex-specific standards).

d. Pittsburgh Sleep Quality Index (PSQI) score \geq 5.

e. Parent reported child's general health to be poor, fair, or good (as opposed to very good or excellent).

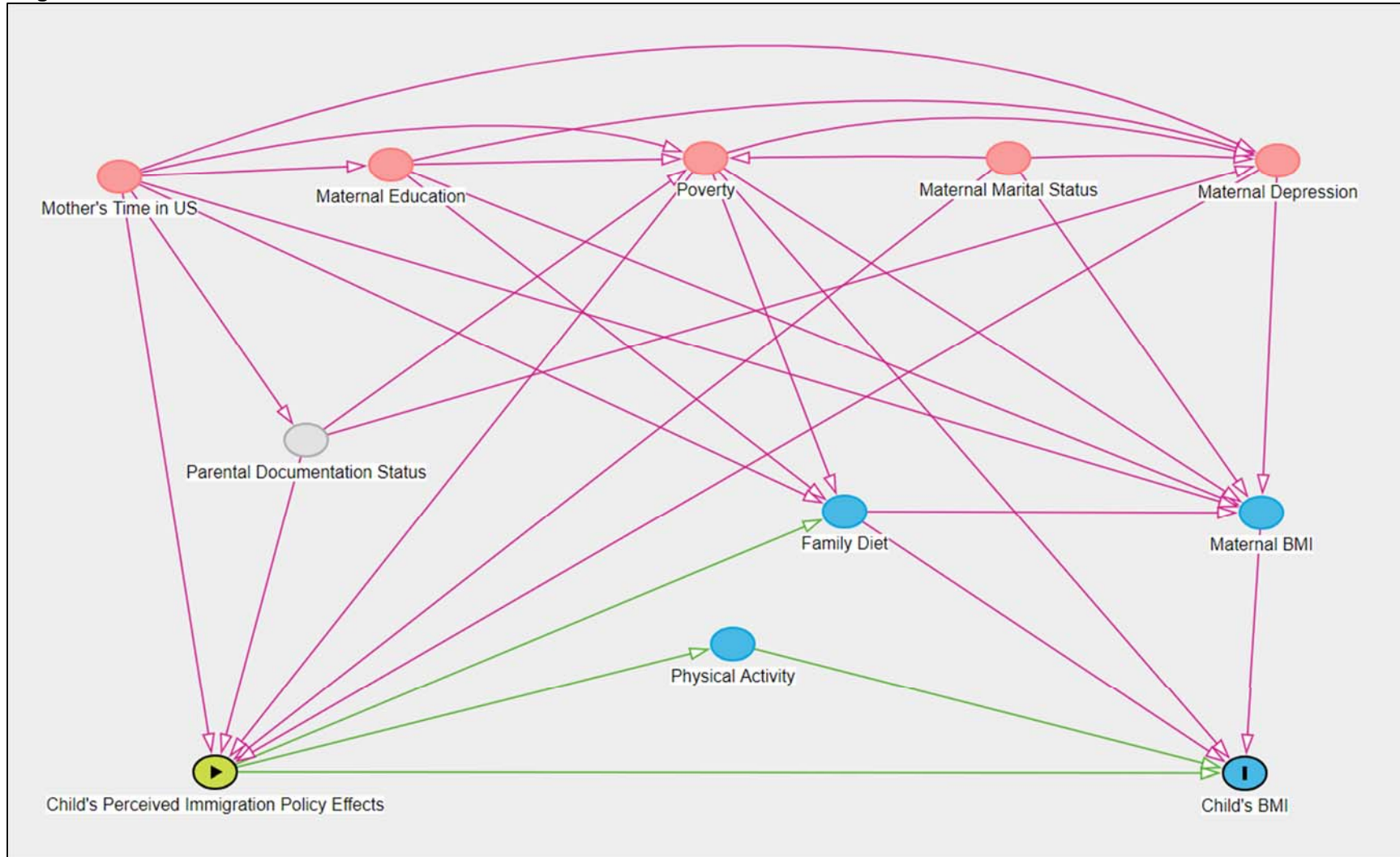
eFigure 1: DAGs for Child's Perceived Immigration Policy Effects and (a) Blood Pressure, (b) BMI, and (c) Mental Health (DAGitty v3.0)

eFigure 1a: Blood Pressure



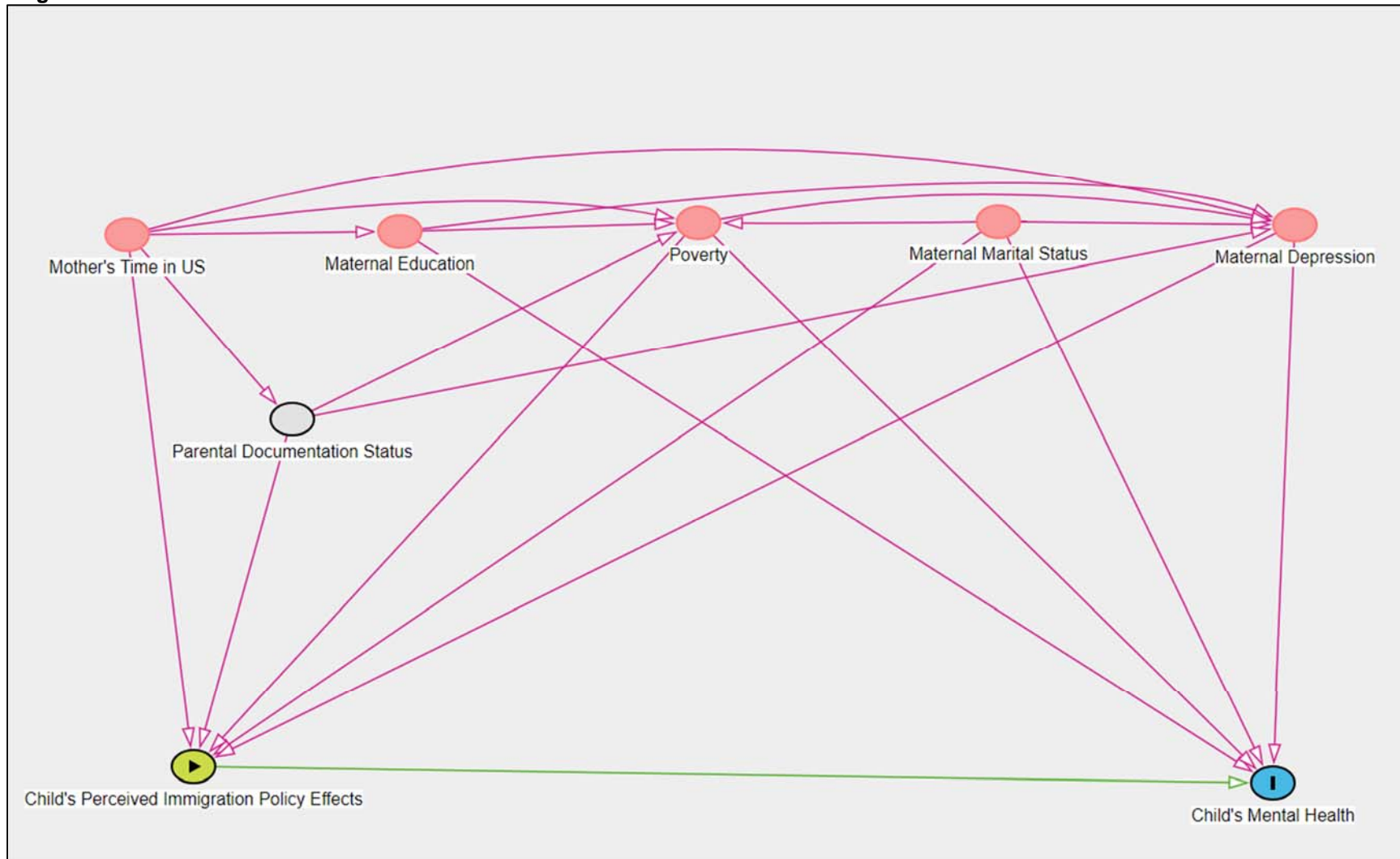
eFigure 1 (continued): DAGs for Child's Perceived Immigration Policy Effects and (a) Blood Pressure, (b) BMI, and (c) Mental Health (DAGitty v3.0)

eFigure 1b: BMI



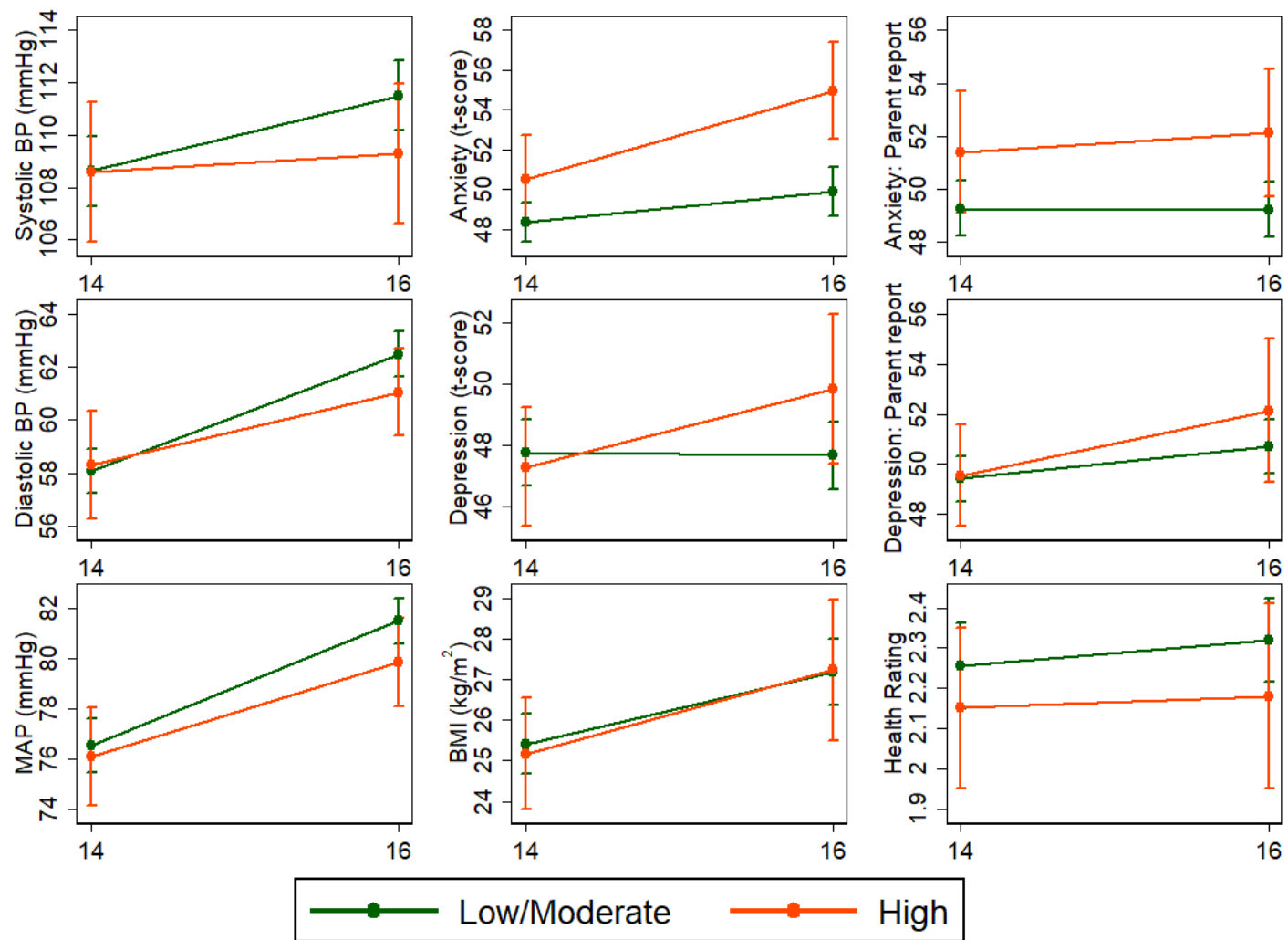
eFigure 1 (continued): DAGs for Child's Perceived Immigration Policy Effects and (a) Blood Pressure, (b) BMI, and (c) Mental Health (DAGitty v3.0)

eFigure 1c: Mental Health



eFigure 2: Adjusted predictive margins at 14 and 16 years by categorical Perceived Immigration Policy Effects Scale (PIPES) among (a) all 16-year-old US-born children of immigrants and (b) stratified by maternal time in US at delivery, CHAMACOS study.

eFigure 2a: All children



eFigure 2 (continued): Adjusted predictive margins at 14 and 16 years by categorical Perceived Immigration Policy Effects Scale (PIPES) among (a) all 16-year-old US-born children of immigrants and (b) stratified by maternal time in US at delivery, CHAMACOS study.

eFigure 2a: Stratified by maternal time in US at delivery

