Table 1. Descriptive Statistics: Ethiopia, India, Peru, Vietnam

|  | Ethiopia | | | | | India | | | | | Peru | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Mean/ Percent | SD | Min | Max | n | Mean/ Percent | SD | Min | Max | n | Mean/ Percent | SD | Min | Max | n |
| *Outcomes* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Birthweight | 3147 | 672 | 2000 | 4000 | 19 | 2764 | 521 | 1000 | 4000 | 123 | 3143 | 482 | 1670 | 4200 | 89 |
| BWZ | -0.42 | 1.46 | -3.10 | 1.57 | 19 | -1.21 | 1.20 | -4.70 | 1.26 | 122 | -0.36 | 1.08 | -4.12 | 1.62 | 89 |
| cWAZ | 0.00 | 1.48 | -2.62 | 2.65 | 17 | 0.03 | 1.42 | -4.99 | 4.73 | 118 | 0.00 | 1.36 | -3.44 | 3.51 | 79 |
| HAZ (2013) | -0.54 | 2.35 | -4.27 | 2.98 | 12 | -1.52 | 1.98 | -5.00 | 4.43 | 106 | -0.88 | 2.09 | -4.66 | 4.54 | 76 |
| Weight, kg (2013) | 7.3 | 3.0 | 2 | 13 | 18 | 8.8 | 3.0 | 3.0 | 16.3 | 122 | 10.2 | 3.9 | 3.5 | 27.1 | 80 |
| Height, cm (2013) | 66.8 | 12.7 | 50 | 96 | 17 | 72.8 | 17.3 | 11.0 | 128.5 | 122 | 74.0 | 14.2 | 49.9 | 115.1 | 79 |
| Stunted in 2013 | 25.0 |  | 0 | 1 | 12 | 45.3 |  | 0 | 1 | 106 | 25.0 |  | 0 | 1 | 76 |
| *Maternal childhood growth* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HAZ (age 8) | -1.30 | 1.29 | -3.12 | 1.17 | 19 | -1.19 | 1.00 | -3.61 | 1.58 | 123 | -1.40 | 0.92 | -2.97 | 0.65 | 87 |
| Height, cm (age 8) | 119.0 | 7.3 | 108 | 131.3 | 19 | 120.2 | 6.3 | 103.7 | 136.9 | 123 | 118.6 | 5.5 | 108.5 | 133.2 | 87 |
| Conditional HAZ, 8-12 | 0.19 | 1.01 | -0.86 | 3.21 | 19 | 0.07 | 2.02 | -15.16 | 1.72 | 119 | 0.00 | 0.62 | -1.69 | 2.16 | 86 |
| Conditional HAZ, 12-15 | 0.09 | 0.59 | -1.23 | 1.17 | 19 | 0.01 | 0.91 | -3.01 | 2.37 | 116 | 0.01 | 0.53 | -1.20 | 1.39 | 87 |
| Conditional HAZ, 8-15 | 0.18 | 0.73 | -1.07 | 1.96 | 19 | 0.02 | 0.84 | -2.45 | 2.18 | 120 | 0.00 | 0.55 | -1.50 | 1.22 | 85 |
| Change in HAZ, 8-12 | 0.59 | 1.34 | -1.23 | 4.55 | 19 | -0.34 | 2.04 | -15.60 | 1.60 | 119 | -0.16 | 0.63 | -1.69 | 1.97 | 86 |
| Change in HAZ, 12-15 | 0.37 | 0.88 | -1.36 | 1.79 | 19 | -0.12 | 2.20 | -1.99 | 16.25 | 116 | -0.04 | 0.68 | -1.67 | 2.09 | 87 |
| Change in HAZ, 8-15 | 0.96 | 1.44 | -1.64 | 4.31 | 19 | -0.45 | 1.04 | -3.45 | 1.83 | 120 | -0.20 | 0.66 | -2.35 | 1.05 | 85 |
| Change in height (cm) 8-12 | 28.2 | 8.8 | 14.7 | 54 | 19 | 24.5 | 4.3 | 11.6 | 33.15 | 119 | 23.8 | 5.1 | 11.3 | 39.4 | 86 |
| Change in height (cm) 12-15 | 13.0 | 6.9 | 2 | 30 | 19 | 6.2 | 5.6 | -2.4 | 22.8 | 116 | 9.1 | 6.4 | -2.9 | 23.55 | 87 |
| Change in height (cm) 8-15 | 41.2 | 8.4 | 26.8 | 62 | 19 | 30.8 | 6.9 | 12.1 | 48.4 | 120 | 33.0 | 5.0 | 17.9 | 45.7 | 85 |
| BMIZ (age 8) | -1.98 | 2.17 | -7.66 | 1.17 | 19 | -1.24 | 0.94 | -4.15 | 0.97 | 123 | 0.50 | 0.65 | -1.49 | 2.13 | 87 |
| BMI (age 8) | 13.3 | 2.4 | 8.1 | 18.1 | 19 | 14.0 | 1.3 | 10.7 | 17.5 | 123 | 16.7 | 1.3 | 13.4 | 20.9 | 87 |
| Conditional BMI, 8-12 | 0.34 | 0.97 | -1.23 | 2.10 | 19 | -0.05 | 0.92 | -2.07 | 2.33 | 119 | 0.00 | 0.87 | -3.19 | 2.48 | 86 |
| Conditional BMI, 12-15 | 0.12 | 0.76 | -1.13 | 1.65 | 19 | 0.01 | 0.82 | -2.01 | 1.85 | 116 | 0.02 | 0.60 | -1.75 | 1.71 | 87 |
| Conditional BMI, 8-15 | 0.35 | 0.97 | -1.75 | 1.77 | 19 | -0.03 | 0.86 | -1.90 | 2.05 | 120 | 0.02 | 0.77 | -1.88 | 1.71 | 85 |
| Change in BMIZ, 8-12 | 0.87 | 2.42 | -2.10 | 8.30 | 19 | 0.27 | 0.91 | -1.54 | 2.90 | 119 | -0.16 | 0.91 | -3.04 | 2.88 | 86 |
| Change in BMIZ, 12-15 | 0.30 | 0.86 | -1.04 | 2.10 | 19 | 0.14 | 0.91 | -2.01 | 2.52 | 116 | 0.21 | 0.71 | -1.61 | 2.68 | 87 |
| Change in BMIZ, 8-15 | 1.18 | 2.33 | -1.33 | 7.61 | 19 | 0.45 | 0.89 | -1.50 | 2.91 | 120 | 0.06 | 0.86 | -2.29 | 2.65 | 85 |
| Change in BMI, 8-12 | 2.8 | 2.9 | -2.0 | 10.9 | 19 | 2.7 | 2.0 | -0.1 | 8.9 | 119 | 2.8 | 2.4 | -2.2 | 10.2 | 86 |
| Change in BMI, 12-15 | 2.4 | 2.0 | -0.4 | 6.8 | 19 | 1.9 | 2.0 | -2.4 | 7.8 | 116 | 2.7 | 2.1 | -2.0 | 9.7 | 87 |
| Change in BMI, 8-15 | 5.2 | 2.8 | 1.4 | 11.2 | 19 | 4.7 | 2.5 | 0.9 | 15.2 | 120 | 5.5 | 2.8 | -0.2 | 12.3 | 85 |
| *Covariates* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| BW Documented | 10.5 |  | 0 | 1 | 19 | 53.7 |  | 0 | 1 | 123 | 66.3 |  | 0 | 1 | 89 |
| Offspring is a girl | 47.4 |  | 0 | 1 | 19 | 48.0 |  | 0 | 1 | 123 | 56.2 |  | 0 | 1 | 89 |
| Offspring age (months) | 11.6 | 10.7 | 0.0 | 34.0 | 18 | 18.3 | 16.4 | 0.0 | 78.0 | 123 | 16.7 | 13.0 | 0.0 | 52.0 | 89 |
| Offspring is firstborn | 100.0 |  | 1 | 1 | 19 | 62.6 |  | 0 | 1 | 123 | 77.5 |  | 0 | 1 | 89 |
| Good self-rated prenatal health | 73.7 |  | 0 | 1 | 19 | 64.2 |  | 0 | 1 | 123 | 53.9 |  | 0 | 1 | 76 |
| Maternal prenatal care received | 94.7 |  | 0 | 1 | 19 | 100.0 |  | 1 | 1 | 123 | 90.8 |  | 0 | 1 | 76 |
| Mother ate grain, roots tubers, age 15 | 100.0 |  | 1 | 1 | 19 | 99.2 |  | 0 | 1 | 120 | 98.8 |  | 0 | 1 | 86 |
| Mother ate fruits & vegetables, age 15 | 89.5 |  | 0 | 1 | 19 | 97.5 |  | 0 | 1 | 120 | 89.5 |  | 0 | 1 | 86 |
| Mother ate meat and fish, age 15 | 52.6 |  | 0 | 1 | 19 | 19.2 |  | 0 | 1 | 120 | 81.4 |  | 0 | 1 | 86 |
| Mother ate eggs, age 15 | 10.5 |  | 0 | 1 | 19 | 16.7 |  | 0 | 1 | 120 | 46.5 |  | 0 | 1 | 86 |
| Mother ate legumes, age 15 | 57.9 |  | 0 | 1 | 19 | 27.5 |  | 0 | 1 | 120 | 48.8 |  | 0 | 1 | 86 |
| Mother ate dairy, age 15 | 21.1 |  | 0 | 1 | 19 | 67.5 |  | 0 | 1 | 120 | 65.1 |  | 0 | 1 | 86 |
| Maternal age at offspring birth (years) | 18.2 | 0.9 | 16.4 | 19.3 | 18 | 17.5 | 1.5 | 12.9 | 19.3 | 120 | 17.6 | 1.1 | 14.8 | 19.8 | 88 |
| Mother early menarche | 5.3 |  | 0 | 1 | 19 | 42.6 |  | 0 | 1 | 122 | 46.6 |  | 0 | 1 | 88 |
| Mother firstborn | 15.8 |  | 0 | 1 | 19 | 28.5 |  | 0 | 1 | 123 | 28.1 |  | 0 | 1 | 89 |
| Mother pregnant, age 15 | 0.0 |  | 0 | 0 | 19 | 2.4 |  | 0 | 1 | 123 | 2.2 |  | 0 | 1 | 89 |
| Mother enrolled in school, age 15 | 57.9 |  | 0 | 1 | 19 | 32.8 |  | 0 | 1 | 122 | 83.7 |  | 0 | 1 | 86 |
| Age of grandmother at round 2 (years) | 38.2 | 8.4 | 28.0 | 55.0 | 17 | 30.5 | 5.9 | 20.0 | 50.0 | 118 | 34.3 | 6.6 | 23.0 | 49.0 | 86 |
| Grandmaternal HAZ | -0.39 | 0.94 | -1.86 | 1.51 | 17 | -1.93 | 0.98 | -4.15 | 0.82 | 110 | -2.04 | 0.93 | -3.92 | -0.12 | 80 |
| Grandmaternal BMIZ | -0.69 | 1.12 | -2.66 | 1.6 | 17 | -0.55 | 1.24 | -3.57 | 2.81 | 110 | 1.46 | 0.93 | -0.45 | 3.31 | 80 |
| Grandmaternal schooling (years) | 1.8 | 2.3 | 0.0 | 7.0 | 19 | 1.1 | 2.1 | 0.0 | 8.0 | 122 | 6.2 | 4.5 | 0.0 | 16.0 | 87 |
| Wealth index (maternal age 15) | 34.3 | 15.5 | 4.1 | 67.1 | 19 | 48.1 | 15.3 | 9.3 | 80.1 | 121 | 54.9 | 19.5 | 8.7 | 90.6 | 87 |
| Urban (maternal age 15) | 26.3 |  | 0 | 1 | 19 | 14.0 |  | 0 | 1 | 121 | 68.5 |  | 0 | 1 | 89 |

Table 1. Descriptive Statistics: Ethiopia, India, Peru, and Vietnam

|  | Vietnam | | | | | Total | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Mean/ Percent | SD | Min | Max | n | Mean/ Percent | SD | Min | Max | n |
| *Outcomes* |  |  |  |  |  |  |  |  |  |  |
| Birthweight | 2946 | 508 | 1300 | 4500 | 52 | 2942 | 543 | 1000 | 4500 | 283 |
| BWZ | -0.72 | 1.01 | -3.39 | 2.14 | 51 | -0.80 | 1.21 | -4.70 | 2.14 | 281 |
| cWAZ | 0.00 | 1.31 | -2.37 | 4.18 | 37 | 0.01 | 1.38 | -4.99 | 4.73 | 251 |
| HAZ (2013) | -0.98 | 2.04 | -4.03 | 3.21 | 31 | -1.18 | 2.06 | -5.00 | 4.54 | 225 |
| Weight, kg (2013) | 10.0 | 2.4 | 3.8 | 17 | 39 | 9.3 | 3.3 | 2.0 | 27.1 | 259 |
| Height, cm (2013) | 76.2 | 11.0 | 42.1 | 96.5 | 38 | 73.3 | 15.4 | 11.0 | 128.5 | 256 |
| Stunted in 2013 | 38.7 |  | 0 | 1 | 31 | 36.4 |  | 0 | 1 | 225 |
| *Maternal childhood growth* |  |  |  |  |  |  |  |  |  |  |
| VHAZ (age 8) | -1.71 | 1.05 | -4.45 | 0.60 | 52 | -1.36 | 1.02 | -4.45 | 1.58 | 281 |
| Height, cm (age 8) | 117.0 | 6.0 | 102.8 | 129.4 | 52 | 119.0 | 6.1 | 102.8 | 136.9 | 281 |
| Conditional HAZ, 8-12 | 0.05 | 0.53 | -0.97 | 1.60 | 52 | 0.05 | 1.41 | -15.16 | 3.21 | 276 |
| Conditional HAZ, 12-15 | -0.04 | 0.46 | -1.09 | 1.02 | 52 | 0.01 | 0.71 | -3.01 | 2.37 | 274 |
| Conditional HAZ, 8-15 | -0.02 | 0.45 | -1.10 | 1.03 | 52 | 0.02 | 0.69 | -2.45 | 2.18 | 276 |
| Change in HAZ, 8-12 | -0.03 | 0.53 | -1.01 | 1.58 | 52 | -0.16 | 1.46 | -15.60 | 4.55 | 276 |
| Change in HAZ, 12-15 | 0.11 | 0.72 | -1.16 | 1.32 | 52 | -0.02 | 1.53 | -1.99 | 16.25 | 274 |
| Change in HAZ, 8-15 | 0.08 | 0.61 | -1.87 | 1.60 | 52 | -0.18 | 0.97 | -3.45 | 4.31 | 276 |
| Change in height (cm) 8-12 | 23.9 | 3.9 | 15.5 | 34.8 | 52 | 24.4 | 5.0 | 11.3 | 54 | 276 |
| Change in height (cm) 12-15 | 9.7 | 4.9 | 1.1 | 18.5 | 52 | 8.3 | 6.1 | -2.9 | 30 | 274 |
| Change in height (cm) 8-15 | 33.6 | 3.6 | 23.5 | 42 | 52 | 32.7 | 6.5 | 12.1 | 62 | 276 |
| BMIZ (age 8) | -0.93 | 0.91 | -2.97 | 0.77 | 52 | -0.70 | 1.29 | -7.66 | 2.13 | 281 |
| BMI (age 8) | 14.4 | 1.3 | 11.9 | 17.3 | 52 | 14.9 | 1.9 | 8.1 | 20.9 | 281 |
| Conditional BMI, 8-12 | 0.05 | 0.62 | -1.82 | 1.36 | 52 | 0.01 | 0.86 | -3.19 | 2.48 | 276 |
| Conditional BMI, 12-15 | 0.06 | 0.50 | -1.15 | 1.05 | 52 | 0.03 | 0.69 | -2.01 | 1.85 | 274 |
| Conditional BMI, 8-15 | 0.10 | 0.63 | -1.65 | 1.17 | 52 | 0.03 | 0.81 | -1.90 | 2.05 | 276 |
| Change in BMIZ, 8-12 | 0.29 | 0.66 | -2.17 | 1.69 | 52 | 0.18 | 1.07 | -3.04 | 8.30 | 276 |
| Change in BMIZ, 12-15 | 0.38 | 0.65 | -1.15 | 1.87 | 52 | 0.22 | 0.80 | -2.01 | 2.68 | 274 |
| Change in BMIZ, 8-15 | 0.66 | 0.83 | -1.33 | 2.20 | 52 | 0.42 | 1.07 | -2.29 | 7.61 | 276 |
| Change in BMI, 8-12 | 2.7 | 1.4 | -1.8 | 6.3 | 52 | 2.7 | 2.1 | -2.2 | 10.9 | 276 |
| Change in BMI, 12-15 | 2.7 | 1.5 | -0.8 | 5.6 | 52 | 2.4 | 2.0 | -2.4 | 9.7 | 274 |
| Change in BMI, 8-15 | 5.4 | 1.7 | 1.5 | 8.6 | 52 | 5.1 | 2.5 | -0.2 | 15.2 | 276 |
| *Covariates* |  |  |  |  |  |  |  |  |  |  |
| BW Documented | 59.6 |  | 0 | 1 | 52 | 55.8 |  | 0 | 1 | 283 |
| Offspring is a girl | 51.9 |  | 0 | 1 | 52 | 51.2 |  | 0 | 1 | 283 |
| Offspring age (months) | 17.1 | 12.6 | 1.0 | 53.0 | 51 | 17.1 | 14.4 | 0.0 | 78.0 | 281 |
| Offspring is firstborn | 84.6 |  | 0 | 1 | 52 | 73.9 |  | 0 | 1 | 283 |
| Maternal prenatal health good | 30.8 |  | 0 | 1 | 52 | 55.6 |  | 0 | 1 | 270 |
| Maternal prenatal care received | 92.3 |  | 0 | 1 | 52 | 95.6 |  | 0 | 1 | 270 |
| Mother ate grain, roots or tubers, age 15 | 100.0 |  | 1 | 1 | 52 | 99.3 |  | 0 | 1 | 277 |
| Mother ate fruits and vegetables, age 15 | 98.1 |  | 0 | 1 | 52 | 94.6 |  | 0 | 1 | 277 |
| Mother ate meat and fish, age 15 | 90.4 |  | 0 | 1 | 52 | 54.2 |  | 0 | 1 | 277 |
| Mother ate eggs, age 15 | 40.4 |  | 0 | 1 | 52 | 30.0 |  | 0 | 1 | 277 |
| Mother ate legumes, age 15 | 30.8 |  | 0 | 1 | 52 | 36.8 |  | 0 | 1 | 277 |
| Mother ate dairy, age 15 | 9.6 |  | 0 | 1 | 52 | 52.7 |  | 0 | 1 | 277 |
| Maternal age at offspring birth (years) | 17.9 | 1.1 | 14.9 | 19.5 | 51 | 17.7 | 1.3 | 12.9 | 19.8 | 277 |
| Mother early menarche (before age 12) | 23.1 |  | 0 | 1 | 52 | 37.7 |  | 0 | 1 | 281 |
| Mother firstborn | 42.3 |  | 0 | 1 | 52 | 30.0 |  | 0 | 1 | 283 |
| Mother pregnant, age 15 | 0.0 |  | 0 | 0 | 52 | 1.8 |  | 0 | 1 | 283 |
| Mother enrolled in school, age 15 | 35.4 |  | 0 | 1 | 48 | 50.9 |  | 0 | 1 | 275 |
| Age of grandmother in R2 | 33.5 | 7.3 | 22.0 | 54.0 | 51 | 32.8 | 6.9 | 20.0 | 55.0 | 272 |
| Grandmaternal HAZ | -1.85 | 0.9 | -4.17 | 0.6 | 52 | -1.84 | 1.02 | -4.17 | 1.51 | 259 |
| Grandmaternal BMIZ | 0.03 | 0.71 | -1.72 | 1.82 | 52 | 0.18 | 1.37 | -3.57 | 3.31 | 259 |
| Grandmaternal completed grades schooling | 4.0 | 3.9 | 0.0 | 12.0 | 51 | 3.3 | 4.0 | 0.0 | 16.0 | 279 |
| Wealth index (maternal age 15) | 49.9 | 20.3 | 9.7 | 89.8 | 44 | 49.6 | 18.2 | 4.1 | 90.6 | 271 |
| Urban (maternal age 15) | 7.7 |  | 0 | 1 | 52 | 31.0 |  | 0 | 1 | 281 |

Table 2. OLS Regressions of Offspring Birthweight and BWZ on Maternal Childhood and Early-Pubertal Growth

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | I. Two Growth Periods, Unadjusted | II. Two Growth Periods, Adjusteda | III. One Growth Period, Unadjusted | IV. One Growth Period, Adjusteda |
|  | Birthweight (g) | Birthweight (g) | Birthweight (g) | Birthweight (g) |
|  | Coef [95% CI] | Coef [95% CI] | Coef [95% CI] | Coef [95% CI] |
| Maternal HAZ8 | -23 [-87 - 41] | -44 [-119 - 32] | -24 [-83 - 35] | -43 [-113 - 27] |
| Conditional HAZ growth 8-12 | 34 [-9 - 77] | 43 [-9 - 96] |  |  |
| Conditional HAZ growth 12-15 | 101\*\* [14 - 188] | 127\*\* [30 - 224] |  |  |
| Conditional HAZ growth 8-15 |  |  | 107\*\* [21 - 193] | 130\*\*\* [31 - 228] |
| Maternal BMIZ8 | 57\* [-5 - 119] | 65\*\* [0 - 129] | 68\*\* [8 - 128] | 79\*\* [16 - 143] |
| Conditional BMIZ growth 8-12 | 17 [-59 - 93] | 25 [-54 - 103] |  |  |
| Conditional BMIZ growth 12-15 | 61 [-28 - 151] | 84\* [-10 - 179] |  |  |
| Conditional BMIZ growth 8-15 |  |  | 37 [-38 - 111] | 56 [-23 - 135] |
| Infant is female | -173\*\*\* [-292 - -53] | -142\*\* [-265 - -20] | -188\*\*\* [-306 - -69] | -158\*\* [-280 - -36] |
| Maternal prenatal health good |  | 141\*\* [11 - 271] |  | 121\* [-10 - 252] |
| Prenatal care during pregnancy |  | 342\*\* [43 - 640] |  | 351\*\* [53 - 648] |
| Mother enrolled school at age 15 y |  | 169\*\* [1 - 336] |  | 139\* [-24 - 302] |
| Grandmother's completed grades of schooling |  | 22\*\* [1 - 44] |  | 22\*\* [0 - 43] |
| Ethiopia | 400\*\*\* [148 - 652] | 281\* [-41 - 603] | 398\*\*\* [150 - 646] | 303\* [-12 - 618] |
| Peru | 295\*\*\* [120 - 471] | 119 [-150 - 387] | 270\*\*\* [96 - 445] | 154 [-115 - 422] |
| Vietnam | 163\* [-6 - 332] | 148 [-100 - 396] | 153\* [-14 - 320] | 162 [-84 - 408] |
| Median Rsquared (over 15 imputations) | 0.170 | 0.278 | 0.171 | 0.264 |
| Observations | 283 | 283 | 276 | 276 |
|  | V. Two Growth Periods, Unadjusted | VI. Two Growth Periods, Adjusteda | VII. One Growth Period, Unadjusted | VIII. One Growth Period, Adjusteda |
|  | BWZ | BWZ | BWZ | BWZ |
| Maternal HAZ8 | -0.05 [-0.19 - 0.10] | -0.1 [-0.27 - 0.07] | -0.04 [-0.17 - 0.10] | -0.09 [-0.25 - 0.07] |
| Conditional HAZ growth 8-12 | 0.09\* [-0.01 - 0.18] | 0.10\* [-0.02 - 0.22] |  |  |
| Conditional HAZ growth 12-15 | 0.26\*\* [0.06 - 0.45] | 0.30\*\*\* [0.08 - 0.52] |  |  |
| Conditional HAZ growth 8-15 |  |  | 0.27\*\*\* [0.08 - 0.46] | 0.31\*\*\* [0.09 - 0.53] |
| Maternal BMIZ8 | 0.17\*\* [0.03 - 0.31] | 0.19\*\*\* [0.05 - 0.34] | 0.19\*\*\* [0.06 - 0.33] | 0.22\*\*\* [0.08 - 0.36] |
| Conditional BMIZ growth 8-12 | 0.05 [-0.12 - 0.22] | 0.06 [-0.12 - 0.24] |  |  |
| Conditional BMIZ growth 12-15 | 0.05 [-0.16 - 0.25] | 0.08 [-0.14 - 0.30] |  |  |
| Conditional BMIZ growth 8-15 |  |  | 0.02 [-0.14 - 0.19] | 0.05 [-0.13 - 0.23] |
| Infant is female | -0.18 [-0.45 - 0.09] | -0.11 [-0.39 - 0.16] | -0.22\* [-0.49 - 0.04] | -0.16 [-0.43 - 0.12] |
| Maternal prenatal health good |  | 0.26\* [-0.03 - 0.56] |  | 0.2 [-0.09 - 0.50] |
| Prenatal care during pregnancy |  | 0.82\*\* [0.15 - 1.48] |  | 0.85\*\* [0.19 - 1.51] |
| Mother enrolled school at age 15 y |  | 0.33\* [-0.05 - 0.71] |  | 0.27 [-0.10 - 0.63] |
| Grandmother's completed grades of schooling |  | 0.05\*\* [0.01 - 0.10] |  | 0.05\*\* [0.00 - 0.10] |
| Ethiopia | 0.86\*\*\* [0.30 - 1.43] | 0.62\* [-0.11 - 1.34] | 0.87\*\*\* [0.31 - 1.42] | 0.68\* [-0.02 - 1.39] |
| Peru | 0.57\*\*\* [0.18 - 0.97] | 0.11 [-0.50 - 0.72] | 0.53\*\*\* [0.15 - 0.92] | 0.21 [-0.39 - 0.81] |
| Vietnam | 0.44\*\* [0.06 - 0.82] | 0.38 [-0.18 - 0.94] | 0.43\*\* [0.05 - 0.80] | 0.42 [-0.13 - 0.97] |
| Median Rsquared (over 15 imputations) | 0.160 | 0.2594 | 0.161 | 0.246 |
| Observations | 283 | 283 | 276 | 276 |

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Confidence intervals in brackets. a Models adjusted for infant was firstborn, mother was first born child, mother had early menarche, maternal diet indicators from last 24 hours at age 15 (whether she ate grains/roots/tubers, fruits and vegetables, meat/fish, ate eggs, legumes, dairy), mother pregnant with child at age 15 (at time maternal anthropometrics taken), maternal age at birth, grandmaternal HAZ, BMIZ, and age, urban residence at maternal age 15, and household wealth index at maternal age 15.

Table 3. OLS Regressions of cWAZ and HAZ on Maternal Childhood and Early-Pubertal Growth

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | I. Two Growth Periods, Unadjusted | II. Two Growth Periods, Adjusteda | III. One Growth Period, Unadjusted | IV. One Growth Period, Adjusteda |
|  | cWAZ | cWAZ | cWAZ | cWAZ |
|  | Coef [95% CI] | Coef [95% CI] | Coef [95% CI] | Coef [95% CI] |
| Maternal HAZ8 | 0.20\*\* [0.01 - 0.39] | 0.17 [-0.04 - 0.39] | 0.22\*\* [0.05 - 0.40] | 0.21\*\* [0.01 - 0.41] |
| Conditional HAZ growth 8-12 | 0.02 [-0.10 - 0.13] | 0.02 [-0.14 - 0.18] |  |  |
| Conditional HAZ growth 12-15 | 0.30\*\* [0.06 - 0.54] | 0.34\*\* [0.05 - 0.62] |  |  |
| Conditional HAZ growth 8-15 |  |  | 0.37\*\*\* [0.13 - 0.62] | 0.41\*\*\* [0.13 - 0.70] |
| Maternal BMIZ8 | 0.05 [-0.13 - 0.22] | 0.03 [-0.15 - 0.22] | 0.09 [-0.09 - 0.26] | 0.08 [-0.10 - 0.26] |
| Conditional BMIZ growth 8-12 | 0.02 [-0.19 - 0.23] | 0.05 [-0.18 - 0.28] |  |  |
| Conditional BMIZ growth 12-15 | 0.30\*\* [0.04 - 0.57] | 0.41\*\*\* [0.11 - 0.70] |  |  |
| Conditional BMIZ growth 8-15 |  |  | 0.20\* [-0.01 - 0.42] | 0.28\*\* [0.04 - 0.51] |
| Infant is female | 0.14 [-0.20 - 0.48] | 0.12 [-0.24 - 0.48] | 0.14 [-0.20 - 0.48] | 0.13 [-0.22 - 0.49] |
| Age in months of infant/child | 0 [-0.01 - 0.01] | 0.04 [-0.01 - 0.08] | 0 [-0.01 - 0.01] | 0.04\* [-0.00 - 0.09] |
| Maternal prenatal health good |  | 0.22 [-0.16 - 0.60] |  | 0.3 [-0.09 - 0.68] |
| Mother ate dairy in last 24 hours, age 15 |  | 0.38\* [-0.03 - 0.79] |  | 0.42\*\* [0.02 - 0.83] |
| Maternal age at birth (years) |  | 0.46\* [-0.03 - 0.96] |  | 0.53\*\* [0.02 - 1.04] |
| Ethiopia | -0.01 [-0.73 - 0.71] | 0.12 [-0.80 - 1.03] | -0.09 [-0.81 - 0.62] | 0.14 [-0.75 - 1.04] |
| Peru | -0.11 [-0.60 - 0.38] | 0.15 [-0.66 - 0.96] | -0.2 [-0.69 - 0.30] | 0.09 [-0.72 - 0.90] |
| Vietnam | 0.02 [-0.49 - 0.54] | 0.4 [-0.36 - 1.16] | 0 [-0.51 - 0.51] | 0.37 [-0.39 - 1.12] |
| Median Rsquared (over 15 imputations) | 0.075 | 0.159 | 0.081 | 0.167 |
| Observations | 251 | 251 | 247 | 247 |
|  | V. Two Growth Periods, Unadjusted | VI. Two Growth Periods, Adjusteda | VII. One Growth Period, Unadjusted | VIII. One Growth Period, Adjusteda |
|  | HAZ | HAZ | 9+6HAZ | HAZ |
| Maternal HAZ8 | 0 [-0.26 - 0.27] | -0.08 [-0.40 - 0.23] | -0.03 [-0.29 - 0.22] | -0.12 [-0.43 - 0.18] |
| Conditional HAZ growth 8-12 | 0.09 [-0.08 - 0.26] | 0.07 [-0.16 - 0.30] |  |  |
| Conditional HAZ growth 12-15 | 0.03 [-0.34 - 0.39] | 0.06 [-0.35 - 0.47] |  |  |
| Conditional HAZ growth 8-15 |  |  | 0.18 [-0.19 - 0.55] | 0.19 [-0.24 - 0.62] |
| Maternal BMIZ8 | -0.16 [-0.40 - 0.07] | -0.19 [-0.44 - 0.07] | -0.13 [-0.37 - 0.10] | -0.14 [-0.39 - 0.11] |
| Conditional BMIZ growth 8-12 | -0.03 [-0.33 - 0.28] | -0.12 [-0.45 - 0.22] |  |  |
| Conditional BMIZ growth 12-15 | 0.41\*\* [0.03 - 0.79] | 0.54\*\* [0.11 - 0.97] |  |  |
| Conditional BMIZ growth 8-15 |  |  | 0.28\* [-0.04 - 0.60] | 0.29 [-0.06 - 0.65] |
| Infant is female | 0.31 [-0.19 - 0.81] | 0.29 [-0.23 - 0.81] | 0.31 [-0.19 - 0.81] | 0.33 [-0.19 - 0.86] |
| Age in months of infant/child | -0.04\*\*\* [-0.06 - -0.02] | -0.03 [-0.10 - 0.03] | -0.04\*\*\* [-0.05 - -0.02] | -0.01 [-0.08 - 0.06] |
| Maternal prenatal health good |  | 0.64\*\* [0.08 - 1.20] |  | 0.62\*\* [0.04 - 1.20] |
| Mother ate dairy in last 24 hours, age 15 |  | -0.06 [-0.66 - 0.54] |  | 0.02 [-0.60 - 0.65] |
| Ethiopia | 0.52 [-0.39 - 1.44] | 0.69 [-0.52 - 1.91] | 0.64 [-0.29 - 1.58] | 0.81 [-0.41 - 2.04] |
| Peru | 0.81\*\* [0.11 - 1.52] | 1.15\*\* [0.00 - 2.31] | 0.72\*\* [0.01 - 1.43] | 1.19\*\* [0.02 - 2.35] |
| Vietnam | 0.52 [-0.25 - 1.29] | 1.00\* [-0.11 - 2.11] | 0.48 [-0.29 - 1.25] | 0.95\* [-0.18 - 2.07] |
| Median Rsquared (over 15 imputations) | 0.152 | 0.222 | 0.141 | 0.205 |
| Observations | 242 | 242 | 237 | 237 |

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Confidence intervals in brackets. a Models adjusted for infant was firstborn, mother was first born child, mother had early menarche, mother pregnant with child at age 15 (at time maternal anthropometrics taken), mother enrolled in school at age 15 years, maternal diet indicators from last 24 hours at age 15 (whether she ate grains/roots/tubers, fruits and vegetables, meat/fish, ate eggs, legumes), prenatal health care received, mother’s age at birth, grandmaternal HAZ, BMIZ, schooling, and age, urban residence at maternal age 15, and household wealth index at maternal age 15.

Table 4. OLS Regressions of Offspring Birthweight and BWZ on Maternal Childhood and Early-Pubertal Growth

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | I. Two Growth Periods, Unadjusted | II. Two Growth Periods, Adjusteda | III. One Growth Period, Unadjusted | IV. One Growth Period, Adjusteda |
|  | Birthweight | Birthweight | Birthweight | Birthweight |
|  | Coef [95% CI] | Coef [95% CI] | Coef [95% CI] | Coef [95% CI] |
| Maternal HAZ8 | -23 [-87 - 41] | -47 [-120 - 26] | -24.1 [-83.1 - 35.0] | -44 [-111.8 - 23.7] |
| Conditional HAZ growth 8-12 | 34 [-9 - 77] | 31.8 [-20.1 - 84] |  |  |
| Conditional HAZ growth 12-15 | 101\*\* [14 - 188] | 116\*\* [20 - 212] |  |  |
| Conditional HAZ growth 8-15 |  |  | 107\*\* [21 - 193] | 118\*\* [22 - 214] |
| Maternal BMIZ8 | 57\* [-5 - 119] | 63\* [-1 - 127] | 68\*\* [8 - 128] | 75\*\* [13 - 138] |
| Conditional BMIZ growth 8-12 | 17 [-59 - 93] | 16 [-62.3 - 95] |  |  |
| Conditional BMIZ growth 12-15 | 61 [-28 - 151] | 48 [-44 - 140] |  |  |
| Conditional BMIZ growth 8-15 |  |  | 36.7 [-37.7 - 111.1] | 30 [-47 - 107] |
| Infant is female | -173\*\*\* [-292 - -53] | -153\*\* [-274 - -32] | -188\*\*\* [-306 - -69] | -171\*\*\* [-292- -51] |
| Grandmother's completed grades of schooling |  | 30\*\*\* [9 - 51] |  | 27\*\* [7 - 48] |
| Ethiopia | 400\*\*\* [148 - 652] | 327.2\*\* [17.1 - 637.4] | 398\*\*\* [150 - 646] | 342\*\* [42 - 642] |
| Peru | 295\*\*\* [120 - 471] | 116.9 [-130.2 - 364.0] | 270\*\*\* [96 - 445] | 138 [-106 - 381] |
| Vietnam | 163\* [-6 - 332] | 17 [-179.4 - 213.4] | 153\* [-14 - 320] | 28 [-164 - 220] |
| Median Rsquared (over 15 imputations) | 0.170 | 0.223 | 0.171 | 0.222 |
| vObservations | 283 | 283 | 283 | 283 |
|  | V. Two Growth Periods, Unadjusted | VI. Two Growth Periods, Adjusteda | VII. One Growth Period, Unadjusted | VIII. One Growth Period, Adjusteda |
|  | BWZ | BWZ | BWZ | BWZ |
| Maternal HAZ8 | -0.05 [-0.19 - 0.10] | -0.1 [-0.27 - 0.06] | -0.04 [-0.17 - 0.10] | -0.09 [-0.24 - 0.07] |
| Conditional HAZ growth 8-12 | 0.09\* [-0.01 - 0.18] | 0.08 [-0.04 - 0.20] |  |  |
| Conditional HAZ growth 12-15 | 0.26\*\* [0.06 - 0.45] | 0.28\*\* [0.07 - 0.50] |  |  |
| Conditional HAZ growth 8-15 |  |  | 0.27\*\*\* [0.08 - 0.46] | 0.29\*\*\* [0.08 - 0.51] |
| Maternal BMIZ8 | 0.17\*\* [0.03 - 0.31] | 0.18\*\* [0.04 - 0.32] | 0.19\*\*\* [0.06 - 0.33] | 0.20\*\*\* [0.06 - 0.34] |
| Conditional BMIZ growth 8-12 | 0.05 [-0.12 - 0.22] | 0.04 [-0.13 - 0.22] |  |  |
| Conditional BMIZ growth 12-15 | 0.05 [-0.16 - 0.25] | 0.01 [-0.20 - 0.22] |  |  |
| Conditional BMIZ growth 8-15 |  |  | 0.02 [-0.14 - 0.19] | 0 [-0.17 - 0.18] |
| Infant is female | -0.18 [-0.45 - 0.09] | -0.14 [-0.42 - 0.13] | -0.22\* [-0.49 - 0.04] | -0.19 [-0.46 - 0.08] |
| Grandmother's completed grades of schooling |  | 0.07\*\*\* [0.02 - 0.12] |  | 0.06\*\*\* [0.02 - 0.11] |
| Ethiopia | 0.86\*\*\* [0.30 - 1.43] | 0.68\* [-0.01 - 1.38] | 0.87\*\*\* [0.31 - 1.42] | 0.74\*\* [0.08 - 1.41] |
| Peru | 0.57\*\*\* [0.18 - 0.97] | 0.08 [-0.48 - 0.64] | 0.53\*\*\* [0.15 - 0.92] | 0.16 [-0.39 - 0.70] |
| Vietnam | 0.44\*\* [0.06 - 0.82] | 0.11 [-0.33 - 0.55] | 0.43\*\* [0.05 - 0.80] | 0.17 [-0.26 - 0.59] |
| Median Rsquared (over 15 imputations) | 0.160 | 0.214 | 0.161 | 0.210 |
| Observations | 281 | 281 | 274 | 274 |

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Confidence intervals in brackets. a Models adjusted for infant was firstborn, mother was first born child, mother had early menarche, mother pregnant with child at age 15 (at time maternal anthropometrics taken), maternal age at birth, grandmaternal HAZ, BMIZ, and age, urban residence at maternal age 15, and household wealth index at maternal age 15.

Table 5. OLS Regressions of Offspring cWAZ and HAZ on Maternal Childhood and Early-Pubertal Growth

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | I. Two Growth Periods, Unadjusted | II. Two Growth Periods, Adjusteda | III. One Growth Period, Unadjusted | IV. One Growth Period, Adjusteda |
|  | cWAZ | cWAZ | cWAZ | cWAZ |
|  | Coef [95% CI] | Coef [95% CI] | Coef [95% CI] | Coef [95% CI] |
| Maternal HAZ8 | 0.20\*\* [0.01 - 0.39] | 0.16 [-0.05 - 0.37] | 0.22\*\* [0.05 - 0.40] | 0.20\*\* [0.00 - 0.40] |
| Conditional HAZ growth 8-12 | 0.02 [-0.10 - 0.13] | 0 [-0.16 - 0.15] |  |  |
| Conditional HAZ growth 12-15 | 0.30\*\* [0.06 - 0.54] | 0.30\*\* [0.02 - 0.57] |  |  |
| Conditional HAZ growth 8-15 |  |  | 0.37\*\*\* [0.13 - 0.62] | 0.36\*\* [0.08 - 0.65] |
| Maternal BMIZ8 | 0.05 [-0.13 - 0.22] | 0.05 [-0.13 - 0.23] | 0.09 [-0.09 - 0.26] | 0.09 [-0.09 - 0.27] |
| Conditional BMIZ growth 8-12 | 0.02 [-0.19 - 0.23] | 0.03 [-0.19 - 0.25] |  |  |
| Conditional BMIZ growth 12-15 | 0.30\*\* [0.04 - 0.57] | 0.33\*\* [0.05 - 0.60] |  |  |
| Conditional BMIZ growth 8-15 |  |  | 0.20\* [-0.01 - 0.42] | 0.21\* [-0.02 - 0.44] |
| Next-generation child age in months | 0 [-0.01 - 0.01] | 0.04 [-0.01 - 0.08] | 0 [-0.01 - 0.01] | 0.04\* [-0.00 - 0.09] |
| Mother started menarche early |  | 0.16 [-0.30 - 0.62] |  | 0.08 [-0.35 - 0.51] |
| Ethiopia | -0.01 [-0.73 - 0.71] | 0.07 [-0.81 - 0.96] | -0.09 [-0.81 - 0.62] | 0.06 [-0.80 - 0.93] |
| Peru | -0.11 [-0.60 - 0.38] | 0.15 [-0.60 - 0.89] | -0.2 [-0.69 - 0.30] | 0.04 [-0.70 - 0.78] |
| Vietnam | 0.02 [-0.49 - 0.54] | 0.13 [-0.49 - 0.75] | 0 [-0.51 - 0.51] | 0.03 [-0.58 - 0.64] |
| Median Rsquared (over 15 imputations) | 0.075 | 0.116 | 0.081 | 0.120 |
| Observations | 251 | 251 | 247 | 247 |
|  | V. Two Growth Periods, Unadjusted  HAZ | VI. Two Growth Periods, Adjusteda  HAZ | VII. One Growth Period, Unadjusted  HAZ | VIII. One Growth Period, Adjusteda  HAZ |
| Maternal HAZ8 | 0 [-0.26 - 0.27] | -0.1 [-0.40 - 0.20] | -0.03 [-0.29 - 0.22] | -0.13 [-0.42 - 0.17] |
| Conditional HAZ growth 8-12 | 0.09 [-0.08 - 0.26] | 0.03 [-0.20 - 0.26] |  |  |
| Conditional HAZ growth 12-15 | 0.03 [-0.34 - 0.39] | 0.01 [-0.40 - 0.41] |  |  |
| Conditional HAZ growth 8-15 |  |  | 0.18 [-0.19 - 0.55] | 0.13 [-0.29 - 0.55] |
| Maternal BMIZ8 | -0.16 [-0.40 - 0.07] | -0.19 [-0.44 - 0.06] | -0.13 [-0.37 - 0.10] | -0.15 [-0.40 - 0.10] |
| Conditional BMIZ growth 8-12 | -0.03 [-0.33 - 0.28] | -0.1 [-0.43 - 0.23] |  |  |
| Conditional BMIZ growth 12-15 | 0.41\*\* [0.03 - 0.79] | 0.41\*\* [0.00 - 0.81] |  |  |
| Conditional BMIZ growth 8-15 |  |  | 0.28\* [-0.04 - 0.60] | 0.22 [-0.11 - 0.56] |
| Next-generation child age in months at measurement | -0.04\*\*\* [-0.06 - -0.02] | -0.03 [-0.09 - 0.04] | -0.04\*\*\* [-0.05 - -0.02] | 0 [-0.07 - 0.07] |
| Mother started menarche early |  | 0.57\* [-0.09 - 1.23] |  | 0.5 [-0.13 - 1.12] |
| Ethiopia | 0.52 [-0.39 - 1.44] | 0.77 [-0.39 - 1.92] | 0.64 [-0.29 - 1.58] | 0.82 [-0.32 - 1.96] |
| Peru | 0.81\*\* [0.11 - 1.52] | 1.20\*\* [0.17 - 2.24] | 0.72\*\* [0.01 - 1.43] | 1.15\*\* [0.12 - 2.18] |
| Vietnam | 0.52 [-0.25 - 1.29] | 0.73 [-0.19 - 1.65] | 0.48 [-0.29 - 1.25] | 0.6 [-0.31 - 1.52] |
| Median Rsquared (over 15 imputations) | 0.152 | 0.188 | 0.141 | 0.177 |
| Observations | 242 | 242 | 237 | 237 |

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Confidence intervals in brackets. a Models adjusted for infant was firstborn, mother was first born child, mother had early menarche, mother pregnant with child at age 15 (at time maternal anthropometrics taken), mother’s age at birth, grandmaternal HAZ, BMIZ, schooling, and age, urban residence at maternal age 15, and household wealth index at maternal age 15.

Table 6. Sensitivity analysis, alternative specifications for maternal childhood growth variables.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Birthweight | | | BWZ | | | | cWAZ | | | HAZ | | |
| A. Maternal Childhood Growth Variables: | I.  cHAZ/, cBMIZ | II.  Difference in HAZ/BMIZ | III. Difference in height/BMI | I.  cHAZ/, cBMIZ | II.  Difference in HAZ/BMIZ | III. Difference in height/BMI | I.  cHAZ/, cBMIZ | | II.  Difference in HAZ/BMIZ | III. Difference in height/BMI | I.  cHAZ/, cBMIZ | II.  Difference in HAZ/BMIZ | III. Difference in height/BMI |
| Height/HAZ Level age 8 |  |  |  |  |  |  | \*\* 1 | | \*\*\* 1  \*\*\* 2 | \*\*\* 1  \*\*\* 2 |  |  |  |
| Height/HAZ Change 8-12 |  | \*\*\* | \*\*\* | \* | \*\*\* | \*\*\* |  | | \*\* |  |  |  |  |
| Height/HAZ Change 12-15 | \*\* | \*\*\* |  | \*\*\* | \*\*\* |  | \*\* | | \*\* |  |  |  |  |
| Height/HAZ Change 8-15 | \*\*\* | \*\*\* | \* | \*\*\* | \*\*\* | \* | \*\*\* | | \*\*\* | \*\* |  |  |  |
| BMI/BMIZ level age 8 | \*\* 1  \*\* 2 | \*\*\* 1  \*\* 2 | \*\* 1  \*\* 2 | \*\*\* 1  \*\*\* 2 | \*\*\* 1  \*\*\* 2 | \*\*\* 1  \*\* 2 |  | | \*\* 1  \*\* 2 |  |  |  |  |
| BMI/BMIZ change 8-12 |  |  |  |  |  |  |  | | \*\* |  |  |  |  |
| BMI/BMIZ Change 12-15 | \* |  |  |  |  |  | \*\*\* | | \*\* |  | \*\* | \*\* |  |
| BMI/BMIZ growth 8-15 |  |  |  |  |  |  | \*\* | | \*\* |  |  | \* |  |

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1 for the coefficient on the variable listed in the heading of the first column, in a regression of the next-generation child outcomes on the maternal childhood growth variables, according to the definitions listed in row A. “1” indicates that the coefficient is significant in the regressions with one growth period; “2” indicates that the coefficient is significant in the regression with 2 growth periods. Coefficients on the maternal childhood growth variables are all >0. All regressions are adjusted for next-generation child sex, age in months (only for cWAZ and HAZ outcomes), whether firstborn, mother was first born child, mother had early menarche, mother attended school at age 15, mother pregnant with child at age 15 (when age 15 anthropometrics taken), maternal diet indicators from last 24 hours at age 15 (whether she ate grains/roots/tubers, fruits and vegetables, meat/fish, ate eggs, legumes, dairy), maternal prenatal health good, prenatal care received during pregnancy, maternal age at birth, grandmaternal HAZ, BMIZ, age, and years of schooling, urban residence at maternal age 15, household wealth index at maternal age 15, and country dummies.