Table S1. Maternal and infant variables of interest from cross-sectional survey and regression analysis.

| Variables of interest | | | | | Univariable (p-value) | | Adjusted OR, (95% CI); p-value | |
|---------------------------------------|--------------------|-------------------|--------------------|-------------------|-----------------------|-------------|--------------------------------|------------------------------|
| | Stunting (n=70) | Normal (n=320) | Underweight (n=58) | Normal (n=332) | Stunting | Underweight | Stunting | Underweight |
| Maternal ^a | | | | | | | | |
| Age (yrs), mean (SD) | 27.3 (6.8) | 27.0 (6.3) | 28.6 (7.3) | 26.7 (6.2) | 0.707 | 0.036 | 1.01, (0.97, 1.06); 0.602 | 1.06, (1.01, 1.10); 0.019 |
| Ethnicity, n (%) | | | | | | | | |
| Karen | 47 (18.5) | 207 (72.1) | 35 (13.8) | 219 (86.2) | 0.401 | 0.612 | Not included | Not included |
| Burman | 17 (14.9) | 97 (85.1) | 18 (15.8) | 96 (84.2) | 0.401 | | | |
| Religion, n (%) | | , , | • | • | | | | |
| Buddhist | 55 (19.0) | 235 (81.0) | 48 (16.6) | 242 (83.5) | | | | |
| Christian | 11 (14.1) | 67 (85.9) | 9 (11.5) | 69 (88.5) | 0.283 | 0.102 | Not included | Not included |
| Muslim | 3 (14.3) | 18 (85.7) | 1 (4.76) | 20 (95.2) | | | | |
| Status, n (%) | | | | | | | | |
| Refugee (Referent) | 21 (12.7) | 144 (87.3) | 16 (9.7) | 149 (90.3) | 0.021 | 0.014 | 2.08, (1.12, 3.84); 0.020 | 2.26, (1.17, 4.36); 0.015 |
| Migrant | 49 (21.8) | 176 (78.2) | 42 (18.7) | 183 (81.3) | | | | |
| Gravidity, n (%) | | | | | | | | |
| Primigravida | 18 (14.2) | 109 (85.8) | 15 (11.8) | 112 (88.2) | 0.177 | 0.238 | Not included | Not included |
| Multigravida | 52 (19.8) | 211 (80.2) | 43 (16.4) | 220 (83.7) | | | | |
| Height (cm), mean (SD) ^b | 148.0 (5.2) | 151.6 (5.2) | 149.1 (5.7) | 151.3 (5.2) | < 0.001 | 0.003 | 0.50, (0.38, 0.66); <0.001 | 0.64, (0.48, 0.85); 0.002 |
| BMI, n (%) ^c | | | | | | | | |
| Low ($< 18.5 \text{ kg/m}^2$) | 10 (17.0) | 49 (83.1) | 11 (18.6) | 48 (81.4) | | | | |
| Normal (18.5-22.9 kg/m ²) | 27 (15.7) | 145 (84.3) | 24 (14.0) | 148 (86.0) | 0.974 | 0.434 | Not included | Not included |
| High ($\geq 23 \text{ kg/m}^2$) | 12 (16.2) | 62 (83.8) | 8 (10.8) | 66 (89.2) | | | | |
| GWG, n (%) ^d | | | | | | | | |
| < 10 kg | 29 (21.0) | 109 (79.0) | 24 (17.4) | 114 (82.6) | | | | |
| 10-15 kg | 19 (14.8) | 109 (85.2) | 18 (14.1) | 110 (85.9) | 0.018 | 0.041 | Not included | Not included |
| $\geq 15 \text{ kg}$ | 2 (5.0) | 38 (95.0) | 1 (2.5) | 39 (97.5) | 0.0.0 | | | |
| Malaria in pregnancy, n (%) | | | • | | | | | |
| Yes | 12 (34.3) | 23 (65.7) | 10 (28.6) | 25 (71.4) | 0.000 | 0.017 | 1.88, (0.79, 4.45); | 1.91, (0.80, 4.57); |
| No (Referent) | 58 (16.3) | 297 (83.7) | 48 (13.5) | 307 (86.5) | 0.008 | 0.017 | 0.151 | 0.145 |
| Anemia, n (%) | • | • | , , | , , | | | | |
| Yes | 16 (19.5) | 66 (80.5) | 10 (12.2) | 72 (87.8) | 0.678 | 0.443 | Not included | Not included |
| No | 54 (17.5) | 254 (82.5) | 48 (15.6) | 260 (84.4) | | | | |
| Literacy, n (%) | , , | , , | . , | . , | | | | |
| Can read/write | 41 (15.6) | 222 (84.4) | 33 (12.6) | 230 (87.5) | 0.081 | 0.063 | 0.98, (0.52, 1.85); 0.961 | 0.87, (0.47, 1.62); 0.668 |
| Cannot read/write (Referent) | 29 (22.8) | 98 (77.2) | 25 (19.7) | 102 (80.3) | | | | |
| Smoker, n (%) | , | ` / | , , | ` | | | | |
| Yes | 11 (31.4) | 24 (68.6) | 7 (20.0) | 28 (80.0) | 0.029 | 0.371 | 1.80, (0.70, 4.62); | Not included |

| | | Normal (n=320) | Underweight (n=58) | Normal (n=332) | Univariable (p-value) | | Adjusted OR, (95% CI); p-value | |
|--|-----------------|-------------------|-----------------------|-------------------|-----------------------|-------------|--------------------------------|------------------------------|
| Variables of interest | Stunting (n=70) | | | | Stunting | Underweight | Stunting | Underweight |
| No (Referent) | 59 (16.6) | 296 (83.4) | 51 (14.4) | 304 (85.6) | | | 0.224 | |
| ANC visits, n (%) | | • | · , , | | | | | |
| <8 visits (Referent) | 6 (26.1) | 17 (73.9) | 5 (21.7) | 18 (78.3) | 0.274 | 0.262 | NT 4 1 1 1 1 | NT 4 1 1 1 1 |
| ≥8 visits | 64 (17.5) | 302 (82.5) | 53 (14.5) | 313 (85.5) | 0.274 | 0.363 | Not included | Not included |
| Length of residence (yrs), mean (SD) | 8.3 (6.4) | 7.5 (5.8) | 7.8 (6.1) | 7.6 (5.9) | 0.278 | 0.781 | Not included | Not included |
| Weekly food expenditure per household member (USD), mean (SD) | 4.19 (2.62) | 4.29 (2.78) | 4.00 (2.25) | 4.32 (2.83) | 0.773 | 0.417 | Not included | Not included |
| ≥2 food resources, n (%) | | | | | | | | |
| Yes | 62 (18.2) | 279 (81.8) | 49 (14.4) | 292 (85.6) | 0.846 | 0.389 | 9 Not included | Not included |
| No | 8 (17.0) | 39 (83.0) | 9 (19.2) | 38 (80.9) | 0.846 | 0.389 | Not included | |
| Sanitation, n (%) ^e | | | | | | | | |
| Improved (Referent) | 62 (17.1) | 300 (82.9) | 51 (14.1) | 311 (85.9) | 0.102 | 0.006 | NI_4 :1 4 _ 1 | Not included |
| Unimproved | 8 (29.6) | 19 (70.4) | 7 (25.9) | 20 (74.1) | 0.103 | 0.096 | Not included | |
| Time travelled to clinic, n (%) ^e | | | | | | | | |
| <30 minutes (Referent) | 43 (14.9) | 245 (85.1) | 33 (11.5) | 255 (88.5) | 0.000 | 0.001 | Not included | Not included |
| ≥30 minutes | 27 (26.5) | 75 (73.5) | 25 (24.5) | 77 (75.5) | 0.009 | 0.001 | | |
| Infant ^f | , , | , , | , , | , , | | | | |
| Length of gestation, n (%) | | | | | | | | |
| Term (Referent) | 60 (16.6) | 302 (83.4) | 53 (14.6) | 309 (85.4) | 0.011 | 0.587 | 3.05, (1.29, 7.22); | 1.35, (0.47, 3.91) 0.580 |
| <37 wks | 10 (35.7) | 18 (64.3) | 5 (17.9) | 23 (82.1) | 0.011 | 0.387 | 0.011 | |
| Sex, n (%) | | | | | | | | |
| Male | 41 (22.9) | 138 (77.1) | 34 (19.0) | 145 (81.0) | 0.019 | 0.035 | 1.87, (1.08, 3.23); | 1.94, (1.07, 3.52); 0.029 |
| Female (Referent) | 29 (13.7) | 182 (86.3) | 24 (11.4) | 187 (88.6) | 0.019 | 0.033 | 0.025 | |
| Birth weight (kg), mean (SD) ^g | 2.620 (0.45) | 2.990 (0.44) | 2.650 (0.46) | 2.970 (0.45) | < 0.001 | < 0.001 | Not included | Not included |
| Birth length (cm), mean (SD) ^g | 46.2 (3.1) | 48.5 (2.2) | 46.9 (2.6) | 48.3 (2.5) | < 0.001 | < 0.001 | Not included | Not included |
| Small-for-gestational age, n (%) ^h | | | | | | | | |
| Yes | 26 (32.1) | 55 (67.9) | 25 (30.9) | 56 (69.1) | <0.001 | <0.001 | 3.42, (1.88, 6.22); | 4.44, (2.36, 8.34) |
| No (Referent) | 44 (14.7) | 256 (85.3) | 33 (11.0) | 267 (89.0) | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| Age (months), mean (SD) | 7.8 (3.5) | 7.2 (3.4) | 8.2 (3.6) | 7.1 (3.4) | 0.194 | 0.025 | 1.06, (0.98, 1.15); 0.121 | 1.12, (1.03, 1.22) 0.008 |
| Practices ^a | | | | | | | | |
| Breastfeeding, n (%) | | | | | | | | |
| Optimal | 5 (12.2) | 36 (87.8) | 4 (9.76) | 37 (90.2) | 0.452 | 0.580 | Not included | Not included |
| Suboptimal | 17 (19.3) | 71 (80.7) | 13 (14.8) | 75 (85.2) | 0.734 | 0.500 | 1 NOT INCIDUCE | 1 NOT IIICIUUCU |
| Dietary diversity, n (%) | | | | | | | | |
| ≥4 food groups fed | 13 (22.4) | 45 (77.6) | 13 (22.4) | 45 (77.6) | 0.334 | 0.189 | Not included | Not included |
| < 4 food groups fed | 39 (17.0) | 191 (83.0) | 35 (15.2) | 195 (84.8) | 0.334 | 0.109 | | |

| Variables of interest | Stunting (n=70) | Normal (n=320) | Underweight (n=58) | Normal (n=332) | Univariable (p-value) | | Adjusted OR, (95% CI); p-value | |
|---------------------------------|-----------------|-------------------|--------------------|-------------------|-----------------------|-------------|--------------------------------|--------------|
| | | | | | Stunting | Underweight | Stunting | Underweight |
| Yes | 3 (16.7) | 15 (83.3) | 4 (22.2) | 14 (77.8) | 1.00 | 0.500 | Not included | Not included |
| No | 43 (17.9) | 197 (82.1) | 37 (15.4) | 203 (84.6) | | | | |
| Any protein fed, n (%) | | | • | | | | | |
| Yes | 18 (19.8) | 73 (80.2) | 17 (18.7) | 74 (81.3) | 0.465 | 0.366 | Not included | Not included |
| No | 27 (16.2) | 140 (83.8) | 24 (14.4) | 143 (85.6) | | | | |
| Handwashing, n (%) ^e | | | • | | | | | |
| Yes | 43 (14.7) | 249 (85.3) | 37 (12.7) | 255 (87.3) | 0.025 | 0.051 | Not included | Not included |
| No (Referent) | 19 (25.7) | 55 (74.3) | 16 (21.6) | 58 (78.4) | | | | |
| Safe stool disposal, n (%)e | | ` ' | , , | • / | | | | |
| Yes (Referent) | 25 (16.3) | 128 (83.7) | 15 (9.8) | 138 (90.2) | 0.806 | 0.044 | Not included | Not included |
| No | 35 (17.3) | 167 (82.7) | 35 (17.3) | 167 (82.7) | | | | |

A total of 4 multivariable regression models were created: 1 model tested "maternal risk factors" and infant feeding and WASH behavioral factors and 1 model tested "infant risk factors", with both models tested for association with stunting and underweight.

^aTotal number of observations included in multivariable regression for "maternal risk factors" for stunting (n=389) and underweight (n=381). Adjusted for maternal age.

^bUnit of 5 cm used for multivariable regression.

^cIncluded only those women with BMI measurement from first trimester (<14 weeks' gestation), with low BMI (n=59), normal BMI (n=172), and high BMI (n=74), following WHO Asian BMI categories.³²

^dSignificant for trend. Included only those women with first weight measurement in first trimester (<14 weeks' gestation, n=306). Excluded from multivariable regression for "maternal risk factors" due to limitation of sample size.

^eExcluded from multivariable regression analysis for "maternal risk factors" due to collinearity with status (refugee or migrant).

^fTotal number of observations included in multivariable regression for "infant risk factors" for stunting and underweight (n=381). Adjusted for length of gestation, infant sex and infant age.

^gExcluded from multivariable regression analysis for "infant risk factors" due to collinearity with small-for-gestational age.

^hA total of 9 data points missing (n=381).