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| **Supplementary Table S1.** Comparison of maternal and infant characteristics of excluded and included participants(Numbers and percentages for categorical variables or mean values and standard deviations for continuous variables) |
|  | Excluded (*n* 806) |  | Included (*n* 431) | *P*\* |
| Characteristics | Mean/*n* | SD/% |  | Mean/*n* | SD/% |
| **Maternal** |  |  |  |  |  |  |
| Ethnicity |  |  |  |  |  | <0.001 |
|  Chinese | 468 | 58.1 |  | 223 | 51.7 |  |
|  Malay | 222 | 27.5 |  | 100 | 23.2 |  |
|  Indian | 116 | 14.4 |  | 108 | 25.1 |  |
| Educational level |  |  |  |  |  | 0.136 |
|  Secondary or lower | 238 | 29.9 |  | 144 | 34.0 |  |
|  Post-secondary or higher | 559 | 70.1 |  | 279 | 66.0 |  |
| Monthly household income (SGD) |  |  |  |  |  | 0.019 |
|  0-1999 | 104 | 13.9 |  | 77 | 19.0 |  |
|  2000-5999 | 411 | 55.1 |  | 229 | 56.4 |  |
|  6000 and above | 231 | 31.0 |  | 100 | 24.6 |  |
| Early pregnancy BMI (kg/m2) |  |  |  |  |  | 0.247 |
|  Underweight (<18.5) | 58 | 8.3 |  | 35 | 8.4 |  |
|  Normal (18.5-22.9) | 331 | 47.7 |  | 176 | 42.4 |  |
|  At risk for overweight/Overweight (≥23.0) | 309 | 44.3 |  | 204 | 49.2 |  |
| Age, years | 30.66 | 5.13 |  | 30.42 | 5.23 | 0.434 |
| **Infant** |  |  |  |  |  |  |
| Gender of infant |  |  |  |  |  | 0.855 |
|  Male | 389 | 53.1 |  | 226 | 52.4 |  |
|  Female | 343 | 46.9 |  | 205 | 47.6 |  |
| Gestational age (weeks) |  |  |  |  |  | 0.371 |
|  <37 | 62 | 8.5 |  | 30 | 7.0 |  |
|  ≥37 | 670 | 91.5 |  | 401 | 93.0 |  |
| Birth order |  |  |  |  |  | 0.011 |
|  First child | 354 | 48.4 |  | 175 | 40.6 |  |
|  Not first child | 378 | 51.6 |  | 256 | 59.4 |  |
| Feeding mode in the first six months of life |  |  |  |  |  | <0.001 |
|  Exclusively breastfed | 96 | 15.9 |  | 39 | 9.8 |  |
|  Partially breastfed | 385 | 64.0 |  | 242 | 60.7 |  |
|  Exclusively formula-fed | 121 | 20.1 |  | 118 | 29.6 |  |
| WLZ change (z-score) | -0.11 | 1.34 |  | -0.05 | 1.48 | 0.561 |
| SGD, Singapore dollar; BMI, body mass index; WLZ, weight-for-length z-score.\* *P* values are based on Fisher’s exact test or independent *t* test as appropriate. |

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| **Supplementary Table S2.** Sensitivity analysis for association of maternal and infant characteristics with post-midnight feeding(Odds ratios and 95 % confidence intervals) |
|  | OR for post-midnight feeding (95% CI) |
| Crude | *P* | Adjusted | *P* |
| **Maternal** |  |  |  |  |
| Ethnicity |  |  |  |  |
|  Chinese | Reference |  | Reference |  |
|  Malay | 1.86 (1.07, 3.22) | 0.028 | 1.34 (0.67, 2.66) | 0.405 |
|  Indian | 1.69 (1.00, 2.85) | 0.050 | 1.59 (0.81, 3.14) | 0.178 |
| Educational level |  |  |  |  |
|  Secondary & lower | Reference |  | Reference |  |
|  Post-secondary & above | 0.55 (0.35, 0.87) | 0.011 | 1.23 (0.65, 2.31) | 0.524 |
| Monthly household income (SGD) |  |  |  |  |
|  0-1999 | Reference |  | Reference |  |
|  2000-5999 | 0.78 (0.43. 1.41) | 0.407 | 0.72 (0.35, 1.47) | 0.369 |
|  6000 and above  | 0.35 (0.17, 0.71) | 0.004 | 0.44 (0.17, 1.11) | 0.081 |
| Early pregnancy BMI (kg/m2) |  |  |  |  |
|  Underweight (<18.5) | Reference |  | Reference |  |
|  Normal (18.5-22.9) | 1.04 (0.41, 2.62) | 0.942 | 1.30 (0.42, 4.03) | 0.645 |
|  At risk for overweight/Overweight (≥23.0) | 1.56 (0.62, 3.93) | 0.345 | 1.73 (0.55, 5.50) | 0.351 |
| Maternal age (years) | 0.99 (0.95, 1.03) | 0.514 | 1.03 (0.98, 1.09) | 0.271 |
| **Infant** |  |  |  |  |
| Gender  |  |  |  |  |
|  Male | Reference |  | Reference |  |
|  Female | 0.72 (0.47, 1.12) | 0.142 | 0.77 (0.459, 1.286) | 0.315 |
| Gestational age (weeks) |  |  |  |  |
|  <37 | Reference |  | Reference |  |
|  ≥37 | 0.94 (0.39, 2.31) | 0.900 | 0.93 (0.27, 3.24) | 0.913 |
| Birth order |  |  |  |  |
|  First child | Reference |  | Reference |  |
|  Not first child | 1.12 (0.72, 1.75) | 0.611 | 1.02 (0.58, 1.80) | 0.946 |
| Feeding modes in the first six months of life |  |  |  |  |
|  Exclusively formula-fed | Reference |  | Reference |  |
|  Mixed-fed | 0.70 (0.42, 1.17) | 0.173 | 0.60 (0.32, 1.10) | 0.192 |
|  Exclusively/predominantly breastfed | 0.24 (0.09, 0.63) | 0.004 | 0.30 (0.10, 0.92) | 0.035 |
| WLZ change (z-score) | 0.88 (0.76, 1.02) | 0.098 | 0.92 (0.77, 1.10) | 0.374 |
| OR, odds ratio; CI, confidence interval; SGD, Singapore dollar; BMI, body mass index; WLZ, weight-for-length z-score. |