Supplementary Table 1: Characteristics of adolescent girls 15–19 years old

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|  **Variables** |  **Categories** | **Total** |
| **%** | **N** |
| Age (mean)  |   | 16.9 years | 3731 |
| Employment | Not working | 35.3 | 1254 |
| Paid employment | 64.7 | 2477 |
| Education | No education | 12.0 | 395 |
| Primary | 19.9 | 735 |
| Secondary and higher | 68.1 | 2601 |
| Marital status | Never married | 81.8 | 3042 |
| Married | 18.2 | 689 |
| Visited health facility in the last 12 months | No | 65.1 | 2387 |
| Yes | 34.9 | 1344 |
| Contraceptive use | No | 95.6 | 3566 |
| Yes | 4.4 | 165 |
| BMI\* | Underweight (<-2 SD) | 5.1 | 172 |
| Normal weight (-2 SD to +1 SD) | 91.1 | 3415 |
| Overweight/obesity (>+1 SD) | 3.8 | 140 |
| Decision-making on healthcare | Girl not involved | 89.2 | 1865 |
| Girl involved | 10.8 | 223 |
| Decision-making on large household purchases | Girl not involved | 93.6 | 1973 |
| Girl involved | 6.4 | 115 |
| Decision-making on household purchases for daily needs | Girl not involved | 93.4 | 1660 |
| Girl involved | 6.6 | 98 |
| Decision-making on visiting family and friends | Girl not involved | 90.4 | 1897 |
| Girl involved | 9.6 | 191 |
| Access to an improved source of water\*\* | No | 12.3 | 544 |
| Yes | 87.7 | 3186 |
| Access to improved toilet facilities | No | 45.0 | 1579 |
| Yes | 55.0 | 2152 |
| Caste/ethnicity  | Brahmin/Chhetri | 32.7 | 1861 |
| Socially disadvantaged  | 52.2 | 474 |
| Disadvantaged others | 15.1 | 1396 |
| Wealth quintiles | Lowest | 19.1 | 810 |
| Second | 20.7 | 755 |
| Middle | 20.1 | 698 |
| Fourth | 22.3 | 788 |
| Highest | 17.8 | 680 |
| Residence | Urban | 26.8 | 1361 |
| Rural | 73.2 | 2370 |
| Anaemia | Absent | 60.4 | 2335 |
| Present | 39.6 | 1396 |

\*BMI available for N= 3727 and n=1 was a flagged case in the dataset, \*\*n=1 unidentified other source, data available for N= 3730

Supplementary Table 2: Adjusted associations for factors (including food security) of anaemia among adolescent girls 15–19 years old: Year 2011 and 2016

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| --- | --- | --- | --- |
| **Possible factors** | **Categories** | **Multivariable model 2011 (N=997)** | **Multivariable model 2016 (N=975)** |
| **aOR [95% CI]** | **p** | **aOR [95% CI]** | **p** |
| Age |  | 0.98 (0.85, 1.13) | 0.792 | 0.88 (0.76, 1.02) | 0.095 |
| Education | No education | **Ref** |  | **Ref** |  |
| Primary | 1.39 (0.66, 2.95) | 0.386 | 0.50 (0.22, 1.15) | 0.104 |
| Secondary or higher | 1.22 (0.61, 2.44) | 0.579 | 0.83 (0.41, 1.67) | 0.598 |
| Current marital status | Never married | **Ref** |  | **Ref** |  |
| Married | 1.44 (0.92, 2.25) | 0.107 | 0.85 (0.56, 1.30) | 0.453 |
| Employment status | Not working | **Ref** |  | **Ref** |  |
| Working | 1.54 (1.04, 2.27) | 0.030 | 1.26 (0.92, 1.74) | 0.154 |
| BMI | Normal weight (-2 SD to +1 SD) | **Ref** |  | **Ref** |  |
| Thinness (<-2 SD) | 0.66 (0.25, 1.72) | 0.397 | 0.72 (0.30, 1.68) | 0.442 |
| Overweight/obesity (>+1 SD) | 0.79 (0.32, 1.95) | 0.605 | 0.76 (0.35, 1.66) | 0.494 |
| Caste/ethnicity | Brahmin/Chhetri | **Ref** |  | **Ref** |  |
| Socially disadvantaged | 1.13 (0.79, 1.63) | 0.502 | 1.31 (0.89, 1.94) | 0.167 |
| Disadvantaged others | 0.60 (0.28, 1.29) | 0.193 | 1.24 (0.73, 2.12) | 0.427 |
| Access to improved source of water | No | **Ref** |  | **Ref** |  |
| Yes | 0.82 (0.44, 1.55) | 0.542 | 0.99 (0.56, 1.76) | 0.980 |
| Access to improved toilet | No | **Ref** |  | **Ref** |  |
| Yes | 0.55 (0.35, 0.84) | 0.007 | 0.94 (0.58, 1.54) | 0.813 |
| Household Food Security | Food secure | **Ref** |  | **Ref** |  |
| Mildly food insecure | 0.89 (0.53, 1.5) | 0.661 | 1.61 (1.06, 2.46) | 0.027 |
| Moderately food insecure | 0.83 (0.51, 1.38) | 0.476 | 1.47 (0.95, 2.27) | 0.085 |
| Severely food insecure | 0.67 (0.40, 1.12) | 0.129 | 0.69 (0.33, 1.44) | 0.320 |
| Wealth quintile | Lowest | **Ref** |  | **Ref** |  |
| Second | 1.05 (0.64, 1.73) | 0.848 | 1.28 (0.82, 1.99) | 0.269 |
| Middle | 1.31 (0.70, 2.44) | 0.402 | 1.40 (0.83, 2.38) | 0.208 |
| Fourth | 1.63 (0.80, 3.32) | 0.180 | 1.22 (0.68, 2.18) | 0.501 |
| Highest | 2.75 (1.21, 6.23) | 0.016 | 1.02 (0.51, 2.03) | 0.956 |
| Ecological zone | Mountains | **Ref** |  | **Ref** |  |
| Hill | 1.16 (0.69, 1.95) | 0.58 | 0.62 (0.33, 1.18) | 0.148 |
| Terai | 3.28 (1.70, 6.34) | <0.001 | 1.84 (0.89, 3.78) | 0.098 |

Note: models adjusted for months (Nepali Sambat calendar) of data collection