**Supplemental Table 1:** Variables used for constructing the socioeconomic status (SES) quantiles in the principle component analysis (PCA) among households registered in the Gulu HDSS update-round 1

|  |  |  |
| --- | --- | --- |
| **Variable** | **Values** | **N household (%)** |
|  |  |  |
| **Type of housing** | Temporary (1)  Semi-permanent (2) | 2553 (94.3)  154 (5.7) |
|  |  |  |
| **Water source** | Pipe / motor pump (3)  Protected well (2)  Unprotected (1) | 1292 (47.7)  233 (8.6)  1182 (43.7) |
|  |  |  |
| **Type of garbage disposal** | Anywhere (0)  Burning/roadside/vacant land/garden (1)  Garbage pit (own/shared) (2)  Missing | 488 (18.0)  1280 (47.3)  898 (33.2)  41 (1.5) |
|  |  |  |
| **Livestock** | No (0)  Yes (1)  Missing | 2310 (85.3)  359 (13.3)  38 (1.4) |
|  |  |  |
| **Ownership of farm land** | No (0)  Yes (1) | 553 (20.4)  2154 (79.6) |
|  |  |  |
| **Latrine** | No (0)  Yes (1) | 618 (22.8)  2089 (77.2) |
|  |  |  |
| **Member of a community saving** | No (0)  Yes (1)  Missing | 1199 (44.3)  1489 (55.0)  19 (0.7) |
|  |  |  |
| **Had a bank account** | No (0)  Yes (1)  Missing | 2160 (79.8)  384 (14.2)  163 (6.0) |
|  |  |  |
| **Number of domestic animals**  (chicken, pigs, goats) | 0  1  2  3 | 339 (12.5)  832 (30.7)  1219 (45.0)  317 (11.7) |
|  |  |  |
| **Number of cattle**  (local + exotic) | 0  1  2 | 2345 (87.0)  329 (12.2)  24 (0.9) |
|  |  |  |
| **Number of assets**  (kerosene lamp, bicycle, phone, charcoal stove, watch, radio) | 0  1  2  3  4  5  6 | 600 (22.2)  535 (19.8)  513 (19.0)  483 (17.8)  381 (14.1)  152 (5.6)  43 (1.6) |

Abbreviations: SES; socioeconomic status, PCA: principle component analysis, HDSS: health and demographic surveillance site

The variables and distribution presented was used to construct the SES variable using PCA. Information on SES was collected at the household-level rather than the individual-level. Frequencies and percentages represent all household registered in the Gulu HDSS at update-round 1 in 2011. Hence, the table does not represent study participants. **Supplemental Table 2:** Distribution of participant and household characteristics by headship (n=11,388)

|  |  |  |
| --- | --- | --- |
|  | **Male-headed** | **Female-headed** |
| **Gender of participant** |  |  |
| Male | **4413 (48.9)** | **835 (35.4)** |
| Female | **4614 (51.1) †** | **1526 (64.6) †** |
|  |  |  |
| **Age groups** |  |  |
| <5 years | **2141 (23.7)** | **399 (16.9)** |
| 5-12 years | **2511 (27.8)** | **685 (29.0)** |
| 13-19 years | **1152 (12.8)** | **387 (16.4)** |
| 20-59 years | **2873 (31.8)** | **605 (25.6)** |
| 60 years and above | **350 (3.9) †** | **285 (12.1) †** |
|  |  |  |
| **Marital status‡** |  |  |
| Married/cohabiting | **3018 (76.0)** | **213 (18.7)** |
| Divorced/separated | **171 (4.3)** | **183 (16.0)** |
| Widowed | **95 (2.4)** | **489 (42.9)** |
| Single | **688 (17.3) †** | **256 (22.4) †** |
|  |  |  |
| **Alcohol consumption‡** |  |  |
| Never | **2649 (66.7)** | **865 (75.8)** |
| Less than once per month | **204 (5.1)** | **60 (5.3)** |
| 1-3 times per month | **373 (9.4)** | **97 (8.5)** |
| 1-4 times per week | **597 (15.0)** | **91 (8.0)** |
| 5-7 times per week | **148 (3.7) †** | **28 (2.5) †** |
|  |  |  |
| **Smoking daily‡** | **669 (7.4) †** | **47 (2.0) †** |
|  |  |  |
| **Household size (members)** |  |  |
| 1 member | **109 (1.2)** | **120 (5.1)** |
| 2-4 | **1671 (18.5)** | **723 (30.6)** |
| 5-6 | **2174 (24.1)** | **818 (34.7)** |
| 7 (average household) | **1395 (15.6)** | **260 (11.0)** |
| 8-9 | **2187 (24.2)** | **287 (12.2)** |
| 10+ | **1491 (16.5) †** | **153 (6.5) †** |
|  |  |  |
| **Child-adult ratio** |  |  |
| 1 (lowest ratio: 0.1) | **3346 (37.1)** | **953 (40.4)** |
| 2 (second lowest ratio: 1.1-1.5) | **1872 (20.7)** | **232 (9.8)** |
| 3 (second highest ratio: 1.6-2) | **1812 (20.1)** | **421 (17.8)** |
| 4 (highest ratio: 2.25-7) | **1997 (22.1) †** | **755 (32.0) †** |
|  |  |  |
| **Living with ≥ stunted person** | **3767 (41.7) †** | **843 (35.7) †** |
|  |  |  |
| **Living with ≥ overweight person** | **724 (8.0) †** | **133 (5.6) †** |
|  |  |  |
| **Deprived** | **1250 (13.9) †** | **260 (11.0) †** |
|  |  |  |
| **Child crowding** | **1082 (17.3) †** | **105 (6.7) †** |
|  |  |  |
| **Distance to health centre** |  |  |
| 1 (lowest distance) | **1758 (25.1)** | **423 (24.2)** |
| 2 | **1716 (24.5)** | **476 (27.2)** |
| 3 | **1806 (25.8)** | **386 (22.1)** |
| 4 (highest distance) | **1720 (24.6) †** | **463 (26.5) †** |
|  |  |  |
| **Household SES quantiles** |  |  |
| Lowest | **680 (11.8)** | **401 (27.9)** |
| Low | **958 (16.7)** | **384 (26.7)** |
| Middle | **1224 (21.3)** | **342 (23.8)** |
| High | **1309 (22.8)** | **186 (13.0)** |
| Highest | **1576 (27.4) †** | **123 (8.6) †** |

**‡**Information only collected among participants 15 years and above

**Emboldened entries** mark statistical significant associations with significance level indicated by: **†** *P*-value<0.05

**Supplemental Table 3**: Participant characteristics by missing and non-missing information on child crowding, distance to health centre or socioeconomic status (SES)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | | **Participants with complete information**  **N (%)** | **Participants with missing information on child crowding, distance or SES**  **N (%)** |
|  | | |  |  |
| N | | | 6188 | 5200 |
|  | | |  |  |
| **Gender of participant** | | |  |  |
|  | Male | | 2877 (46.5) | 2371 (45.6) |
|  | Female | | 3311 (53.5) | 2829 (54.4) |
| **Age** | | |  |  |
|  | 0-4 | | **1359 (22.0)** | **1181 (22.7)** |
|  | 5-12 | | **1772 (28.6)** | **1424 (27.4)** |
|  | 13-19 | | **885 (14.3)** | **654 (12.6)** |
|  | 20 and above | | **2172 (35.1) †** | **1941 (37.3) †** |
|  |  | |  |  |
| **Underweight** | | |  |  |
| No | | | **5273 (85.2)** | **4346 (83.6)** |
| Yes | | | **915 (14.8) †** | **854 (16.4) †** |
|  | | |  |  |
| **Season** | | |  |  |
|  | Non-hungry | | **2427 (39.2)** | **2513 (48.3)** |
|  | Hungry (May-July) | | **3761 (60.8) †** | **2687 (51.7) †** |
|  |  | |  |  |
| **Headship** | | |  |  |
|  | Male | | **4952 (80.3)** | **4075 (78.4)** |
|  | Female | | **1236 (20.0) †** | **1125 (21.6) †** |
|  |  | |  |  |
| **Polygamy** | | |  |  |
|  | No | | **5225 (84.4)** | **4509 (86.7)** |
|  | Yes | | **963 (15.6) †** | **691 (13.3) †** |
|  | | |  |  |
| **Household size (members)** | | |  |  |
|  | 1 member | | **100 (1.6)** | **129 (2.5)** |
|  | 2-4 members | | **1115 (18.0)** | **1279 (24.6)** |
|  | 5-6 members | | **1574 (25.4)** | **1418 (27.3)** |
|  | 7 members | | **883 (14.3)** | **772(14.9)** |
|  | 8-9 members | | **1479 (23.8)** | **1004 (19.3)** |
|  | 10-18 members | | **1046 (16.9) †** | **598 (11.5) †** |
|  |  | |  |  |
| **Child-adult ratio quantiles** | | |  |  |
|  | 1 (lowest ratio: 0.1) | | **2420 (39.1)** | **1879 (36.1)** |
|  | 2 (second lowest ratio: 1.1-1.5) | | **1116 (18.0)** | **988 (19.0)** |
|  | 3 (second highest ratio: 1.6-2) | | **1179 (19.1)** | **1054 (20.3)** |
|  | 4 (highest ratio: 2.25-7) | | **1473 (23.8) †** | **1279 (24.6) †** |
|  |  | |  |  |
| **Living with ≥ stunted person** | | |  |  |
|  | No | | **3564 (57.6)** | **3214 (61.8)** |
|  | Yes | | **2624(42.4) †** | **1986 (38.2) †** |
|  |  | |  |  |
| **Living with ≥ overweight person** | | |  |  |
|  | No | | 5720 (92.4) | 4811 (92.5) |
|  | Yes | | 468 (7.6) | 389 (7.5) |
|  |  | |  |  |
| **Deprived area** | | |  |  |
|  | No | | **5541 (89.5)** | **4337 (83.4)** |
|  | Yes | | **647 (10.5) †** | **863 (16.6) †** |
|  |  | |  |  |
|  | |  |  |  |

Abbreviations: SES; socioeconomic status

**Emboldened entries** mark statistical significant associations with significance level indicated by: **†** *P*-value<0.05