**Supplementary Figure 1.** Comparison of Nepal Ethnic groups with World Health Organization child growth standards/reference

|  |  |  |  |
| --- | --- | --- | --- |
| **Ethnic group** | **Height-for-Age** | **BMI-for-Age** | **MUAC-for-Age** |
| Brahmin/Chhetri (All children) | Chart, line chart  Description automatically generated | Chart, line chart  Description automatically generated | NA |
| < 5y | Chart, line chart  Description automatically generated | Chart, line chart  Description automatically generated | Chart, line chart  Description automatically generated |
| Janajati(All children)  | Chart, line chart  Description automatically generated | Chart, line chart  Description automatically generated | NA |
| < 5y  | Chart, line chart  Description automatically generated | Chart, line chart  Description automatically generated | Chart, line chart  Description automatically generated |
| Dalit (All children)  | Chart, line chart  Description automatically generated | Chart, line chart  Description automatically generated | NA |
| < 5y | Chart, line chart  Description automatically generated | Chart, line chart  Description automatically generated | Chart, line chart  Description automatically generated |
| Madhesi (All children) | Chart, line chart  Description automatically generated | Chart, line chart  Description automatically generated | NA |
| < 5y | Chart, line chart  Description automatically generated | Chart, line chart  Description automatically generated | Chart, line chart  Description automatically generated |

Abbreviations: BMI, body mass index; MUAC, mid-upper arm circumference; NA, not applicable.

**Supplementary Table 1**. Univariate Analysis of Nutritional Status and Socioeconomical Indicators

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Height-for-age Z-Score** | **BMI-for-Age Z-Score** | **MUAC-for-Age Z-Score** |
|  | **Healthy**n (%) | **Stunted**n (%) | **P value** | **Healthy/OW**n (%) | **Wasting**n (%) | **P value** | **Healthy**n (%) | **Wasting**n (%) | **P value** |
| **Ward**OutpatientInpatient  | 145 (75.9)129 (72.1) | 46 (24.1)50 (27.9) | NS | 165 (86.4)141 (78.8) | 26 (13.6)38 (21.2) | NS | 138 (81.7)112 (70.0) | 31 (18.3)48 (30.0) | 0.041 |
| **Condition**Acute Chronic | 167 (80.3)107 (66.0) | 41 (19.7)55 (34.0) | 0.008 | 182 (87.5)124 (76.5) | 26 (12.5)38 (23.5) | 0.022 | 147 (81.7)103 (69.1) | 33 (18.3)46 (30.9) | 0.019 |
| **Province**No.1BagmatiMadheshSudur-PaschimLumbiniKarnaliGandaki | 14 (70.0)72 (73.5)19 (73.1)10 (76.9)13 (72.2)5 (71.4)7 (58.3) | 6 (30.0)26 (26.5)7 (26.9)3 (23.1)5 (27.8)2 (28.6)5 (41.7) | NS | 15 (75.0)82 (83.7)18 (69.2)10 (76.9)12 (66.7)6 (85.7)10 (83.3) | 5 (25.0)16 (16.3)8 (30.8)3 (23.1)6 (33.3)1 (14.3)2 (16.7) | NS | 16 (84.2)65 (78.3)14 (56.0)7 (58.3)9 (56.3)3 (60.0)7 (58.3) | 3 (15.8)18 (21.7)11 (44.0)5 (41.7)7 (43.8)2 (40.0)5 (41.7) | NS |
| **Ethnicity**Brahmin/ChhetriJanajati DalitMadhesi | 117 (76.0)106 (76.8)28 (68.3)23 (63.9) | 37 (24.0)32 (23.2)13 (31.7)13 (36.1) | NS | 127 (82.5)125 (90.6)33 (80.5)20 (55.6) | 27 (17.5)13 (9.4)8 (19.5)16 (44.4) | <0.001 | 104 (76.5)102 (82.9)27 (73.0)16 (50.0) | 32 (23.5)21 (17.1)10 (27.0)16 (50.0) | 0.002 |
| **Wealth Indexa**Group 1 (<p25)Group 2Group 3 (>p75) | 50 (60.2)151 (77.8)73 (79.3) | 33 (39.8)43 (22.2)19 (20.7) | 0.020 | 67 (80.7)164 (84.6)74 (80.4) | 16 (19.3)30 (15.4)18 (19.6) | NS | 44 (62.0)142 (80.7)63 (77.8) | 27 (38.0)34 (19.3)18 (22.2) | 0.003 |
| **Education Levelb**< LTPSPSC to HSC> CC  | 58 (66.7)183 (75.6)33 (82.5) | 29 (33.3)59 (24.4)7 (17.5) | NS | 73 (83.9)196 (81.0)36 (90.0) | 14 (16.1)46 (19.0)4 (10.0) | NS | 52 (65.0)169 (79.7)28 (77.8) | 28 (35.0)43 (20.3)8 (22.2) | 0.029 |
| **Food Insecurity**Food SecureModerate FISevere FI | 195 (75.6)43 (68.3)36 (73.5) | 63 (24.4)20 (31.7)13 (26.5) | NS | 214 (82.9)48 (76.2)44 (89.8) | 44 (17.1)15 (23.8)5 (10.2) | NS | 177 (78.7)41 (70.7)32 (69.6) | 48 (21.3)17 (29.3)14 (30.4) | NS |

Abbreviations: BMI, body mass index; MUAC, mid-upper arm circumference; OW, overweight; NS, not significant; LTPS, less than primary school completed; PSC, primary school completed; HSC, high school completed; CC, college completed; FI, food insecure.

aWealth Index (3 categories): Group 1 = <p25, Group 2 = > p25, Group 3 = ≥p75.

bEducation level (3 categories): ≤ Less than primary school, Primary school completed to High school (or equivalent) completed, ≥ College/pre-university/University completed.

**Supplementary Table 2.** Food Insecurity Distribution as a Secondary Nutritional Parameter

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Food Insecurity****(All participants)** | **Food Insecurity****(< 5 y)** | **Food Insecurity****(≥ 5 y)** |
|  | Food Securen (%) | Moderate Food Insecurityn (%) | Severe Food Insecurityn (%) | **P value** | Food Securen (%) | Moderate Food Insecurityn (%) | Severe Food Insecurityn (%) | **P value** | Food Securen (%) | Moderate Food Insecurityn (%) | Severe Food Insecurityn (%) | **P value** |
| **Ward**OutpatientInpatient | 145 (75.9)113 (63.1) | 20 (10.5)43 (24.0) | 26 (13.6)23 (12.8) | 0.003 | 115 (78.8)73 (61.9) | 15 (10.3)30 (25.4) | 16 (11.0)15 (12.7) | 0.003 | 30 (66.7)40 (65.6) | 5 (11.1)13 (21.3) | 10 (22.2)8 (13.1) | NS |
| **Condition**AcuteChronic | 148 (71.2)110 (67.9) | 31 (14.9)32 (19.8) | 29 (13.9)20 (12.3) | NS | 123 (74.5)65 (65.7) | 21 (12.7)24 (24.2) | 21 (12.7)10 (10.1) | NS | 25 (58.1)45 (71.4) | 10 (23.3)8 (12.7) | 8 (18.6)10 (15.9) | NS |
| **Province**No.1BagmatiMadheshSudur-PaschimLumbiniKarnaliGandaki | 8 (40.0)68 (69.4)11 (42.3)10 (76.9)14 (77.8)2 (28.6)10 (83.3) | 8 (40.0)16 (16.3)9 (34.6)3 (23.1)4 (22.2)3 (42.9)2 (16.7) | 4 (20.0)14 (14.3)6 (23.1)0 (0.0)0 (0.0)2 (28.6)0 (0.0) | 0.021 | 4 (40.0)52 (73.2)5 (29.4)4 (57.1)9 (69.2)1 (25.0)7 (77.8) | 4 (40.0)10 (14.1)7 (41.2)3 (42.9)4 (30.8)2 (50.0)2 (22.2) | 2 (20.0)9 (12.7)5 (29.4)0 (0.0)0 (0.0)1 (25.0)0 (0.0) | 0.028 | 4 (40.0)16 (59.3)6 (66.7)6 (100.0)5 (100.0)1 (33.3)3 (100.0) | 4 (40.0)6 (22.2)2 (22.2)0 (0.0)0 (0.0)1 (33.3)0 (0.0) | 2 (20.0)5 (18.5)1 (11.0)0 (0.0)0 (0.0)1 (33.3)0 (0.0) | NS |
| **Ethnicity**Brahmin/ChhetriJanajatiDalitMadhesi | 122 (79.3)89 (64.5)25 (61.0)21 (58.3) | 17 (11.0) 28 (20.3)9 (22.0)9 (25.0) | 15 (9.7)21 (15.2)7 (17.0)6 (16.7) | NS | 90 (83.3)65 (63.7)18 (64.3)14 (56.0) | 9 (8.3)22 (21.6)8 (28.6)6 (24.0) | 9 (8.3)15 (14.7)2 (7.1)5 (20.0) | 0.010 | 32 (69.6)24 (66.7)7 (53.8)7 (63.6) | 8 (17.4)6 (16.7)1 (7.7)3 (27.3) | 6 (13.0)6 (16.7)5 (38.5)1 (9.1) | NS |
| **Wealth Indexa**Group 1 (<p25)Group 2Group 3 (>p75) | 37 (44.6)134 (69.1)86 (93.5) | 24 (28.9)35 (18.0)4 (4.3) | 22 (26.5)25 (12.9)2 (2.2) | < 0.001 | 26 (44.8)97 (70.3)64 (95.5) | 18 (31.0)25 (18.1)2 (3.0) | 14 (24.1)16 (11.6)1 (1.5) | < 0.001 | 11 (44.0)37 (66.1)22 (88.0) | 6 (24.0)10 (17.9)2 (8.0) | 8 (32.0)9 (16.1)1 (4.0) | 0.022 |
| **Education Levelb**≤ LTPSPSC to HSC≥ CC | 41 (47.1)178 (73.6)38 (95.0) | 22 (25.3)41 (16.9)0 (0.0) | 24 (27.6)23 (9.5)2 (5.0) | < 0.001 | 24 (50.0)138 (73.4)25 (92.6) | 11 (22.9)34 (18.1)0 (0.0) | 13 (27.1)16 (8.5)2 (7.4) | < 0.001 | 17 (43.6)40 (74.1)13 (100.0) | 11 (28.2)7 (13.0)0 (0.0) | 11 (28.2)7 (13.0)0 (0.0) | < 0.001 |

Abbreviations: NS, not significant; LTPS, less than primary school completed; PSC, primary school completed; HSC, high school completed; CC, college completed.

aWealth Index (3 categories): Group 1 = <p25, Group 2 = > p25, Group 3 = ≥p75.

bEducation level (3 categories): ≤ Less than primary school, Primary school completed to High school (or equivalent) completed, ≥ College/pre-university/University completed.