**Supplementary Appendix A: Summary of search terms used for region-specific literature reviews as informed by the Population, Interventions, Control and Outcome (PICO) framework**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Population*** | ***Intervention*** | ***Comparison*** | ***Outcome*** |
| ((adolescen\* or "school aged" or "school children" or "school child" or "school-age" or teen\*) OR (exp adolescent/) OR (exp school child/))  **AND**  (Countries OR region names) | Any intervention type (ESA, MENA, LAC), or any intervention that successfully improved nutritional status (EAP, ECA, SA, WCA) | Not required | ((anaemia OR anemia OR iron OR ferrous OR ferric OR hepcidin OR ferritin OR transferrin OR heme OR haem) OR (exp anemia/) OR ( exp iron deficiency anemia/) OR (exp megaloblastic anemia/ ) OR (exp microcytic anemia/) OR (exp macrocytic anemia/) OR (exp normochromic normocytic anemia/) OR (exp iron intake/) OR (exp iron depletion/) OR (exp iron absorption/) OR (exp iron deficiency/) OR (exp iron binding capacity/) OR (exp iron blood level/) OR (exp transferrin receptor/) OR (exp transferrin blood level/) OR (exp transferrin/ ) OR (exp hepcidin/) OR (exp ferritin/))  **OR**  (("vitamin A" OR retinol OR carotenoid\* OR xerophthalmia) OR (exp retinol/) OR (exp carotenoid/) OR (exp retinol deficiency/))  **OR**  (("vitamin D" OR "vitamins D deficiency") OR (exp vitamin D/) OR (exp vitamin D deficiency/))  **OR**  ((zinc OR "zinc deficiency") OR (exp zinc/) OR (exp zinc deficiency/))  **OR**  ((calcium OR "calcium deficiency") OR (exp calcium/) OR (exp hypercalcemia/) OR (exp hypocalcaemia/))  **OR**  ((iodine OR "iodine deficiency" OR goitre OR goiter OR "iodised salt" OR "iodized salt") OR (exp iodine deficiency/) OR (exp goiter/) OR (exp iodine/))  **OR**  ((nutritio\* OR malnutr\* OR micronutrient OR undernutr\* OR overnutr\* OR undernourish\* OR malnourish\* OR stunt\* OR "stunted growth" OR "growth failure" OR "linear growth" OR "failure to thrive" OR "growth disorder" OR "wasting" OR "wasted" OR overweight OR obes\* or "high body mass index" OR "high BMI" OR thinness) OR (exp nutritional status/) OR (exp malnutrition/) OR (exp underweight/) OR exp (exp overnutrition/) OR (exp stunting/) OR (exp growth disorder/) OR (exp failure to thrive/) OR (exp wasting syndrome/) OR (exp obesity/) OR (exp obesity management/) OR (exp diet-induced obesity/))  **OR**  ((diet OR "dietary pattern\*" OR "healthy eating" OR "healthy diet" OR "dietary diversity" OR "food recall" OR "diet recall") OR (exp dietary intake/) OR (exp dietary pattern/) |

**Supplementary Appendix B: Summary of references for all included studies according to UNICEF-defined world regions**

**East Asia and Pacific**

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**Supplementary Appendix C: Total number of studies reporting data for anthropometric indicators and anaemia in school-age children and adolescents, by country and region**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Region/country** | **Stunting** | | **Wasting** | | **Thinness** | | **Overweight and/or obesity** | | **Anaemia\*** | |
| **N (N multi-country)** | **N girls only (N multi-country)** | **N (N multi-country)** | **N girls only (N multi-country)** | **N (N multi-country)** | **N girls only (N multi-country)** | **N (N multi-country)** | **N girls only (N multi-country)** | **N (N multi-country)** | **N girls only (N multi-country)** |
| **West and Central Africa** |  |  |  |  |  |  |  |  |  |  |
| Benin | 3 |  |  |  | 2 (2) | (1) | (3) | (1) | (1) | (1) |
| Burkina Faso | 7 (1) |  | 1 |  | 5 (3) | (1) | 4 (4) | (1) | 5 (1) | (1) |
| Cameroon | 5 |  | 5 |  | 8 (1) | (1) | 4 (2) | (1) | 4 (1) | (1) |
| Cabo Verde |  |  |  |  |  |  | (1) |  |  |  |
| Chad |  |  |  |  | (1) | (1) | (2) | (1) |  |  |
| Côte d'Ivoire | 1 |  | 1 |  | 1 (1) | (1) | 1 (2) | (1) | 1 (1) | (1) |
| Democratic Republic of the Congo | 1 |  |  |  | 1 (1) | (1) | 2 (1) | (1) | 2 (1) | (1) |
| Gabon |  |  |  |  | (1) | (1) | (1) |  | (1) | (1) |
| Gambia | 2 |  |  |  | 2 (1) | (1) | 2 (2) | (1) | 1 (1) | (1) |
| Ghana | 8 (1) |  | 1 |  | 17 (4) | 1 (1) | 13 (6) | 1 (1) | 7 (1) | 1 (1) |
| Guinea |  |  |  |  | (1) | (1) | (2) | (1) | (1) | (1) |
| Guinea-Bissau | 2 |  |  |  | 2 |  | (1) |  | 1 |  |
| Liberia |  |  |  |  | (1) | (1) | (2) | (1) |  |  |
| Mali |  |  |  |  | (1) | (1) | 1 (2) | (1) | 1 (1) | (1) |
| Mauritania |  |  |  |  | (1) |  | (2) |  |  |  |
| Niger |  |  |  |  | (1) | (1) | (2) | (1) | (1) | (1) |
| Nigeria | 23 (1) |  | 10 |  | 18 (3) | 1 (1) | 54 (4) | 2 (1) | 6 |  |
| Sao Tome and Principe |  |  |  |  |  |  | (1) |  |  |  |
| Senegal | 2 |  |  |  | 1 (1) | (1) | 3 (3) | (1) | 1 (1) | (1) |
| Sierra Leone |  |  |  |  | (1) | (1) | (2) | (1) | (1) | (1) |
| Togo |  |  |  |  | (1) | (1) | 2 (1) | (1) | (1) | (1) |
| Multi-country | 1 |  |  |  | 4 |  | 6 |  | 1 |  |
| ***Region total*** | ***55*** | | ***18*** | | ***61*** | | ***92*** | | ***30*** | |
| **South Asia** |  |  |  |  |  |  |  |  |  |  |
| Afghanistan |  |  |  |  | 2 | 1 | 1 |  | 1 | 1 |
| Bangladesh | 3 |  |  |  | 15 (3) | 2 (2) | 14 (4) | 2 (2) | 2 (1) | 1 |
| Bhutan |  |  |  |  |  |  |  |  | 1 |  |
| India | 21 (2) | 4 | 2 |  | 51 (6) | 10 (3) | 63 (7) | 7 (3) | 26 (1) | 10 |
| Maldives |  |  |  |  |  |  |  |  |  |  |
| Nepal | 3 |  |  |  | 15 (2) | 3 (2) | 16 (3) | 3 (2) | 8 | 2 |
| Pakistan | 6 (2) | (1) | 1 |  | 10 | 1 | 15 | 1 | 5 | 1 |
| Sri Lanka | 5 (1) |  | 1 |  | 9 (1) |  | 9 (2) |  | 5 (1) |  |
| Multi-country | 2 | 1 |  |  | 6 | 2 | 6 | 2 | 1 |  |
| ***Region total*** | ***40*** | | ***4*** | | ***108*** | | ***124*** | | ***48*** | |
| **Eastern and Southern Africa** |  |  |  |  |  |  |  |  |  |  |
| Angola |  |  |  |  |  |  | 1 |  |  |  |
| Botswana |  |  |  |  |  |  |  |  |  |  |
| Burundi |  |  |  |  |  |  |  |  |  |  |
| Ethiopia | 18 (1*¤*) | 5 | 14 | 5 | 15 (1) | 1 | 10 (2) | 1 | 10 (2) | 3 |
| Kenya | 3 | 1 | 2 | 1 | 2 | 1 | 1 (2) |  | 2 (1) |  |
| Lesotho |  |  |  |  |  |  | 1 (1) |  |  |  |
| Madagascar | 1 |  | 1 |  | 1 |  |  |  |  |  |
| Malawi |  |  |  |  | 1 |  | (2) |  |  |  |
| Mozambique | 1 |  | 2 |  | 1 |  | 3 (1) | 2 | 2 | 2 |
| South Africa | 5 | 1 | 4 | 1 | 6 | 2 | 19 (3) | 3 | 4 (2) |  |
| Tanzania | 2 (1*¤*) |  | 2 |  | 2 (1) | 1 | 8 (3) |  | 1 |  |
| Uganda | 2 (1*¤*) |  | 2 |  | 1 (1) | 1 | 2 (3) | 1 | 3 | 1 |
| Zambia | 1 |  |  |  |  |  |  |  | 1 |  |
| Zimbabwe | 1 |  | 1 |  |  |  | 1 |  |  |  |
| Multi-country | 1 |  |  |  | 1 |  | 4 |  | 2 |  |
| ***Region total*** | ***35*** | | ***28*** | | ***30*** | | ***49*** | | ***25*** | |
| **Europe and Central Asia** |  |  |  |  |  |  |  |  |  |  |
| Albania |  |  |  |  |  |  | (2) |  |  |  |
| Azerbaijan |  |  |  |  |  |  | 1 (1) | 1 (15–49 years) | (1) | 1 (15–49 years) |
| Bosnia and Herzegovina |  |  |  |  |  |  | 1 (3) |  |  |  |
| Bulgaria |  |  |  |  |  |  | 1 (3) |  |  |  |
| Croatia |  |  |  |  |  |  | 4 (7) | 1 |  |  |
| Georgia |  |  |  |  |  |  | 1 (1) |  |  |  |
| Kazakhstan |  |  |  |  |  |  | 1 (1) |  | 3 (1) |  |
| Kosovo |  |  |  |  |  |  | 1 (1) |  |  |  |
| Macedonia | 2 |  |  |  | 2 |  | 4 (4) |  |  |  |
| Montenegro |  |  |  |  |  |  | 1 (1) |  |  |  |
| Romania |  |  |  |  | 2 |  | 5 (5) | (1) |  |  |
| Serbia | 1 |  | 1 |  | 1 |  | 6 (1) |  |  |  |
| Turkey | 5 |  | 2 |  | 17 |  | 44 (4) |  | 6 |  |
| Uzbekistan |  |  |  |  |  |  | (1) |  | (1) |  |
| Multi-country |  |  |  |  |  |  | 7 |  | 1 |  |
| ***Region total*** | ***8*** | | ***3*** | | ***22*** | | ***77*** | | ***10*** | |
| **Middle East and North Africa** |  |  |  |  |  |  |  |  |  |  |
| Algeria |  |  | 1 |  | 1 |  | 2 |  |  |  |
| Egypt |  |  |  |  | 1 |  | 3 |  |  |  |
| Iran | 1 |  | 1 |  | 2 |  | 4 |  | 2 |  |
| Iraq | 2 | 1 | 1 |  | 6 | 1 | 24 | 6 | 2 |  |
| Jordan |  |  |  |  | 1 |  | 1 (1) |  |  |  |
| Kuwait |  |  |  |  | 1 |  | 4 (1) | 1 |  |  |
| Lebanon | (1) |  | (1*¤*) |  | (1) |  | 1 (1) |  | (1) |  |
| Morocco | 1 |  |  |  |  |  | 5 |  | 1 |  |
| Oman |  |  |  |  |  |  | 4 |  |  |  |
| Qatar |  |  |  |  |  |  |  |  |  |  |
| Saudi Arabia |  |  |  |  | 1 |  | 1 |  |  |  |
| State of Palestine | 1 (1) |  | 1 (1*¤*) |  | 1 (1) |  | 10 (1) | 2 (1, boys only) | 1 (1) |  |
| Syrian Arab Republic | 2 (1) |  | (1*¤*) |  | 2 (1) |  | 4 (2) |  | 1 (1) |  |
| Tunisia |  |  |  |  |  |  | 1 |  |  |  |
| United Arab Emirates |  |  |  |  | 1 |  | 1 |  |  |  |
| Yemen |  |  |  |  |  |  | 2 |  |  |  |
| Multi-country | 1 |  | 1 |  | 1 |  | 2 |  | 1 |  |
| ***Region total*** | ***8*** | | ***5*** | | ***18*** | | ***69*** | | ***8*** | |
| **East Asia and the Pacific ¥** |  |  |  |  |  |  |  |  |  |  |
| Cambodia | 2 |  |  |  | 2 (2) | 1 | 2 (4) | 1 | 4 (1) | 1 |
| Fiji | (1) |  |  |  | 1 (3) | 1 | 3 (6) | 1 | (1) |  |
| Indonesia | 3 (1) | 1 |  |  | 7 (3) | 1 | 10 (5) |  | 7 (1) | 4 |
| Lao PDR |  |  |  |  | 1 (2) |  | 1 (4) |  | 1 (1) | 1 |
| Malaysia | 5 (1) |  |  |  | 14 (3) |  | 17 (5) |  | 3 (1) |  |
| Marshall Is. | 1 |  |  |  | 1 (1) |  | 1 (3) |  | (1) |  |
| Mongolia |  |  |  |  | (2) |  | (4) |  | (1) |  |
| Myanmar | 3 (1) | 1 |  |  | 4 (3) | 2 | 2 (5) | 1 | 2 (1) | 2 |
| Nauru | (1) |  |  |  | (3) |  | (4) |  |  |  |
| Papua New Guinea |  |  |  |  | (2) |  | (3) |  | (1) |  |
| Philippines | 1 (1) |  |  |  | 2 (3) |  | 2 (5) |  | 5 (1) |  |
| Samoa | (1) |  |  |  | 1 (3) |  | 1 (6) |  | 1 (1) |  |
| Thailand | 2 (1) | (1, boys only) |  |  | 3 (3) | (1, boys only) | 5 (4) |  | 2 (1) | (1, boys only) |
| Timor-Leste |  |  |  |  | 1 (2) |  | 1 (4) |  | 1 (1) |  |
| Tonga | (1) |  |  |  | (3) |  | 1 (6) |  | (1) |  |
| Vanuatu | 1 (1) |  |  |  | 2 (3) |  | 2 (6) |  | 1 (1) |  |
| Vietnam | 4 |  | 1 |  | 3 (2) |  | 9 (4) |  | 2 (1) |  |
| Multi-country | 1 |  |  |  | 3 |  | 7 |  | 1 |  |
| ***Region total*** | ***23*** | | ***1*** | | ***45*** | | ***63*** | | ***30*** | |
| **Latin America and the Caribbean** |  |  |  |  |  |  |  |  |  |  |
| Argentina |  |  |  |  |  |  | 1 |  | 1 |  |
| Barbados |  |  |  |  |  |  | 1 |  |  |  |
| Bolivia |  |  |  |  |  |  |  |  | 1 |  |
| Bonaire island |  |  |  |  |  |  | 1 |  | 1 |  |
| Brazil | 1 |  |  |  | 3 | 1 | 12 | 1 |  |  |
| Chile |  |  |  |  |  |  | 1 |  | 1 |  |
| Colombia | 3 |  |  |  | 2 |  | 3 |  |  |  |
| Costa Rica |  |  |  |  |  |  |  |  | 1 |  |
| Ecuador |  |  |  |  | 1 |  | 1 |  |  |  |
| Guatemala | 1 |  |  |  |  |  |  |  | 3 |  |
| Haiti | 3 |  |  |  | 2 |  | 2 |  | 4 |  |
| Mexico |  |  |  |  |  |  | 9 |  | 1 |  |
| Peru | 1 |  |  |  | 1 |  | 2 |  |  |  |
| Trinidad and Tobago |  |  |  |  |  |  | 1 |  |  |  |
| Turks and Caicos Islands |  |  |  |  | 1 |  | 1 |  |  |  |
| Uruguay |  |  |  |  |  |  |  |  | 1 |  |
| Venezuela | 1 |  | 1 |  | 1 |  | 4 |  |  |  |
| Multi-country |  |  |  |  |  |  |  |  |  |  |
| ***Region total*** | ***10*** | | ***1*** | | ***11*** | | ***39*** | | ***14*** | |

\*Includes studies that also provide data for iron deficiency and/or iron deficiency anaemia; stunting, height-for-age <-2 standard deviations (SDs) below the WHO Child Growth Reference median; wasting, weight-for-height <-2 SD below the WHO Child Growth Reference median (90); thinness, BMI-for-age <-2 SDs below the WHO Growth Reference median (90); overweight, BMI-for-age >+1 SD above the WHO Growth Reference median OR BMI-for-age expressed as ≥85th percentile of the CDC growth reference OR BMI-for-age equivalent to BMI ≥25kg/m² using International Obesity Task Force (IOTF) cut-offs by sex; obese, BMI-for- age >+2 SD above the WHO Growth Reference median OR BMI-for-age expressed as ≥95th percentile of the CDC growth reference OR BMI-for-age equivalent to BMI ≥30kg/m² using IOTF cut-offs by sex (90–92); anaemia, children <12 years (haemoglobin, Hb, <115 g/L), children 12–14 years and females 15+ years (Hb <120 g/L), males 15+ years (Hb <130 g/L); iron deficiency, serum ferritin <15µg/L; iron-deficiency anaemia, various classifications used but involve a combination of anaemia and concurrent low ferritin level (iron deficiency + Hb <120 g/L) (93); N (N multi-country) indicates the total number of articles presenting data from single-country studies (and the number of multi-country articles in which the respective country is represented); ¥ indicates that study summary includes grey literature; ¤ indicates that the article presents pooled multi-country data; ; references cited as they appear in the reference list of the main article

**Supplementary Appendix D: Range in prevalence of anthropometric indicators, anaemia and/or iron deficiency in school-age children and adolescents, by country and region**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Region/country** | **Prevalence (% range)** | | | | | | | | | |
| **Stunting** | **Wasting** | **Thinness** | **Overweight** | **Obesity** | **Overweight and obesity** | **Anaemia** | **Iron deficiency** | **Iron deficiency anaemia** |
| **West and Central Africa** |  |  |  |  |  |  |  |  |  |
| Benin | 21.8; 22.0 |  | 17.5; 39.8 | 8.3 (girls) | 0.6 | 11.2 | 57.4 (girls) |  |  |
| Burkina Faso | 8.8; 32.9 | 5.0 | 9.0; 15.1 | 5.9 (girls) | 0.6 (girls) | 2.1; 8.6 | 23.0; 40.4 |  |  |
| Cameroon | 5.3; 23.7 | 0.3; 5.5 | 0.6; 20.8 | 9.6; 12.4 | 1.9; 2.9 | 12.5; 17.8 | 5.0; 75.3 |  |  |
| Cabo Verde |  |  |  |  |  |  |  |  |  |
| Chad |  |  | 4.9 (girls) | 6.0 | 0.6 (girls) |  |  |  |  |
| Côte d'Ivoire | 61.0 |  | 13.0 | 8.0 | 1.0 |  | 41.6; 61.4 |  |  |
| Democratic Republic of the Congo | 5.8 | 26.8 | 15.5 | 12.8 (girls) | 5.0 |  | 53.9 (girls) | 33.9 | 30.0 |
| Gabon |  |  | 1.3 (girls) | 13.8 (girls) | 4.2 (girls) |  | 63.5 (girls) |  |  |
| Gambia | 9.1 |  | 19.8 | 9.2 (girls) | 2.1 (girls) | 13.3 | 35.0; 53.0 (boys), 29.0; 41.0 (girls) |  |  |
| Ghana | 3.2; 30.7 | 22.3 | 2.7; 25.7 | 3.2; 21.2 | 1.0; 11.5 | 6.0; 19.5 | 30.8; 73.0 | 4.0; 71.3 |  |
| Guinea |  |  | 2.3 (girls) | 10.2 (girls) | 1.2 (girls) |  | 47.1 (girls) |  |  |
| Guinea-Bissau | 6.4; 20.0 |  | 6.8 |  |  |  | 20.0; 42.0 |  |  |
| Liberia |  |  | 1.4 (girls) | 9.3 (girls) | 0.7 (girls) |  |  |  |  |
| Mali |  |  | 2.6 (girls) | 1.6 (boys), 3.3 (girls) | 0.9 (boys), 1.5 (girls) |  | 62.6; 63.2 |  |  |
| Mauritania |  |  | 22.3 |  | 3.4 | 24.3 |  |  |  |
| Niger |  |  | 6.3 (girls) | 4.8 (girls) | 0.9 (girls) |  | 46.0 (girls) |  |  |
| Nigeria | 0.4; 52.7 | 1.7; 10.9 | 5.6; 95.7 | 0.0; 16.4 | 0.0; 37.2 | 3.1 | 40.3; 85.5 |  |  |
| Sao Tome and Principe |  |  |  |  |  |  |  |  |  |
| Senegal | 2.0; 4.9 |  | 18.4 | 9.2; 11.0 | 1.4; 9.3 |  | 14.4 | 39.1 | 10.6 |
| Sierra Leone |  |  | 2.6 (girls) | 8.8 (girls) | 2.0 (girls) |  | 49.5 (girls) |  |  |
| Togo |  |  | 0.9 (girls) | 2.9; 5.2 | 1.7; 1.9 |  | 54.7 (girls) |  |  |
| Multi-country |  |  |  |  |  |  |  |  |  |
| ***Region total*** | **0.4; 61.0** | **0.3; 26.8** | **0.6; 95.7** | **0.0; 21.2** | **0.0; 37.2** | **2.1; 24.3** | **5.0; 85.5** | **4.0; 71.3** | **10.6; 30.0** |
| **South Asia** |  |  |  |  |  |  |  |  |  |
| Afghanistan |  |  | 9.5; 16.7\* | 10.4; 25.3\* | 2.0\* |  | 29.9 (girls) |  |  |
| Bangladesh | 19.0; 36.8 |  | 26.7; 32.6\* | 5.8; 19.2\* | 1.3\* |  | 17.1; 19.1\* | 3.9; 9.5\* | 1.3; 1.8\* |
| Bhutan |  |  |  |  |  |  | 29.3\* |  |  |
| India | 34.4\* |  | 8.2; 44.9\* | 4.9; 11.2\* | 0.6; 5.2\* |  | 23.4; 28.4\* | 16.3; 50.0 | 16.0; 28.5 |
| Maldives |  | 6.9; 34.0 | 23.4\* | 25.3\* | 2.0\* |  |  |  |  |
| Nepal | 32.7\* |  | 7.2; 30.4\* | 3.3; 14.7\* | 0.4\* |  | 31.0\* | 3.7; 43.6 |  |
| Pakistan | 13.4\* |  | 8.8; 28.8\* | 3.0; 12.7\* | 0.1; 1.3\* |  | 37.1; 70.0 | 28.9; 41.5 |  |
| Sri Lanka | 30.4\* | 30.0 | 25.1; 48.8\* | 3.8; 8.5\* | 0.4; 2.2\* |  | 19.8\* | 19.2\* | 3.9; 12.4 |
| Multi-country |  | 12.0; 22.0 |  |  |  |  |  |  |  |
| ***Region total*** | **13.4\*; 36.8** | **6.9; 34.0** | **7.2\*; 48.8\*** | **3.0\*; 25.3\*** | **0.1\*; 5.2\*** |  | **17.1; 70.0** | **3.7; 50.0** | **1.3; 28.5** |
| **Eastern and Southern Africa** |  |  |  |  |  |  |  |  |  |
| Angola |  |  |  | 17.7 |  |  |  |  |  |
| Botswana |  |  |  |  |  |  |  |  |  |
| Burundi |  |  |  |  |  |  |  |  |  |
| Ethiopia | 11.2; 57.0 | 7.1; 58.3 | 21.0; 27.1 | 4.4; 14.7 | 1.1; 13.3 |  | 10.7; 43.7 | 12.0 | 37.4 |
| Kenya | 27.0; 30.2 | 18.2 (boys), 15.6; 29.1 (girls) | 14.9 | 8.7; 14.4 | 3.1; 6.4 |  | 46.0; 53.0 | 29.0; 43.0 |  |
| Lesotho |  |  |  | 15.4 | 4.1 |  |  |  |  |
| Madagascar | 34.9 | 11.2 | 36.9 |  |  |  |  |  |  |
| Malawi |  |  | 24.4 (boys), 12.4 (girls) | 10.0 | 0.8 |  |  |  |  |
| Mozambique | 11.1 | 8.3; 12.0 |  | 12.6 (girls) |  | 11.4 | 42.4 | 32.7 |  |
| South Africa | 10.0; 37.0 | 18.3; 34.0 | 4.0; 81.0 | 4.7; 10.6 | 2.3; 3.4 |  | 13.8; 25.0 | 16.3; 27.7 | 6.0; 16.3 |
| Tanzania | 18.0; 30.7 | 4.5; 14.0 | 12.9 | 2.4; 25.0 | 4.5; 6.7 |  | 79.6 | 33.0 |  |
| Uganda | 6.6; 18.6 | 3.3; 10.1 | 5.8; 13.0 | 32.3 | 21.7 |  | 24.1; 46.0 |  |  |
| Zambia | 15.0 |  |  |  |  |  | 19.2 | 31.5 |  |
| Zimbabwe | 7.4 | 4.6 (boys), 3.6 (girls) |  |  | 11.4 |  |  |  |  |
| Multi-country |  |  |  |  |  |  |  |  |  |
| ***Region total*** | **6.6; 57.0** | **3.3; 58.3** | **4.0; 81.0** | **2.4; 32.3** | **0.8; 21.7** | **11.4** | **10.7; 53.0** | **12.0; 43.0** | **6.0; 37.4** |
| **Europe and Central Asia** |  |  |  |  |  |  |  |  |  |
| Albania |  |  |  |  |  | 28.2 (boys), 19.0 (girls) |  |  |  |
| Azerbaijan |  |  |  |  |  | 22.7 (boys), 24.7 (girls) | 6.3; 38.2 | 16.3; 34.1 | 23.8 |
| Bosnia and Herzegovina |  |  |  | 12.0 | 7.0 | 22.5 (boys), 17.7 (girls) |  |  |  |
| Bulgaria |  |  |  | 18.0 | 6.0 | 27.6 (boys), 23.2 (girls) |  |  |  |
| Croatia |  |  |  | 14.3 | 8.9 | 30.3 (boys), 20.9 (girls) |  |  |  |
| Georgia |  |  |  | 12.0 | 1.4 | 33.6 (boys), 20.8 (girls) |  |  |  |
| Kazakhstan |  |  |  | 2.3; 6.8 (boys), 3.2; 4.1 (girls) | 0.5; 0.9 (boys), 0.2; 0.8 (girls) | 17.4 (boys), 15.3 (girls) | 27.0; 32.4 | 13.0; 22.9 | 9.0 |
| Kosovo |  |  |  |  |  | 28.2 (boys), 18.9 (girls) |  |  |  |
| Macedonia | 2.0 |  | 2.0 | 1.5 | 3.2 | 29.3 (boys), 19.5 (girls) |  |  |  |
| Montenegro |  |  |  | 16.0 | 11.0 | 32.1 (boys), 22.9 (girls) |  |  |  |
| Romania |  |  | 5.4 | 6.0; 21.0 | 3.0; 11.8 | 22.9 (boys), 19.4 (girls) |  |  |  |
| Serbia | 20.0 | 4.0 | 8.0 | 17.0; 19.2 | 5.0; 6.9 | 22.7 (boys), 20.9 (girls) |  |  |  |
| Turkey | 4.4; 7.0 | 1.0 | 4.0; 26.0 | 1.5; 26.0 | 0.6; 26.0 | 28.0 (boys), 25.5 (girls) | 6.0; 41.0 | 19.0; 31.0 | 3.2; 4.0 |
| Uzbekistan |  |  |  |  |  |  | 17.0 |  |  |
| Multi-country |  |  |  |  |  |  |  |  |  |
| ***Region total*** | **2.0; 20.0** | **1.0; 4.0** | **2.0; 26.0** | **1.5; 26.0** | **0.6; 26.0** | **17.4; 33.6 (boys), 15.3; 25.5 (girls)** | **6.0; 41.0** | **13.0; 34.1** | **3.2; 23.8** |
| **Middle East and North Africa** |  |  |  |  |  |  |  |  |  |
| Algeria |  | 24.5 | 1.4; 8.8 | 22.8; 28.3 |  | 9.5 |  |  |  |
| Egypt |  |  | 8.6 (boys), 2.3 (girls) | 29.5 | 36.8 | 15.7; 28.9 (boys), 21.1; 30.7 (girls) |  |  |  |
| Iran | 34.2 | 0.9 | 3.4; 8.2 | 12.2 | 9.6; 14.9 | 21.8 | 26.0 | 9.5 |  |
| Iraq | 5.1 | 31.1 | 10.1; 23.5 | 7.5; 18.9 | 1.4; 12.5 | 5.2; 40.5 | 14.6 |  |  |
| Jordan |  |  | 12.2 |  |  | 38.8 |  |  |  |
| Kuwait |  |  | 11.0 | 24.4 (girls) | 8.9 (boys) | 30.0; 34.5 |  |  |  |
| Lebanon |  |  |  | 8.6 |  | 25.6; 50.5 (boys), 26.6; 46.5 (girls) | 18.3 | 14.2 |  |
| Morocco | 13.8 |  |  | 21.0; 34.8 | 7.5; 13.2 | 9.2; 30.2 | 18.3 |  |  |
| Oman |  |  |  | 5.1; 12.2 | 1.9; 3.6 |  |  |  |  |
| Qatar |  |  |  |  |  |  |  |  |  |
| Saudi Arabia |  |  | 8.6 (boys), 5.8 (girls) | 28.6 (boys), 18.9 (girls) | 7.9 (boys), 4.7 (girls) |  |  |  |  |
| State of Palestine | 3.4 | 5.1 | 1.9 | 12.2; 15.5 | 13.9; 27.0 | 23.1; 44.6 | 25.0 |  |  |
| Syrian Arab Republic | 7.0 |  | 3.0; 4.8 | 12.0; 24.3 | 6.0; 9.9 |  | 23.3; 30.0 |  |  |
| Tunisia |  |  |  | 18.9 | 8.6 | 19.7 (boys), 19.7 (girls) | 30.0 |  |  |
| United Arab Emirates |  |  | 4.8 | 17.4 (boys), 20.7 (girls) | 4.1 (boys), 4.4 (girls) |  |  |  |  |
| Yemen |  |  |  | 21.5 | 13.7 | 28.2 |  |  |  |
| Multi-country |  |  |  |  |  |  |  |  |  |
| ***Region total*** | **3.4; 34.2** | **0.9; 31.1** | **1.4; 23.5** | **5.1; 34.8** | **1.4; 36.8** | **5.2; 44.6** | **14.6; 30.0** | **9.5; 14.2** |  |
| **East Asia and the Pacific ¥** |  |  |  |  |  |  |  |  |  |
| Cambodia | 33.2\*; 42.5 |  | 15.0 | 2.5 | 2.2 |  | 15.1; 49.4 |  |  |
| Fiji | 6.5 |  | 0.6; 25.9 | 13.9; 40.7 | 5.2; 14.7 | 19.2 |  |  |  |
| Indonesia | 23.8; 28.0 |  | 7.2\*; 36.7 | 14.1; 28.9 | 7.9; 23.9 | 10.2; 32.6 | 14.0; 98.5 | 18.0 | 6.0; 13.5 |
| Lao PDR |  |  | 9.0 | 1.9 (boys), 6.6 (girls) | 8.4 (boys), 3.8 (girls) | 11.0; 14.0 | 42.5 |  |  |
| Malaysia | 3.5; 29.1 |  | 4.0; 22.0 | 10.9; 23.3 | 2.5; 26.5 | 23.8; 32.4 | 4.4 | 4.3 | 0.2 |
| Marshall Is. | 23.6 |  | 4.6 |  |  | 13.3 | 32.2 (boys),  24.6 (girls) |  |  |
| Mongolia |  |  | 2.0; 2.7 |  | 3.8; 7.1 (boys), 2.6; 4.7 (girls) | 10.1; 18.0 | 25.4 (boys),  23.3 (girls) |  |  |
| Myanmar | 20.6; 38.0 |  | 37.0 |  |  | 5.2 | 45.4; 59.1 (girls) |  | 35.5 |
| Nauru | 13.5 |  | 0.0; 1.0 |  |  | 44.5; 65.0 |  |  |  |
| Papua New Guinea |  |  | 1.0 |  |  | 32.0 | 24.5 (boys),  32.5 (girls) |  |  |
| Philippines | 20.3; 32.0\* |  | 11.3; 30.0\* | 9.0; 10.0 |  | 10.9 | 7.7; 12.5 |  |  |
| Samoa | 3.6 |  | 0.1; 1.0 | 32.6 | 19.3 | 51.7; 60.8 | 33.5 |  |  |
| Thailand | 7.4 |  | 7.4; 32.8 | 9.0 | 7.3 | 17.8 | 31.0 | 23.0 | 12.0 |
| Timor-Leste |  |  | 11; 21.8 |  |  | 1.7 | 19.5 (boys),  20.9 (girls) |  |  |
| Tonga | 5.7 |  | 0.2 | 13.9; 40.7 | 5.2; 21.1 | 19.2; 59.2 | 22.8 (boys),  26.4 (girls) |  |  |
| Vanuatu | 9.1 |  | 0.0; 7.1 | 11.5 | 0.4 | 0.0; 11.4 | 20.8 |  |  |
| Vietnam | 5.1; 25.4 | 5.3 | 14.0; 16.4 | 16.7; 32.2 | 5.1; 24.7 | 21.1; 22.1 | 11.4; 43.8 | 5.6; 6.3 | 0.4; 12.4 |
| Multi-country |  |  |  |  |  |  |  |  |  |
| ***Region total*** | **3.5; 42.5** | **5.3** | **0.0; 37.0** | **2.5; 40.7** | **0.4; 26.5** | **0.0; 59.2** | **4.4; 98.5** | **4.3; 23.0** | **0.2; 35.5** |
| **Latin America and the Caribbean** |  |  |  |  |  |  |  |  |  |
| Argentina |  |  |  | 23.0; 25.2 | 18.4; 18.5 |  | 4.4 |  |  |
| Barbados |  |  |  |  |  | 30.4 |  |  |  |
| Bolivia |  |  |  |  |  |  | 15.0; 21.5 |  |  |
| Bonaire island |  |  |  | 24.3 (boys), 31.9 (girls) | 9.9 (boys), 13.7 (girls) |  | 9.3 |  |  |
| Brazil | 1.7 |  | 2.1; 4.1 | 9.9; 73.0 | 3.4; 17.3 | 24.4; 42.0 |  |  |  |
| Chile |  |  |  |  | 18.5; 29.9 |  | 8.0; 11.0 |  |  |
| Colombia | 10.0; 11.3 |  | 4.4; 9.0 |  | 3.4; 23.8 | 17.6 |  |  |  |
| Costa Rica |  |  |  |  |  |  |  |  |  |
| Ecuador |  |  | 5.8 | 16.9 | 3.4 | 20.3 |  | 12.9; 13.3 |  |
| Guatemala | 14.8 |  |  |  |  |  | 51.1; 81.0 |  |  |
| Haiti | 12.2; 14.0 |  | 11.4; 14.5 | 5.1 | 1.8 |  | 3.9; 17.8 |  |  |
| Mexico |  |  |  | 16.0; 25.1 | 7.0; 28.1 | 43.0; 45.3 | 12.0 | 15.9 |  |
| Peru | 5.0 |  | <1.0 | 18.8; 28.0 | 22.7; 27.1 |  |  |  |  |
| Trinidad and Tobago |  |  |  |  |  | 23.0 |  |  |  |
| Turks and Caicos Islands |  |  | 9.1 | 17.2 | 23.6 |  |  |  |  |
| Uruguay |  |  |  |  |  |  | 47.4 |  |  |
| Venezuela | 24.0 | 9.0 | 10.0 | 9.5; 12.2 | 4.3; 37.2 | 14.1 |  |  |  |
| Multi-country |  |  |  |  |  |  |  |  |  |
| ***Region total*** | **1.7; 24.0** | **9.0** | **<1.0; 14.5** | **5.1; 73.0** | **1.8; 37.2** | **14.1; 45.3** | **3.9; 81.0** | **12.9; 15.9** |  |

Stunting, height-for-age <-2 standard deviations (SDs) below the WHO Child Growth Reference median; wasting, weight-for-height <-2 SD below the WHO Child Growth Reference median (90); thinness, BMI-for-age <-2 SDs below the WHO Growth Reference median (90); overweight, BMI-for-age >+1 SD above the WHO Growth Reference median OR BMI-for-age expressed as ≥85th percentile of the CDC growth reference OR BMI-for-age equivalent to BMI ≥25kg/m² using International Obesity Task Force (IOTF) cut-offs by sex; obese, BMI-for- age >+2 SD above the WHO Growth Reference median OR BMI-for-age expressed as ≥95th percentile of the CDC growth reference OR BMI-for-age equivalent to BMI ≥30kg/m² using IOTF cut-offs by sex (90–92); anaemia, children <12 years (haemoglobin, Hb, <115 g/L), children 12–14 years and females 15+ years (Hb <120 g/L), males 15+ years (Hb <130 g/L); iron deficiency, serum ferritin <15µg/L; iron-deficiency anaemia, various classifications used but involve a combination of anaemia and concurrent low ferritin level (iron deficiency + Hb <120 g/L) (93); prevalence range per region is based on the lowest and highest prevalence described across countries within the region for both sexes if available; references cited as they appear in the reference list of the main article