**Supplementary file 2:**

**Supplementary table S1a: Studies on diet diversity in pregnancy, infancy or childhood measured using simple count of food**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Author** | **Year** | **Foods** | **Population** | **Scoring** | **Outcome** |
| Roche2 | 2008 | 20 Traditional Foods  | Mothers and Children (3-6 years) | One point given to each unique local food in the diet reported in two 24-hour recalls, and an individual’s total food diversity score was the sum of points given. | Nutrient adequacy |
| LaChat3 | 2018 | 234 species | Women and children | Number of different species consumed by an individual from 24-hour diet recalls. Minimum cut-offs were set for species richness and diet diversity. | Nutrient adequacy  |
| Remans4 | 2011 | Number of species grown on each farm | Household/Adult women | Measured food diversity based on 17 nutrients from 77 crops during the growing season and ranked them based on level of nutrients provided by each species  | Nutritional diversity provided by species grown on farms (Household) |
| Bezerra5 | 2011 | 27 foods or groups  | Household/Adults | One point given for each of the 27 foods or food groups during a one-week period. First 4 foods/groups not considered healthy: Diet diversity score varied from 0 to 23, depending on the number of groups/foods.  | Obesity |
| Onyango 6 | 1998 | Simple foods | Toddlers | Number of different foods consumed | Anthropometry |
| Ntwenya7 | 2017 | Simple foods  | Households | Number of foods consumed per day at beginning and end of rainy season | Food diversity vs. biodiversity |

**Supplementary table S1b: Studies on diet diversity measured in pregnancy, infancy or childhood using simple count of food groups**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Author** | **Year** | **Food group** | **Population** | **Scoring** | **Outcome** |
| Jones8 | 2017 | 10 food groups based on 124 food items  | Household | One point per food group eaten over a 7 day period | Crop series richness vs. diet diversity |
| Chomat9 | 2015 | 10 predefined food groups | Pregnancy | Sum of all groups consumed eaten the day before | Resilience or increase vulnerability of the mother–infant dyad. |
| Rukundo 10 | 2016 | 12 groups consisting of 72 foods commonly eaten in Rwanda | Household/Adults | 1 point for each food group consumed in 30 days based on intake and frequency of intake, food insecurity based [ ‘never’ = 0; one to two times = 1; three to ten times = 2 and more than ten times = 3 points]. Maximum score of 33 points given if the household often reported ‘yes’ to all the eleven questions, indicative of a high level of food insecurity; total score > 0 food insecure.  | Food security  |
| Christian11 | 2016 | Household diet diversity 14 Food groups Child Adversity score Child (ASF) = 10 groups  | Household food security vs. Children (2-5 years) diet quality | One point given per food group0 = if no household member consumed any item in that food group in the past 7 days; 1 = if a member consumed something in the food group. The dietary diversity score had a maximum score of 14 (eating from all fourteen food groups). SDF: 0 = did not consume any form of ASF, maximum = 10 (consumed from all ten groups of ASF). | Socio-economic status and childhood diet quality |
| Ey Chua 12 | 2012 | 15 food groups  | Children (1-6 years) | 1 point per each food group | Anthropometry  |
| Wright 13 | 2015 | 7 food groups +/- breast feeding at birth and bimonthly till 2 year. | Infants (6-24 months) | Any consumption of 10g or more of a given food group was awarded 1 point, for a maximum of 7 points. A 10g threshold was used because a previous study in this cohort imposed this cut-off point.Foods consumed in very small quantities and improved correlations of the DDS with nutrient intake. A dietary diversity score based on seven food groups was classified as low (<4) or high (≥4). The breast- feeding variable was a dichotomous indicator (yes/no) of whether the infant was breast-fed in the past 24h, which is also the same time period of reference for the 24h dietary recall. | Length and weight for age |
| Woo14 | 2015 | 7 food groups | Infants (6-12 months) | Minimum diet diversity was defined as by 4/7; dietary intake assessed weekly with 24-hour recall from 6 – 12 months | Increase in diet diversity from 6 – 12 months |
| Chandrasekhar 15 | 2017 | 7 food groups consisting of 21 foods | Infant (6-23 months) | One point per food group for diet from the 24 hours preceding the survey. | Anthropometry  |
| Agize 16 | 2017 | 7 food groups | Children | One point given per food group. Those who fed their child with 4 or more food groups were categorised as practicing good dietary diversity (minimum acceptable diet) and below 4 groups were categorised as not practicing good dietary diversity.  | Mother's knowledge on diet diversity and child feeding vs social factors (mother's age, husbands education level, marital status) |
| Gewa 17 | 2014 | 9 food groups | Children (7 years) | 3 scoring schemes: (1) 1 point given based on 1 gram of food in food group (2) 1 point given based on 15g food in food group (3) 1 point given based on minimum required amount eaten for food eaten over the past 24 hours | Minimum intakes required  |
| Shamim 18 | 2016 | 9 food groups | Pregnancy | One point per food group eaten in past 24 hours | Sociodemographic status |
| Leroy 19 | 2008 | 9 food groups | Household diet diversity vs. child outcomes (9-36 months) | Number of 9 all-inclusive food groups used in preparing the communal household meals over a 7 day period | Intra-household allocation and gender differences |
| Msaki 20 | 2013 | Food count and count of 5 food groups | Household/Adults (15-50 years) | Number of foods or number of food groups consumed over a 14 day period | Seasonality variation in food quality.  |
| Hatloy 21 | 1998 | Counted individual foods and food groups | Children (13-58 months)  | Food Variety. simple count of food items, and Dietary Diversity Score , a count of food groups eaten over 2 or 3 days | Nutrient adequacy  |
| Mok 22 | 2017 | Seven food groups  | Infants (6-36 months) | Diet diversity score = number of food groups consumed at least once over a period of 3 days from the diet record (at 6, 9 and 12 months of age), giving a potential score between 0 and 7 | Adiposity and consumption of home cooked foods |

**Supplementary table S1c: Studies on diet diversity measured in pregnancy, infancy or childhood using count of foods within food groups**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Author** | **Year** | **Foods within good group** | **Population** | **Scoring** | **Outcome** |
| Hatloy 23 | 2000 | The food variety score (FVS) was the number of food items from the list of 104 food items. Diet diversity score: the number of food groups consumed  | Household and Children (6-59 months) | FVS, where high > 18, medium = 14-18 and low 4-13 food items. The DDS was divided into tertiles, which gave the categories: high = **3**=8, medium=6-7 and low = 2-5. Based on food intake the previous day and the week before | Anthropometry |
| Motbainor 24 | 2015 | The number of food items grouped into specific food groups  | Mother and Infants (0-35 months) | Number of different foods or food groups consumed over 24 hours  | Stunting and underweight  |

**Supplementary table S1d: Studies on diet diversity measured in pregnancy, infancy or childhood and used within an index**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Author** | **Year** | **Within an index** | **Population** | **Scoring** | **Outcome** |
| Vadiveloo 25  | 2014 | 5 food groups weighted based on health values used in a modified Berry Index | Household | US house hold food diversity (HFD) index giving a score between zero and 1 based on 24 hour recall | Weight control |

2. Roche ML, Creed-Kanashiro HM, Tuesta I, et al. Traditional food diversity predicts dietary quality for the Awajun in the Peruvian Amazon. *Public Health Nutrition* 2008;11(5):457-65.

3. Lachat C, Raneri JE, Smith KW, et al. Dietary species richness as a measure of food biodiversity and nutritional quality of diets. *Proceedings of the National Academy of Sciences of the United States of America* 2018;115(1):127-32. doi: <https://dx.doi.org/10.1073/pnas.1709194115>

4. Remans R, Flynn DF, DeClerck F, et al. Assessing nutritional diversity of cropping systems in African villages. *PLoS ONE [Electronic Resource]* 2011;6(6):e21235. doi: <https://dx.doi.org/10.1371/journal.pone.0021235>

5. Bezerra IN, Sichieri R. Household food diversity and nutritional status among adults in Brazil. *International Journal of Behavioral Nutrition & Physical Activity* 2011;8:22. doi: <https://dx.doi.org/10.1186/1479-5868-8-22>

6. Onyango A, Koski KG, Tucker KL. Food diversity versus breastfeeding choice in determining anthropometric status in rural Kenyan toddlers. *Int J Epidemiol* 1998;27(3):484-9.

7. Ntwenya JE, Kinabo J, Msuya J, et al. Rich Food Biodiversity Amid Low Consumption of Food Items in Kilosa District, Tanzania. *Food Nutr Bull* 2017;38(4):501-11. doi: <https://dx.doi.org/10.1177/0379572117708647>

8. Jones AD. On-Farm Crop Species Richness Is Associated with Household Diet Diversity and Quality in Subsistence- and Market-Oriented Farming Households in Malawi. *J Nutr* 2017;147(1):86-96. doi: <https://dx.doi.org/10.3945/jn.116.235879>

9. Chomat AM, Solomons NW, Koski KG, et al. Quantitative Methodologies Reveal a Diversity of Nutrition, Infection/Illness, and Psychosocial Stressors During Pregnancy and Lactation in Rural Mam-Mayan Mother-Infant Dyads From the Western Highlands of Guatemala. *Food Nutr Bull* 2015;36(4):415-40. doi: <https://dx.doi.org/10.1177/0379572115610944>

10. Rukundo PM, Andreassen BA, Kikafunda J, et al. Household food insecurity and diet diversity after the major 2010 landslide disaster in Eastern Uganda: a cross-sectional survey. *Br J Nutr* 2016;115(4):718-29. doi: <https://dx.doi.org/10.1017/S0007114515004961>

11. Christian AK, Marquis GS, Colecraft EK, et al. Caregivers' nutrition knowledge and attitudes are associated with household food diversity and children's animal source food intake across different agro-ecological zones in Ghana. *Br J Nutr* 2016;115(2):351-60. doi: <https://dx.doi.org/10.1017/S0007114515004468>

12. Ey Chua EY, Zalilah MS, Ys Chin YS, et al. Dietary diversity is associated with nutritional status of Orang Asli children in Krau Wildlife Reserve, Pahang. *Malays* 2012;18(1):1-13.

13. Wright MJ, Bentley ME, Mendez MA, et al. The interactive association of dietary diversity scores and breast-feeding status with weight and length in Filipino infants aged 6-24 months. *Public Health Nutrition* 2015;18(10):1762-73. doi: <https://dx.doi.org/10.1017/S1368980015000427>

14. Woo JG, Herbers PM, McMahon RJ, et al. Longitudinal Development of Infant Complementary Diet Diversity in 3 International Cohorts. *Journal of Pediatrics* 2015;167(5):969-74.e1. doi: <https://dx.doi.org/10.1016/j.jpeds.2015.06.063>

15. Chandrasekhar S, Aguayo VM, Krishna V, et al. Household food insecurity and children's dietary diversity and nutrition in India. Evidence from the comprehensive nutrition survey in Maharashtra. *Matern Child Nutr* 2017;13(2) doi: <https://dx.doi.org/10.1111/mcn.12447>

16. Agize A, Jara D, Dejenu G. Level of Knowledge and Practice of Mothers on Minimum Dietary Diversity Practices and Associated Factors for 6-23-Month-Old Children in Adea Woreda, Oromia, Ethiopia. *Biomed Res Int* 2017;2017:7204562. doi: <https://dx.doi.org/10.1155/2017/7204562>

17. Gewa CA, Murphy SP, Weiss RE, et al. Determining minimum food intake amounts for diet diversity scores to maximize associations with nutrient adequacy: an analysis of schoolchildren's diets in rural Kenya. *Public Health Nutrition* 2014;17(12):2667-73. doi: <https://dx.doi.org/10.1017/S1368980014000469>

18. Shamim AA, Mashreky SR, Ferdous T, et al. Pregnant Women Diet Quality and Its Sociodemographic Determinants in Southwestern Bangladesh. *Food Nutr Bull* 2016;37(1):14-26. doi: <https://dx.doi.org/10.1177/0379572116632137>

19. Leroy JL, Razak AA, Habicht JP. Only children of the head of household benefit from increased household food diversity in northern Ghana. *J Nutr* 2008;138(11):2258-63. doi: <https://dx.doi.org/10.3945/jn.108.092437>

20. Msaki MM, Hendriks SL. Do food quality and food quantity talk the same? Lesson from household food security study in Embo, South Africa. *Journal of the American College of Nutrition* 2013;32(3):165-76. doi: <https://dx.doi.org/10.1080/07315724.2013.797859>

21. Hatloy A, Torheim LE, Oshaug A. Food variety--a good indicator of nutritional adequacy of the diet? A case study from an urban area in Mali, West Africa. *Eur J Clin Nutr* 1998;52(12):891-8. [published Online First: 1999/01/09]

22. Mok E, Vanstone CA, Gallo S, et al. Diet diversity, growth and adiposity in healthy breastfed infants fed homemade complementary foods. *International Journal of Obesity* 2017;41(5):776-82. doi: <https://dx.doi.org/10.1038/ijo.2017.37>

23. Hatloy A, Hallund J, Diarra MM, et al. Food variety, socioeconomic status and nutritional status in urban and rural areas in Koutiala (Mali). *Public Health Nutr* 2000;3(1):57-65. [published Online First: 2000/04/29]

24. Motbainor A, Worku A, Kumie A. Stunting Is Associated with Food Diversity while Wasting with Food Insecurity among Underfive Children in East and West Gojjam Zones of Amhara Region, Ethiopia. *PLoS ONE [Electronic Resource]* 2015;10(8):e0133542. doi: <https://dx.doi.org/10.1371/journal.pone.0133542>

25. Vadiveloo M, Dixon LB, Mijanovich T, et al. Development and evaluation of the US Healthy Food Diversity index. *Br J Nutr* 2014;112(9):1562-74. doi: <https://dx.doi.org/10.1017/S0007114514002049>