Household average dietary energy acquisition or consumption

Overview

Household average dietary energy consumption per capita is an indicator that estimates calorie consumption based on the total amount of food acquisition or consumption by the household. Consuming an adequate number of calories is necessary (but not sufficient) for proper growth, development, and cognitive and physical functioning. Trends in household average per capita energy acquisition or consumption can provide early warnings of where there may be problems for population-level undernutrition or overweight/obesity for specific regions within a country or for the country as a whole. This indicator is different from the simpler indicator dietary energy supply [1], which cannot be disaggregated at a sub-national level and uses Food Balance Sheet [2] (FBS) data to determine the calories per capita available at a national level.

Method of Construction

To construct this indicator, existing Household Consumption and Expenditure Surveys [3] [4](HCES) data can be analyzed with a statistical software program (e.g. Stata or R). Each household's reported acquisition or consumption of foods is converted into dietary energy (kcals) by matching individual foods with a Food Composition Table. The total quantity of calories is determined by accounting for the portion purchased or consumed, divided by the total number of members in that household. If data are collected over a number of days or if recall periods cover more than one day, the above calculation must also be divided by the number of days of collection in order to generate the number of calories/person/day.

An alternative option to the basic per capita measure, is to use the Adult Male Equivalent (AME). The AME method takes account of the household size and composition (age, sex, and physical activity level) and assumes that the distribution of food within the household is in direct proportion to the biological requirement of each individual based on a specific physical activity level. Using a multiple of the AME to account for all members of the household provides a more accurate picture of households of different sizes and compositions than just using the per capita measure (Weisell & Dop, 2012 [5]). Table 9 on page 82 of the following International Food Policy Research Institute (IFPRI) document provides guidelines for benchmarking per capita calorie consumption in categories ranging from very low to very high (Smith & Subandoro, 2007 [6]).

This indicator is one of several indicators included in the ADePT-FSM [7] (Food Security Module) software package, which is a free standalone software developed by the Food and Agriculture Organization (FAO) and the World Bank that allows users to easily derive food security indicators from household survey data. The software download and corresponding documentation can be found on the FAO website [7]. Please also see the Moltedo et al. [8] (2014) book published by the World Bank, which provides detailed instructions for analyzing food security using household survey data (see pages 35 and 36).

Uses

This measure of diet quantity provides an understanding of the energy available to a household, and can be used to assess the food insecurity (quantity dimension, caloric sufficiency), of a population in order to design appropriate interventions (Smith & Subandoro, 2007 [6]). This indicator, and others relying on HCES [3] data, can be a good option when more granular data, such as individual-level dietary data, are not available. As this is an average per capita estimate based on data collected at the household level and is not based on individual-level data, it cannot be used for individual targeting or used to assess population sub-groups, such as pregnant and lactating women or young children.

Strengths and Weaknesses

This indicator is designed for use with HCES [3], and using the ADePT-FSM [7] software package can ease some of the challenges of using household-level data for less experienced analysts. However, this indicator only estimates acquisition or consumption of dietary energy, and does not provide insight into nutrient adequacy or overall health of diet (Smith, 2002 [9]; Claro et al., 2010 [10]).

Data Source

HCES [3] data can be used to calculate this indicator. The World Bank Microdata Library [11] has the most comprehensive and publicly accessible repository of data (World Bank Microdata Library [11]). Otherwise, data can be accessed—often for a fee—from the National Statistics Office, though each country has its own policies and procedures. The International Household Survey Network (IHSN [12]) is an informal network to promote data standards and dissemination. National or regional Food Composition Tables should be used to identify the nutrient contents of the foods and can be found at the Food and Agriculture's (FAO) International Network of Food Data Systems [13] (INFOODS [13]) or the International Life Science Institute's (ILSI) World Nutrient Databases for Dietary Studies (WNDDS [14]). In addition, Food Balance Sheet [2] (FBS) data could be used to calculate a similar indicator, such as dietary energy supply [1]. Alternatively, 24-hour Dietary Recall [15] or Weighed Food Records [16] could be used to calculate total individual energy intake [17].

Links to guidelines

- Smith and Subandoro, (2007). "Measuring food security using household expenditure surveys" [6]
- Moltedo et al., (2014). "Analyzing food security using household survey data" [18]

Links to illustrative analyses

- Claro et al., (2010). "Per capita versus adult-equivalent estimates of calorie availability in household budget surveys" [10]
- Smith et al., (2006). "Food insecurity in Sub-Saharan Africa: New estimates from household expenditure surveys" [19]

Food Security Dimensions

- Quantity [21]

Data Collection Levels

- Household [22]

Data Sources and Methods

- Household Consumption and Expenditure Surveys (HCES)
- Food Composition Databases

Requires Food Composition Database

- Yes [23]

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