



Household Dietary Diversity Score (HDDS)

Overview

The Household Dietary Diversity Score (HDDS) was released in 2006 as part of the FANTA II Project as a population-level indicator of household food access. Household dietary diversity can be described as the number of food groups consumed by a household over a given reference period, and is an important indicator of food security for many reasons. A more diversified household diet is correlated with caloric and protein adequacy, percentage of protein from animal sources, and household income ([Swindale & Bilinsky, 2006](#) [1]). The HDDS indicator provides a glimpse of a household's ability to access food as well as its socioeconomic status based on the previous 24 hours ([Kennedy et al., 2011](#) [2]).

Method of Construction

The following 12 food groups are used to calculate the HDDS indicator:

A. Cereals

- B. Roots and tubers
- C. Vegetables
- D. Fruits
- E. Meat, poultry, offal
- F. Eggs
- G. Fish and seafood
- H. Pulses, legumes, nuts
- I. Milk and milk products
- J. Oil/fats
- K. Sugar/honey
- L. Miscellaneous

Each food group is assigned a score of 1 (if consumed) or 0 (if not consumed). The household score will range from 0 to 12 and is equal to the total number of food groups consumed by the household:

$$\text{HDDS} = \text{Sum} (A + B + C + D + E + F + G + H + I + J + K + L)$$

The average household dietary diversity score for the population of study can be calculated as follows:

$$\frac{\text{Sum (HDDS)}}{\text{Total number of households surveyed}}$$

If using data that were not initially collected using the HDDS questions, such as [Household Consumption and Expenditure Surveys](#) [3] (HCES) data, the food items must be regrouped according to the 12 HDDS groups to calculate the indicator. Although there is no universal cut-off or target level that indicates that a household is sufficiently diverse, FANTA suggests two alternatives for using this indicator in a performance reporting context. One option is to use the dietary diversity patterns of wealthier households as a target (the richest 33%), which requires the

assumption that poorer households will increase their dietary diversity as their incomes rise. A second option is to establish a target using the average dietary diversity of the 33% of households with the highest diversity. For more information on how to set these targets, see [Swindale & Bilinsky \(2006\)](#) [1].

Uses

The HDDS is a population-level indicator that is used as a proxy measure of household food access ([Swindale & Bilinsky, 2006](#) [1]).

Unlike measures of dietary diversity collected at the individual level (e.g. [Minimum Dietary Diversity for Women](#) [4] [MDD-W] and [Minimum Dietary Diversity](#) [5] [MDD] for children 6-23 months), this indicator has not been validated as a proxy for adequacy of specific macronutrients or micronutrients. If the primary concern or research objective is to assess nutrient adequacy of the population, then dietary diversity should be collected using dietary diversity indicators at the individual, not household, level (e.g. [MDD-W](#) [4] and [MDD](#) [5]). However, if the objective is to assess economic access to food, or to estimate which food groups households are consuming, then the household-level indicator is a more appropriate measure ([Food and Agriculture Organization \[FAO\], 2011](#) [2]). Because household dietary diversity generally increases as income increases, this indicator is sometimes used as a proxy for the access dimension of food insecurity, and is one of the indicators frequently used to assess how interventions designed to increase household income have affected food consumption ([Swindale & Bilinsky, 2006](#) [1]).

The HDDS can be used in conjunction with other indicators of food security status (e.g. [Household Food Insecurity Access Scale](#) [6] [HFIAS]) to understand household access to certain food groups ([Cafiero et al., 2014](#) [7]). The components of the indicator can also be used to examine dietary patterns (e.g., what percentage of households consume any type of animal source foods?). This indicator is required for all USAID Food for Peace (FFP) projects and must be collected at the projects' baseline and endline to assess the resilience of vulnerable communities and households ([USAID, 2017](#) [8]). FAO also uses this indicator and developed a set of guidelines for its use in different contexts ([FAO, 2011](#) [2]).

The HDDS and [Food Consumption Score](#) [9] (FCS) are highly correlated and can be used interchangeably as a measure of household-level diet diversity and as a validated proxy for energy sufficiency in most contexts ([Maxwell et al., 2013](#) [10]); however, neither of these indicators has been validated as a proxy for micronutrient adequacy. Therefore, before they are used to proxy nutrient adequacy they require further validation ([Leroy et al., 2015](#) [11]). Since the HDDS and FCS provide very similar information, the selection of one over the other can often be driven by the need for comparability with other surveys or by institutional preference. In other words, if an organization or individual is interested in comparing their results to those of a World Food Programme survey, it makes sense to collect the FCS, while a comparison with other surveys may be more appropriately based on the HDDS, if the HDDS had been used previously.

Strengths and Weaknesses

One strength of the HDDS is that the standardized questions are simple and can be easily understood by both enumerators and respondents, and the full set of questions usually takes less than 10 minutes per respondent ([Swindale & Bilinsky, 2006](#) [1]). However, the standardized questionnaire provided by the [2011 FAO guidelines](#) [2] is not culture or population specific, so it should be adapted appropriately in adherence with the guidelines before use in a specific context ([Kennedy et al., 2011](#) [2]). For example, while the standard module does not explicitly ask about consumption of food away from home, enumerators could be trained to probe about additional foods consumed outside the home.

A drawback of the HDDS is that, because data are collected at the household level, it does not provide any information on the consumption of different food groups or overall dietary diversity by individuals in the household. Accordingly, the HDDS does not provide any information on intra-household food distribution. As mentioned above,

the indicator has not been validated against any standard of adequacy to allow a judgement on what number of food groups constitute a "sufficiently diverse," versus "not sufficiently diverse" diet at the household level. There is no universally accepted cut-off for this indicator that could separate households that have a "sufficiently diverse" diet from those that do not.

Data Source

The source of data for the HDDS is based on a recall of food groups consumed by the household in the previous 24 hours, reported by the person primarily responsible for food preparation in the household. Other data sources can often be used to construct the HDDS indicator, including [24-hour Dietary Recall](#) [12], [Food Frequency Questionnaires](#) [13] (FFQs), and [Household Consumption and Expenditure Survey](#) [3] (HCES) data, where information on food consumption is collected through a fixed list of foods or food groups.

Links to guidelines

- [Swindale and Bilinsky, \(2006\). "Household Dietary Diversity Score \(HDDS\) for Measurement of Household Food Access: Indicator Guide"](#) [1]
- [Kennedy et al., \(2011\). "Guidelines for Measuring Household and Individual Dietary Diversity"](#) [2]

Links to validation studies

- [Hoddinott and Yohannes, \(2002\). "Dietary Diversity as a Household Food Security Indicator"](#) [14]

Links to illustrative analyses

- [Jones et al., \(2014\). "Farm production diversity is associated with greater household dietary diversity in Malawi: Findings from nationally representative data."](#) [15]
- [Olney et al., \(2015\). "A 2-year integrated agriculture and nutrition health behavior change communication program targeted to women in Burkina Faso"](#) [16]

Expert review conducted by:

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Food Security Dimensions

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Data Collection Levels

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Data Sources and Methods

- [Dietary Diversity](#)
- [24-Hour Dietary Recall \(24HR\)](#)
- [Household Consumption and Expenditure Surveys \(HCES\)](#)
- [Food Frequency Questionnaire \(FFQ\)](#)

Requires Food Composition Database

- [No](#) [21]

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