



Minimum Dietary Diversity for Women (MDD-W)

Overview

The Minimum Dietary Diversity for Women (MDD-W) is a population-level indicator of diet diversity validated for women aged 15-49 years old. The MDD-W is a dichotomous indicator based on 10 food groups and is considered the standard for measuring population-level dietary diversity in women of reproductive age. The MDD-W was preceded by the Women's Dietary Diversity Score (WDDS), which was a validated continuous indicator based on reported intake of 9 food groups. The MDD-W was developed after additional validation using new data sets was carried out and with the objective of creating a dichotomous (easier to interpret) indicator rather than a continuous one ([FAO & FHI, 2016](#) ^[1]).

According to the MDD-W, women who have consumed at least 5 of the 10 possible food groups over a 24-hour recall period are classified as having minimally adequate diet diversity. The Food and Agriculture Organization (FAO) and the United States Agency of International Development (USAID) both recommend the use of the MDD-W when a categorical indicator of individual dietary diversity for women is needed. These organizations also recommend using the 10-food group dietary diversity indicator if a continuous variable is desired. To further understand the differences between the dichotomous dietary diversity indicator and the continuous dietary diversity indicator, both based on 10 food groups, please see [FAO & FHI \(2016\)](#) ^[1].

Method of Construction

Data are gathered from a questionnaire administered to a female respondent 15-49 years of age. Respondents are asked to recall the food groups that they consumed over the previous 24 hours using either a list-based method (which asks about consumption of each of the 10 food groups in order), or an open recall (where respondents recall all foods they ate during the previous day and the enumerator determines to which food groups these foods belong). Although the MDD-W guidelines present both recall methods, they recommend the use of the open-recall method ([FAO & FHI, 2016](#) ^[1]). The 10 food groups required for the MDD-W are:

MDD-W Food Groups

1.	Grains, roots, and tubers
2.	Pulses
3.	Nuts and seeds
4.	Dairy
5.	Meat, poultry, and fish
6.	Eggs
7.	Dark leafy greens and vegetables

Other Vitamin A-rich fruits and
8. vegetables

9.	Other vegetables
10.	Other fruits

The enumerators should record whether the respondent did, or did not, consume foods within each food group. The total number of food groups consumed is summed and all foods are equally weighted. The population-level indicator is calculated based on the following formula:

$$\frac{\text{Women 15-49 years of age who consumed foods from 5 food groups during the previous day}}{\text{Total number of women 15-49 years of age surveyed}}$$

For more information on calculating this indicator, refer to FAO's measurement guidelines ([FAO & FHI, 2016](#) [1]).

Uses

Indicators of women's diet diversity have been shown to be strongly and positively correlated with micronutrient adequacy of the diet in cross-country analyses using data from several low-income countries ([Arimond et al., 2010](#) [2]). Micronutrient adequacy is one important element of diet quality, thus, the MDD-W can be used as a proxy for this aspect of diet quality. The survey is administered on an individual level, but the resulting indicator is appropriate only for population-level (not individual-level) targeting. It can be used to monitor and evaluate programs that seek to improve diet quality in resource-constrained settings. The MDD-W can be used to calculate and report prevalence, making it a simple and easy to understand tool that is useful for communication and advocacy materials, particularly for non-nutrition audiences ([Arimond, 2016](#) [3]; [FAO & FHI, 2016](#) [1]).

Strengths and Weaknesses

One advantage of MDD-W is that it is simple to collect, tabulate, and interpret. The results are easy to communicate (i.e. either households achieve minimally adequate diversity or not). Additionally, the threshold for adequacy is standardized which enables comparisons across time and space. However, the tool must be adapted to include culturally relevant examples of foods for each of the 10 food groups. Enumerators must be properly trained to correctly categorize meals containing a mix of different food groups, and to record only food groups where more than 15 grams of a food in that group was consumed, in order to exclude nutritionally less relevant foods used as condiments or seasonings from the total score ([FAO & FHI, 2016](#) [1]). A strength of the MDD-W is its simplicity as a measure of a key aspect of diet quality, but it remains only a rough proxy for nutrient adequacy. Individuals interested in a more precise estimate of nutrient intake and adequacy should consider conducting a quantitative [24-hour Dietary Recall](#) [4] instead.

Data Source

The MDD-W is based on the recall of food groups consumed in the previous 24-hours by the respondent. Quantitative [24-hour recall](#) [4] data, in which the respondent describes everything that was eaten during the previous day along with the amount consumed, can also be used though it provides much more detailed information than is needed to calculate the MDD-W. Therefore, it can be useful, but not essential, for constructing the MDD-W.

Links to guidelines

- [FAO and FHI, \(2016\). "Minimum dietary diversity for women: a guide for measurement"](#) [1]

Links to validation studies

- [Arimond et al., \(2010\). "Simple food group diversity indicators predict micronutrient adequacy of women?s diets in 5 diverse, resource-poor settings"](#) [2]
- [Martin-Prevel et al., \(2015\). "Moving forward on choosing a standard operational indicator of women?s dietary diversity"](#) [5]

Links to illustrative analyses

- [Custodio et al., \(2016\). "Exploring the new indicator Minimum Dietary Diversity - Women"](#) [6]
- [Osman et al., \(2016\). "A comparison of pregnancy outcomes in Ghanaian women with varying dietary diversity: a prospective cohort study protocol"](#) [7]
- [Saaka et al., \(2017\). "Dietary diversity is not associated with haematological status of pregnant women resident in rural areas of Northern Ghana"](#) [8]
- [Gebremedhin et al., \(2017\). "Predictors of dietary diversity in children ages 6-23 mo in largely food-insecure area of South Wollo, Ethiopia"](#) [9]

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Food Security Dimensions

- [Quality](#) [11]

Data Collection Levels

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Data Sources and Methods

- [Dietary Diversity](#)
- [Food Frequency Questionnaire \(FFQ\)](#)
- [24-Hour Dietary Recall \(24HR\)](#)
- [Weighed Food Record \(WFR\)](#)

Requires Food Composition Database

- [No](#) [13]

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