Minimum Acceptable Diet (MAD)

Overview

The Minimum Acceptable Diet (MAD) for children 6-23 months old, is one of eight core indicators for assessing infant and young child feeding (IYCF) practices developed by the WHO and finalized at the World Health Organization (WHO) Global Consensus Meeting on Indicators of Infant and Young Child Feeding in 2007. These eight indicators were developed to provide simple, valid, and reliable metrics for assessing the many aspects of IYCF that are of interest at the population level (WHO, 2008 [1]). The other seven indicators are: early initiation of breastfeeding; exclusive breastfeeding under 6 months; continued breastfeeding at 1 year; introduction of solid, semi-solid, or soft foods; minimum dietary diversity; minimum meal frequency; and consumption of iron-rich or iron-fortified foods. The MAD indicator is a composite indicator composed of the Minimum Dietary Diversity [2] (MDD) and Minimum Meal Frequency.

Method of Construction

This indicator is calculated separately for breastfed and non-breastfed children and includes information on two components:

Minimum Dietary Diversity [2]: Breastfed child consumed foods from 5 out of 8 of the food groups during the previous day. See the MDD [2] indicator for infants and young children for more information on the food groups and how the indicator is calculated.

Minimum meal frequency: Child receives solid, semi-solid, or soft foods (but also includes milk for non-breastfed children) the minimum number of times or more over the previous day. (See the WHO 2008 [1] reference for more detailed information on this indicator). The minimum number of times are:

* 2 times for breastfed infants 6-8 months
* 3 times for breastfed children 9-23 months
* 4 times for non-breastfed children 6-23 months

To calculate the indicator, information on breastfed and non-breastfed children is combined by adding the following two fractions:

Breastfed children 6-23 months of age who had at least the MDD and the minimum meal frequency during the previous day / Breastfed children 6-23 months of age

AND

Non-breastfed children 6-23 months of age who received at least 2 milk feedings and had at least the MDD not including milk feeds and the minimum meal frequency during the previous day / Non-breastfed children 6-23 months of age

Note: The WHO recommends that this indicator be further disaggregated and reported for the following age groups: 6-11 months, 12-17 months, and 18-23 months of age (WHO, 2008 [1]).

Uses

The MAD, along with the other seven IYCF indicators, was developed for assessment at the population level in order to make comparisons across and within countries, to describe trends over time, to target/identify populations at risk, target interventions, make policy decisions about resource allocation, and serve as an impact measure when monitoring and evaluating IYCF programs. Because the MAD indicator captures multiple dimensions of feeding, it can be used for comparisons across populations with different rates of continued breastfeeding or be presented by breastfed and non-breastfed children (WHO, 2008 [1]).

Strengths and Weaknesses

One advantage of this indicator is that it is relatively simple to calculate and interpret and is applicable across sociocultural contexts. It is also applicable for both breastfed and non-breastfed children. Analyses have shown that the MAD indicator is associated with child anthropometric status, particularly stunting (Jones et al., 2013 [3]). However, a weakness of this indicator is that it does not provide quantitative information about children's food and nutrient intake. The indicator was designed to capture optimal complementary feeding patterns (based on WHO recommendations), but it was not designed to capture excessive intake of energy, sugar, or fat that would yield information about risks for overweight and obesity (Lele et al., 2016 [4]).

Data Source

The MAD indicator can be constructed from a short Food Frequency Questionnaire [5] (FFQ) style module administered to the child's caretaker, usually as part of the IYCF module. Example questionnaires can be found in the WHO (2008) Indicators for assessing infant and young child feeding practices [6] document, which includes: 1) a household roster, 2) an initiation of breastfeeding module, and 3) an IYCF module. This indicator is also available for many countries in the United Nations International Children's Emergency Fund's (UNICEF) Infant and Young Child Feeding Database [7] and is collected as part of many Demographic and Health Surveys [8] (DHS).

Links to guidelines

- WHO, (2008). "Indicators for assessing infant and young child feeding practices (Part 1 Definitions)" [1]
- WHO, (2010). "Indicators for assessing infant and young child feeding practices (Part 2 Measurement)" [6]
- WHO/UNICEF (2017). "Global Nutrition Monitoring Framework: Operational guidance for tracking progress in meeting targets for 2025" [9]

Links to validation studies

- Dewey, (2006). "Developing and validating simple indicators of complementary food intake and nutrient density for breastfed children in developing countries" [10]

Links to illustrative analyses

- Joshi et al., (2011). "Determinants of inappropriate complementary feeding practices in young children in Nepal: Secondary data analysis of Demographic and Health Survey 2006" [11]
- Jones et al., (2013). "World Health Organization infant and young child feeding indicators and their associations with child anthropometry: A synthesis of recent findings" [3]

Expert review conducted by:

- Dr. Marie Ruel, Director of Poverty, Health and Nutrition Division, International Food Policy Resarch Institute (IFPRI)

Food Security Dimensions

- Quantity [13]
- Quality [14]

Data Collection Levels

- Individual [15]

Data Sources and Methods

- Dietary Diversity
- Demographic and Health Surveys (DHS) & Multiple Indicator Cluster Surveys (MICS)
- Food Frequency Questionnaire (FFQ)

Requires Food Composition Database

- No [16]

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