Data for Infant and Young Child Feeding and Minimum Dietary Diversity for Women: Understanding New Guidelines, Evidence, and Survey Tools

JUNE 14, 2022
Chris Vogliano is a Technical Advisor with the Food Systems team at USAID Advancing Nutrition. Chris Vogliano is a public health dietitian who is working to further link the fields of agriculture, nutrition and health to advance sustainable food systems in low, middle, and high income countries. Chris has given over 80 academic presentations both domestically and internationally, published numerous peer-reviewed research publications, and has previously served as research fellows for The Academy of Nutrition and Dietetics and Bioversity International.
Data for Infant and Young Child Feeding and Minimum Dietary Diversity for Women: Understanding New Guidelines, Evidence, and Survey Tools

JUNE 14, 2022
Vrinda Mehra is a physician and public health professional with expertise in data, analysis and monitoring of child nutrition. As a Statistics Specialist within the Division of Data, Analytics, Planning and Monitoring at UNICEF, Vrinda has led the development, expansion and maintenance of UNICEF’s global databases on Infant and Young Child Feeding and contributed to methodological work in this area including the updated guidance on IYCF indicators. Before UNICEF, Vrinda has worked with academic universities where she supported the evaluation of maternal, newborn, child health and nutrition projects and published several papers.
Global guidance update:
Indicators for assessing infant and young child feeding practices

June 14, 2022

UNICEF
Data & Analytics Section
Outline

• Background

• Recommended infant and young child feeding (IYCF) indicators
  - Indicators retained with no change
  - Indicators deleted
  - Revised indicators
  - New recommended indicators

• Guidance on data collection
Methodological Advancement

IYCF Guide update: Background

IYCF Technical consultation in 2017 and 2018

- Re-evaluated the 2008 indicators
- Proposed additional breastfeeding and complementary feeding indicators

Following the consultations, **17 IYCF indicators recommended** for inclusion in IYCF guide published in April 2021.
Methodological Advancement
IYCF Guide update

The guidance includes

❖ Indicator definitions
❖ Data collection methodology
❖ Standard recommended questionnaires
❖ Details on selecting and training interviewers
❖ Analytical codes
Methodological Advancement
IYCF Guide update: Indicators retained with no change

- Children ever breastfed
- Early initiation of breastfeeding
- Exclusive breastfeeding under 6 months
- Bottle feeding
- Minimum milk feeding frequency for non-breastfed children
- Introduction to solid, semi-solid and soft foods
Methodological Advancement

IYCF Guide update: Indicators deleted

- Predominant breastfeeding under 6 months – rarely used, not considered useful
- Age-appropriate breastfeeding – hard to interpret programmatically
- Duration of breastfeeding – hard to calculate and communicate
- Consumption of iron-rich or iron-fortified foods – difficult to operationalize in household surveys
Continued breastfeeding - assessed among children 12-23 months of age

- With disaggregations for 12-15 months, 16-19 months, and 20-23 months

Replaces two indicators on 12-15 months and 20-23 months

- Large confidence intervals due to tight age range
Minimum Dietary Diversity: Revised indicator definition includes breastmilk as the 8th food group, given the importance of breastmilk for this age.

Previous definition required at least 4 out of 7 food groups

Revised definition requires at least 5 out of 8 food groups, including breastmilk.
Methodological Advancement
IYCF Guide update: Revised Indicators

Minimum Meal Frequency:

Breastfed children

<table>
<thead>
<tr>
<th>6-8 months</th>
<th>9-23 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 2/day</td>
<td>≥ 3/day</td>
</tr>
</tbody>
</table>

Non-breastfed children

PREVIOUS INDICATOR

<table>
<thead>
<tr>
<th>6-23 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 4/day</td>
</tr>
</tbody>
</table>

Solid/semi-solid/soft feeds

milk feeds

Daily intake may result in any combination of the following:

- All soft and semi-soft foods
- All breastmilk substitutes

NO CHANGE
Changes in minimum dietary diversity and meal frequency have resulted in the revision of minimum acceptable diet

<table>
<thead>
<tr>
<th>Minimum Diet Diversity</th>
<th>Minimum Meal Frequency</th>
<th>Milk feeds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breastfed children</strong></td>
<td><strong>5/8 food groups</strong></td>
<td><strong>5+</strong></td>
</tr>
<tr>
<td>5/8 food groups</td>
<td><strong>5+</strong></td>
<td></td>
</tr>
</tbody>
</table>

| **Non-breastfed children** | **5/8 food groups**    | **5+**     | **6-23 months ≥ 4/day** | **at least 2 milk feeds** |
| 5/8 food groups           | **5+**                 |            | ≥ 1/day                |                         |
Methodological Advancement
IYCF Guide update: New Indicators

• **Exclusive breastfeeding in the first 2 days after birth** – Percentage of children born in last 2 years who were exclusively breastfed in the first 2 days following birth

**Rationale for the indicator:** Feeding newborns anything other than breastmilk has the potential to delay their first critical contact with their mother and can make it more difficult to establish breastfeeding over the long-term.
Methodological Advancement
IYCF Guide update: New Indicators

• Mixed breast-and non-breast milk feeding under 6 months –
  Percentage of infants 0-5 months of age who are fed breastmilk and formula or animal milk during the previous day

Rationale for the indicator: Non-human milk are likely to displace breastmilk and associated with increased risk of early cessation of breastfeeding, diarrhea, altered gut microflora.
Egg and/or flesh food consumption – Percentage of children 6-23 months of age who consumed egg and/or flesh foods during the previous day

Rationale for the indicator: Available evidence that infants and young children consuming egg and flesh food have higher intake of various nutrients important for optimal linear growth.
Methodological Advancement

IYCF Guide update: New Indicators

3 new indicators proposed to capture unhealthy eating

- Sweet beverage consumption 6-23months of age
- Unhealthy food consumption 6-23months of age
- Zero vegetable or fruit consumption 6-23months of age
Methodological Advancement
IYCF Guide update: New Indicators

Sweet beverage consumption – Percentage of children 6-23 months of age who consumed a sweet beverage during the previous day.

Sweet beverage includes

- Commercially produced and packaged beverages as soda pop, sport drinks, chocolate and other flavored milks etc.
- 100% fruit juice as well as fruit flavored drinks
- Home-made drinks of any kind to which a sweetener was added
Methodological Advancement
IYCF Guide update: New Indicators

• **Unhealthy food consumption**— Percentage of children 6-23 months of age who consumed sentinel unhealthy foods during the previous day.

**Selected sentinel unhealthy foods includes**

- Candies, chocolate and other sugar confections, including those made with real fruit or vegetables like candied fruit or fruit roll-ups.
- Frozen treats like ice cream, gelato, sherbet, sorbet, popsicles or similar confections.
- Cakes, pastries, sweet biscuits and other baked confections
- Chips, crisps, cheese puffs, French fries, fried dough, instant noodles and similar items which contain mainly fat and carbohydrate.
Methodological Advancement

IYCF Guide update: New Indicators

• **Zero vegetable or fruit consumption**— Percentage of children 6-23 months of age who did not consume any vegetables or fruits during the previous day

**Rationale for the indicator:** Low fruit and vegetable intake in young children is linked to low intake later in life. While there is not a universal recommendation for the optimal number of servings of vegetables and fruits per day for 6-23 months old children, consumption of zero servings on the previous day represents an unhealthy practice.
IYCF indicators recommended to be collected through household surveys

<table>
<thead>
<tr>
<th>Q#</th>
<th>Question</th>
<th>Response</th>
<th>Code</th>
<th>Skip</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Was [NAME] ever breastfed?</td>
<td>Yes</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td>2</td>
<td></td>
<td>If “no”, END questions about retrospective feeding</td>
</tr>
<tr>
<td>2</td>
<td>How long after birth was [NAME] first put to the breast?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If immediately, circle “000”</td>
<td>Immediately</td>
<td>000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If less than one hour, record “00” hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If less than 24 hours, record hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Otherwise, record days</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hours:</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Days:</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>In the first two days after delivery, was [NAME] given anything other than breast milk to eat or drink – anything at all like water, infant formula, or [insert common drinks and foods, including ritual feeds, that may be given to newborn infants]?</td>
<td>Yes</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Indicators as ever breastfed & early initiation of breastfeeding based on recall of practices immediately following child’s birth

Respondents are women of reproductive age with a birth in last 2 years

Questions asked about all live births in last 24 months, whether the infant is alive or dead at the time of interview
# Data Collection Methodology

## Indicator

<table>
<thead>
<tr>
<th>Current breastfeeding practices</th>
<th>Measurement methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive breastfeeding under 6 months,</td>
<td>Based on <strong>24-hour dietary recall</strong> <em>(day before the survey)</em></td>
</tr>
<tr>
<td>continued breastfeeding etc.)</td>
<td>• <strong>List-based method recommended to record beverage intake</strong></td>
</tr>
<tr>
<td></td>
<td>• <strong>Foods fed to child may be recorded using open-recall or list-based recall</strong></td>
</tr>
</tbody>
</table>

### Current complementary feeding practices

*Minimum dietary diversity, egg and/or flesh food consumption etc.*

*The beverage and food lists must be adapted to represent the most commonly consumed items by infants and young children in a country*

*Questions to mothers/caretakers about **all living children 0-23months of age** in a household*
## OPEN RECALL QUESTIONNAIRE FOR FOODS

### Q# 7

Now I would like to ask you about everything that [NAME] ate yesterday during the day or at night. I am interested in foods your child ate whether at home or somewhere else.

Think about when [NAME] woke up yesterday. Did (he/she) eat anything at that time?

**If “yes” ask:** Please tell me everything [NAME] ate at that time.

**Probe:** Anything else?

Record answers using the food groups below.

What did [NAME] do after that? Did he/she eat anything at that time?

Repeat this series of questions, recording in the food groups, until the respondent tells you that the child woke up this morning.

If a mixed dish is mentioned:

**Probe:** What were the main ingredients in [MIXED DISH]?

Record answers in the correct food groups 7A–7R.

### Q# 7A

**YES** | **NO** | **DI**
---|---|---
7A Yogurt, other than yogurt drinks? | 1 | 2 | 9

### Q# 7Anum

If “yes”: How many times did [NAME] eat yogurt?

If more than 7, record “7”

If number of times not known, record “9”

### Q# 7B

Porridge, bread, rice, noodles, pasta or [insert other commonly consumed grains from table A6.2, including foods made from grains like rice dishes, noodle dishes, etc.]?

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## LIST-BASED QUESTIONNAIRE FOR FOODS

### Q# 7

Now I would like to ask you about foods that [NAME] had yesterday during the day or at night. I am interested in foods your child ate whether at home or somewhere else. Please think about snacks and small meals as well as main meals.

I will ask you about different types of foods, and I would like to know whether your child ate the food even if it was combined with other foods in a mixed dish like [list common local examples of mixed dishes]

Please do not answer “yes” for any food or ingredient used in a small amount to add flavour to a dish.

Yesterday during the day or at night, did [NAME] eat:

### Q# 7A

**YES** | **NO** | **DK**
---|---|---
7A Yogurt, other than yogurt drinks? | 1 | 2 | 9

### Q# 7Anum

If “yes”: How many times did [NAME] eat yogurt?

If more than 7, record “7”

If number of times not known, record “9”

### Q# 7B

Porridge, bread, rice, noodles, pasta or [insert other commonly consumed grains from table A6.2, including foods made from grains like rice dishes, noodle dishes, etc.]?

---

1 | 2 | 9
Thank you!
Giles Hanley-Cook, FAO

Giles is a Nutrition/Statistics Consultant in the Food and Nutrition Division of the Food and Agriculture Organization of the United Nations (FAO). He is also nutritional epidemiologist affiliated with the Department of Food Technology, Safety and Health at Ghent University, Belgium. Giles was a lead contributor to the updated FAO guidelines for the measurement of the Minimum Dietary Diversity for Women (MDD-W) indicator among women of reproductive age.
Minimum Dietary Diversity for Women (MDD-W)

What’s new in the updated user guide (and how to move forward)?

Giles Hanley-Cook, Nutrition/Statistics Consultant
Food and Nutrition Division of the Food and Agriculture Organization of the United Nations (FAO)
MDD-W indicator definition

The proportion of non-pregnant or lactating women 15-49 years of age who consumed food items (at least 15g) from **at least 5 out of 10 defined food groups** in the previous 24-hour period.

1. Grains, white roots/tubers, plantains  
2. Pulses (beans, peas and lentils)  
3. Nuts and seeds  
4. Dairy  
5. Meat, poultry, and fish  
6. Eggs  
7. Dark green leafy vegetables  
8. Other vitamin A-rich fruits & vegetables  
9. Other vegetables  
10. Other fruits
MDD-W interpretation

Level of measurement/data collection: **Individual**

Level of interpretation: **Population**

- **Groups of WRA** with higher prevalence (%) of achieving MDD-W is a proxy for better micronutrient adequacy among WRA in the population.

- **Groups of WRA** who consume ≥5 of the 10 food groups are highly likely to consume:
  - At least one animal-source food (84%), and
  - Either pulses or nuts/seeds (84%), and
  - Two or more fruit/vegetable food groups (98%)

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How to use MDD-W

MDD-W as a **proxy** to describe one important dimension of women’s diet quality in **national and sub-national assessments**, in both **urban** and **rural** areas → integration into large-scale surveys

**Targets can be set and prevalence (%) of MDD-W can be compared** to previous assessments, so long as **survey methods** are consistent and **timing** accounts for **seasonality**

In the context of nutrition-sensitive policy, programs and projects, MDD-W may be useful when the design, activities, and impact pathways indicate a **potential to increase** MDD-W (**dietary diversity**)

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How NOT to use MDD-W

- **MDD-W**: qualitative food group data, **NOT** quantitative ingredient data

- Does **NOT** reflect other dimensions of diet quality, like moderation or balance/quality of macronutrients → **NOT** sufficient for high quality diet

- May need to combine with **other indicators** and metrics such as the Food Insecurity Experience Scale (FIES) to determine the underlying causes of poor food security and nutrition

- **MDD-W** is **NOT** for individual level assessment OR screening; relatively low sensitivity and specificity
Incorporating new evidence and know-how

Development and validation
2014-2016

Data collection methods
2018-2020

Advancing and expanding MDD-W
2021-2023

# Operational characteristics of proxy methods

<table>
<thead>
<tr>
<th></th>
<th>Open recall</th>
<th>List-based recall</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantages</strong></td>
<td>i. Intuitive for enumerator and respondent</td>
<td>i. Lower enumerator capacity requirements</td>
</tr>
<tr>
<td></td>
<td>ii. Structured probing</td>
<td>ii. Shorter training time</td>
</tr>
<tr>
<td></td>
<td>iii. Intra-food group information</td>
<td>iii. Easier for CAPI programming</td>
</tr>
<tr>
<td><strong>More complete recall?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Disadvantages</strong></td>
<td>i. Longer training time</td>
<td>i. Respondent mentally moves back and forth in time, must take apart mixed dishes</td>
</tr>
<tr>
<td></td>
<td>ii. Enumerators require reasonable knowledge of local foods/recipes</td>
<td>ii. Social approval and desirability bias</td>
</tr>
<tr>
<td></td>
<td>iii. Difficult for CAPI programming</td>
<td>iii. No probing</td>
</tr>
<tr>
<td><strong>Less complete recall?</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Consensus in 2014: Evidence is needed to optimize the operation of MDD-W for complete & accurate data collection, namely, the best mode of MDD-W data collection (open recall vs list-based)\(^1\)

The German Federal Ministry of Food and Agriculture (BMEL) funded FAO to conduct this research in 3 countries (Cambodia, Ethiopia and Zambia) over 3 years (2018-2020)

Research partners included: Ghent University (global level), University of Zambia, Royal University of Agriculture in Cambodia, and Ethiopian Public Health Institute

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FAO’s multi-country study: preparatory phase

Collect information on the following, in particular for list-based recall:

- Food consumption data from existing local surveys
- Focus group discussions with KIs, local nutritionist, and health workers
- National/regional food composition tables or laboratory data
- Seasonal foods calendar

**FOOD ITEMS** for each MDD-W food group

Capacity development workshops

- For open recall enumerators are trained on the principle of **not** counting food and ingredients usually consumed daily in less than 15g
FAO’s multi-country study: non-inferiority design

Day 1

Weighed food record (n = 1,337)

Excluded (n = 0)

Day 2

Random allocation

Proxy method 1

Allocated to list-based recall in the morning (n = 666)

Open recall in the afternoon (n = 666)

Proxy method 2

Allocated to open recall in the morning (n = 671)

List-based recall in the afternoon (n = 671)
List-based and open recall methods overreported MDD-W by 16 and 10 percentage points ($P<0.001$), respectively, as compared to weighed food records (proportion achieving MDD-W: 30%)

Operationalizing MDD-W through proxy methods should consider potential trade-offs between accuracy and simplicity

Updated MDD-W guidance: Key new features

• Recommendations based on:
  
  New scientific evidence
  
  Technical advice from Technical Advisory Group
  
  Global developments from partners (e.g., WHO/UNICEF, DHS, IFAD, WFP, GIZ)
  
  Current users via MDD-W “listserv” (https://dgroups.org/fao/mddwnetwork)
  
  FAO/EU/GIZ technical meetings

• Using computer-assisted personal interviewing (CAPI) in survey design and administration

• Applying results, guidance on:

  Data management, analyses, interpretation, and presentation

• Detailed guidance on data collection using non-quantitative methods

  Open recall: extensive food list, enumerator training on 15g minimum quantity

  List-based: locally adapted, limited, closed-ended, and without exclusion messaging
Moving forward with MDD-W

**GIZ-funded project on “Advancing and Expanding the Uptake of the MDD-W Indicator”**

- **Capacity development:** open access MDD-W course on the FAO e-Learning Academy

- **New evidence:** Validation of food group cut-off among other population groups (e.g., adolescents), investigate the sources of food group misclassification, …

**Common goal:** improving dietary diversity/quality around the globe
Thank you!

Contact info: giles.hanleycook@fao.org

Sorrel Namaste is the Senior Nutrition Technical Advisor for The Demographic and Health Surveys Program, in which she provides technical assistance for the implementation of population-based surveys. Sorrel has experience in survey data collection and applied research, with specific expertise in nutritional assessment.
DHS Pilot Results of Cognitive Testing for Dietary Questions

Sorrel Namaste, The DHS Program

Special thanks to

Collaborators: Andrea Spray, Anna Herforth

DHS-8 Pilot team: Trevor Croft, Joy Fishel, Joanna Lowell, Keith Purvis, Yodit Bekele
What is The DHS Program?

A USAID-funded project that provides technical assistance to:

- *improve* the collection, analysis and presentation of population, health, and nutrition data
- *facilitate* use of these data for planning, policy-making, and program management

DHS-8 implemented by ICF with partners Johns Hopkins University, PATH, EnCompass, Avenir Health, Vysnova Partners, Blue Raster
Two major themes of the DHS-8 standard questionnaire

• Meet existing and emerging critical data needs

• Maintain data quality
Nutrition Cognitive Testing Content

Q1: Introduction:
Short vs. long dietary introduction
Q1: Introduction:
Short vs. long dietary introduction

Q2: Mis/reporting on:
   a. Flavoring/mixed dishes
   b. Open ended vs. closed ended
   c. Liquids in first 2 days
Nutrition Cognitive Testing Content

Q1: Introduction:
Short vs. long dietary introduction

Q2: Mis/reporting on:
  a. Flavoring/mixed dishes
  b. Open ended vs. closed ended
  c. Liquids in first 2 days

Q3: Understanding terms and concepts:
  a. Milk products
  b. Yogurt
  c. Sweetened or sweet beverages
  d. Sweet potatoes

No change

Modification
Q1: Introduction:
Short vs. long dietary introduction

Q2: Mis/reporting on:
a. Flavoring/mixed dishes
b. Open ended vs. closed ended
c. Liquids in first 2 days

Q3: Understanding terms and concepts:
a. Milk products
b. Yogurt
c. Sweetened or sweet beverages
d. Sweet potatoes

Q4: Social desirability bias:
a. Exclusive breastfeeding in the first 2 days
b. Soda
c. Meat

Nutrition Cognitive Testing Content

No change
 Modification
**Nutrition Cognitive Testing Content**

**Q1: Introduction:**
Short vs. long dietary introduction

**Q2: Mis/reporting on:**
- Flavoring/mixed dishes
- Open ended vs. closed ended
- Liquids in first 2 days

**Q3: Understanding terms and concepts:**
- Milk products
- Yogurt
- Sweetened or sweet beverages
- Sweet potatoes

**Q4: Social desirability bias:**
- Exclusive breastfeeding in the first 2 days
- Soda
- Meat

**Q5: Understand nutrition interventions:**
- Growth monitoring
- ANC counseling on diet and breastfeeding
- Postnatal counseling and observation breastfeeding
- Rooming-in post delivery
- Counseling on IYCF

**No change**

**Modification**
Pilot Design for Nutrition Questions

Questionnaires → Cognitive interviews

Focus groups
Liquid and Solid Yogurts

• Unable to distinguish between solid and liquid yogurt
• Collapse yogurt drink and solid yogurt and include follow-on questions for sweetened

“I don’t know. ... It’s difficult. ...Because it confuses. Yogurt - there is no yogurt drinks and yogurt.”

-Respondent
Open-ended vs. Closed-ended Questions

Closed-ended
+ Reduced misclassification
- Potential underreporting

Open-ended
+ Reduced survey burden
+ Reduced respondent fatigue
- Increased misclassification

Closed-ended: Banana, orange, tangerine, avocado, pineapple, apple, melon or watermelon?

Guava, fene, soursop, owelo, jumbula, ejuga, or raspberries?

Open-ended: Any other fruits, such as banana, orange, pineapple, watermelon, owelo, or other fruit?

“You have to say no no no, and the questions just kept coming.”
-Interviewer
## Fruits and Vegetables

<table>
<thead>
<tr>
<th></th>
<th>Dark, green leafy vegetables</th>
<th>Other fruits</th>
<th>Other vegetables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct items</td>
<td>14</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Correct items not listed</td>
<td>7</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>Incorrect items</td>
<td>3</td>
<td>6</td>
<td>13*</td>
</tr>
</tbody>
</table>

*Majority items asked about earlier in questionnaire*
Misclassification of Sweet Foods
Social Desirability Bias

“Yes. They will say the truth because no one forced them, and it’s not a crime.”
-Respondent

“No. Because some people don’t want to say that their children take soda.”
-Respondent
Take aways

Cognitive testing is critical to understanding how well survey questions perform.

Revised survey questions will result in better operationalize of dietary guidelines.

Research across diverse contexts can further inform improvements in questionnaire design.
Survey Status

Data collection tools

STATcompiler

Nutrition E-learning Course
Anna Herforth is the Principal Investigator of the Global Diet Quality Project, building survey tools and indicators for diet quality monitoring, as a Senior Research Associate at the Harvard T.H. Chan School of Public Health and a Visiting Senior Researcher at Wageningen University & Research. Within this project she has developed and led the adaptation of survey questions for use in the collection of data to formulate the IYCF and MDD-W indicators.
Adaptation of survey questions to collect data on MDD-W and IYCF indicators

June 14, 2022
Anna Herforth, PhD

Global Diet Quality Project
The Global Diet Quality Project has undertaken a comprehensive, consistent effort to produce adapted list-based questions and ready-to-use questionnaires to collect accurate, valid, comparable data for:

- MDD-W
- WHO healthy diet recommendations
- WHO and UNICEF IYCF indicators
Rationale

- Open 24-hour recall is not an option for many users
  - Particularly for large-scale surveys, such as DHS and Gallup World Poll, and other national surveys
- Adaptation of list-based questions requires nutrition expertise, survey design expertise, local knowledge and cognitive testing
- Comprehensive and systematic adaptation for each country had never been done
  - “best guess” formulation → evidence-based, inclusive adaptation
Yesterday, did you eat any fruits that are dark yellow or orange inside, like ripe mango or ripe papaya?

• Follow up: if you said yes, what was the item you ate?
Yesterday, did you eat any fruits that are dark yellow or orange inside, like ripe mango or ripe papaya?

• Follow up: if you said yes, what was the item you ate?
  • Mango
  • Papaya
  • Passion fruit
  • Oranges
  • Apples
  • Pineapple
  • Carrot

→ MDD-W guide recommends the use of sentinel foods / closed-ended questions
“Yesterday during the day or at night, did [NAME] have... Milk from animals, such as fresh, tinned or powdered milk?”

- “Powdered milk”
  - In Cambodia, South Sudan, many others = infant formula

- “Tinned milk”
  - In Nigeria = evaporated milk (as intended)
  - In Bangladesh, Tanzania, Ecuador, others = infant formula
  - In Lesotho, Ecuador = sweetened condensed milk
  - In Lao PDR = [not understood]

- “Milk from animals”
  - In Ghana: “If we said milk from animals, people may be confused because it is from tins. Just say fresh milk, tinned milk, or powdered milk. Plant milks are very uncommon.”
Adapting Country-Specific Food Lists to Measure Diet Quality and Advance Nutrition

USAID Advancing Nutrition is working with partners to develop country-level adaptations of a low-burden diet quality questionnaire (DQ-Q) that was developed by the Global Diet Quality Project, a collaboration between Gallup, Harvard, and GAIN. Dr. Anna Herforth, Principal Investigator of the project at Harvard, is leading adaptations across countries.

While it is understood that poor diet contributes to malnutrition in all its forms, we need better tools to collect data and measure diet quality, particularly in resource settings, to inform policies, design interventions, and programs, and improve nutrition and health outcomes.

The low-burden DQ-Q facilitates collection of reliable and informative diet quality measurements.

Global Diet Quality Project:
Advancing Methods for Collecting Accurate, Reliable, Comparable Minimum Dietary Diversity Indicator for Women (MDD-W) and other Diet Quality Data at Scale
Adaptation: a standardized process

- Aligned with FAO MDD-W guide and IYCF indicators
- Key purpose: to identify country-specific liquid and food lists of the most commonly consumed items (sentinel foods) and how they are called
- Also: probing about 15g, and standard approach to treating inclusions/exclusions

1. Desk review (zero draft)
2. Key informant interviews
3. Harmonization

Available at dietquality.org
Can you [respondents] actually answer the questions I’m asking?

Example:
“If I said ‘Yesterday did you have noodles’ and you had pasta, would you say yes?’

What is “cheese”?

Do people understand and use the term “infant formula”?

Are sesame seeds consumed in large quantities at a time, or typically used as a sprinkle?
Example: Harmonization by region (DGLV examples)

amaranth (8/8)  Gnetum sp. (6/8)

excluded:
- Sao Tome e Principe (no need for follow up)
- Chad (no need for follow up)

**present in Nigeria
Global inclusive, participatory effort

• Over 300 days of full-time effort (2400+ hours) to adapt and harmonize food lists for 105 countries.

• Over 750 key informants built the tools

• Collaboration from DHS, FAO, WHO, UNICEF, WFP, SUN, IUNS, GIZ, EU (FOODland)
Diet Quality Questionnaire (DQQ) for general population and IYCF

Country-adapted Diet Quality Questionnaire (DQQ)

Country-adapted IYCF Questionnaire

Minimum Dietary Diversity for Women (MDD-W)

Food Group Diversity Score (FGDS) & ALL-5

Global Dietary Recommendations (GDR) Score*

WHO and UNICEF IYCF Indicators**


** WHO and UNICEF IYCF indicators. Available at: https://www.who.int/publications/i/item/9789240018389
Global Diet Quality Project

Enabling diet quality monitoring globally with tools and data.

About the Project
Learn about the Global Diet Quality Project aims, project team and collaborators.

DQQ Tools & Data
View and download country-adapted diet quality questionnaire (DQQ) tools and data.

Diet Quality Indicators
How to use the DQQ data for understanding diet quality

Countries where the DQQ is fully adapted and available

DQ available
DQ available, and national data are being collected
Read: Now I’d like to ask you some yes-or-no questions about foods and drinks that you consumed yesterday during the day or night, whether you had it at home or somewhere else.

First, I would like you to think about yesterday, from the time you woke up through the night. Think to yourself about the first thing you ate or drank after you woke up in the morning ... Think about where you were when you had any food or drink in the middle of the day ... Think about where you were when you had any evening meal ... and any food or drink you may have had in the evening or late-night... and any other snacks or drinks you may have had between meals throughout the day or night.

I am interested in whether you had the food items I will mention even if they were combined with other foods. Please listen to the list of foods and drinks, and if you ate or drank ANY ONE OF THEM, say yes.

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>(circle answer)</th>
<th>DQQ Question numbers</th>
<th>Possible points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rice, pasta, macaroni, or commercial white bread?</td>
<td></td>
<td>1, 2, 3</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Enjera, homemade bread, kita, chechebassa, nifiro, qinche, porridge, maize, or barley?</td>
<td></td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Potato, sweet potato, any food from enset, yam, anchote, cassava, or taro?</td>
<td></td>
<td>21</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Kik, shiro, ful, helbet, sifo, ashuik, nifiro from beans, kolo from beans, esesh from beans, chickepa</td>
<td></td>
<td>14, 15, 25</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Carrots, pumpkin, or sweet potatoes that are orange inside?</td>
<td></td>
<td>16, 17, 18, 19, 20</td>
<td>1</td>
</tr>
<tr>
<td>6.1</td>
<td>Ethiopian kale, Swiss chard, broccoli, spinach, moringa leaves, cassava leaves, or sweet potato leaves</td>
<td></td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>7.1</td>
<td>Tomatoes, eggplant, beetroot, zucchini, or head cabbage?</td>
<td></td>
<td>6*</td>
<td>1</td>
</tr>
<tr>
<td>7.2</td>
<td>Cucumber, lettuce, green pepper, cauliflower, or celery?</td>
<td></td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Mango or papaya?</td>
<td></td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Orange, mandarins, or grapefruit?</td>
<td></td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>10.1</td>
<td>Banana, avocado, pineapple, apple, or watermelon?</td>
<td></td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>10.2</td>
<td>Guava, dates, prickly pear, strawberries, prim, or peaches?</td>
<td></td>
<td>10*</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Cakes, cookies, biscuits, sweet breads, baklava, mushebek, or bombolino?</td>
<td></td>
<td>SUM (0-10)</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Ice cream, candy, or chocolates?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Eggs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Cheese, cottage cheese, or feta?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Yogurt</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
The Diet Quality Questionnaire (DQQ) was developed to enable population-level diet quality monitoring. The DQQ is adapted for each country and takes 5 minutes to implement. It is a low-burden tool for collecting valid, comparable food group consumption data.

The DQQ is a standardized tool to collect the minimum dietary diversity for women (MDD-W) indicator, along with new indicators that capture dietary risk factors for noncommunicable disease (NCDs).

The DQQ can be used to assess dietary patterns and trends in the general population. Separate questionnaires are specially designed for infants and young children under age 2 years.

A list of download links for country-adapted DQOs is available here.
## Diet Quality Questionnaire (DQQ) for IYCF

### Ethiopia

<table>
<thead>
<tr>
<th>Question</th>
<th>YES or NO</th>
<th>DONT KNOW (DK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Was [NAME] ever breastfed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. How long after birth was [NAME] first put to the breast?</td>
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<tr>
<td>If immediately, circle &quot;000&quot;</td>
<td></td>
<td></td>
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<tr>
<td>If less than one hour, record &quot;00&quot; hours</td>
<td>000</td>
<td></td>
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<tr>
<td>If less than 24 hours, record hours</td>
<td></td>
<td></td>
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<tr>
<td>Otherwise, record days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. In the first 2 days after delivery, was [NAME] given anything other than breastmilk to drink or eat - anything at all like water, formula, herbal drinks, tena adam, fenugreek water, sugar water, butter?</td>
<td>YES or NO</td>
<td>DK</td>
</tr>
<tr>
<td>4. Was [NAME] breastfed yesterday during the day or at night?</td>
<td>YES or NO</td>
<td>DK</td>
</tr>
<tr>
<td>5. Did [NAME] drink anything from a bottle with a nipple yesterday during the day or at night?</td>
<td>YES or NO</td>
<td>DK</td>
</tr>
<tr>
<td>6. Now I would like to ask you about liquids that [NAME] may have had yesterday during the day or at night. Please tell me about all drinks, whether [NAME] had them at home, or somewhere else. Yesterday during the day or at night, did [NAME] have...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6A. Plain water?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6B. Formula, such as Baby Luck, Nan, Cerecal, S-26, or Liptomil?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6Bnum. IF YES: How many times did (NAME) drink infant formula? (IF 7 OR MORE TIMES, RECORD '7').</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6C. Milk from animals, including fresh or packaged?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6Cnum. IF YES: How many times did (NAME) drink milk? (IF 7 OR MORE TIMES, RECORD '7').</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6D. Swt.26 IF YES: Was any of the milk a sweet or flavoured type of milk?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6E. N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6F. Fresh fruit juice, packed fruit juice or fruit drinks?</td>
<td></td>
<td></td>
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<tr>
<td>6G. Lesassa such as Coke, Fanta, Sprite, Sofi Malt, or Malta Guinness?</td>
<td></td>
<td></td>
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<tr>
<td>6H. Tea, coffee, or herbal drinks?</td>
<td></td>
<td></td>
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<tr>
<td>6Hswt.26 IF YES: was the drink sweetened?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6I. Clear broth or clear soup?</td>
<td></td>
<td></td>
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<tr>
<td>6j. Any other liquids?</td>
<td></td>
<td></td>
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<tr>
<td>6jswt. IF YES: What was the liquid or what were the liquids?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6k. Was the drink sweetened?</td>
<td></td>
<td></td>
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<tr>
<td>Yesterday, did [NAME] eat any of the following vegetables:</td>
<td></td>
<td></td>
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<tr>
<td>7. Carrots, pumpkin, or sweet potatoes that are orange inside?</td>
<td></td>
<td></td>
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<tr>
<td>7.6. Ethiopian kale, Swiss chard, broccoli, spinach, moringa leaves, cassava leaves, or sweet potato leaves?</td>
<td></td>
<td></td>
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<tr>
<td>7.7.1. Tomatoes, eggplant, beetroot, zucchini, or head cabbage?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.7.2. Cucumber, lettuce, green pepper, cauliflower, or celery?</td>
<td></td>
<td></td>
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<tr>
<td>Yesterday, did [NAME] eat any of the following fruits:</td>
<td></td>
<td></td>
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<tr>
<td>7.8. Mango or papaya?</td>
<td></td>
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<tr>
<td>7.9. Orange, mandarin, or grapefruit?</td>
<td></td>
<td></td>
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<tr>
<td>7.10.1. Banana, avocado, pineapple, apple, or watermelon?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.10.2. Guava, dates, prickly pear, pram, or peaches?</td>
<td></td>
<td></td>
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<tr>
<td>Yesterday, did [NAME] eat any of the following sweets:</td>
<td></td>
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<tr>
<td>7.11. Cakes, cookies, biscuits, sweet breads, baklava, mushebek, or bombolino?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.12. Ice cream, candy, or chocolates?</td>
<td></td>
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<tr>
<td>Yesterday, did [NAME] eat any of the following foods of animal origin:</td>
<td></td>
<td></td>
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<tr>
<td>7.13. Eggs?</td>
<td></td>
<td></td>
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<tr>
<td>7.14. Cheese, cottage cheese, or feta?</td>
<td></td>
<td></td>
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<tr>
<td>7.15. Dulet, liver, kidney, heart, lung, or gizzard?</td>
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<tr>
<td>7.16. Sausages, canned meat, or kuanta?</td>
<td></td>
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<tr>
<td>7.17. Beef, sheep, goat, or raw meat?</td>
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</tr>
<tr>
<td>7.18. Pork or camel?</td>
<td></td>
<td></td>
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<tr>
<td>7.19. Chicken?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.20. Fish, dried fish, tuna, or canned fish?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
IYCF DQQ question numbering follows the WHO and UNICEF IYCF indicator publication, for ease of calculation
Thank you!

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- Our global network of key informants
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