PMA2020 Nutrition Survey – Burkina Faso and Kenya: Measurement Innovations Report

2018

PMA2020
Performance Monitoring and Accountability 2020

Johns Hopkins Bloomberg School of Public Health

Bill & Melinda Gates Institute for Population and Reproductive Health

Data DENT
Data for Decisions to Expand Nutrition Transformation

Cover Photo: 2015 Amelie Sow-Dia, Courtesy of Photoshare

About the PMA2020 Nutrition Module

Over the last decade, governments and donors have greatly increased their nutrition-focused investments in countries with high burdens of malnutrition. However, a lack of clearly defined and validated indicators at the right scale and frequency hinders efforts to monitor implementation and assess the impact of nutrition programs and policies.

From 2017 through 2018, the Performance Monitoring for Accountability 2020 (PMA2020) program piloted a new nutrition survey module in Burkina Faso and Kenya. The new survey was designed to provide government and development partners with more complete data on the coverage of nutrition-specific interventions, diet and nutritional status among children under 5, adolescent girls, and women of reproductive age, as well as household-level food security and access to fortified foods (Table 1).

The new survey included a Service Delivery Point questionnaire to assess the readiness of public and private facilities to provide nutrition services. The questionnaires were designed, tested, and refined over two rounds of nationally representative data collection in each country. The PMA2020 nutrition survey included questions about coverage of nutrition-specific interventions and diet that are not commonly measured in nationally representative household surveys (see Table 1 bolded indicators).

About the Surveys: Round 1 (2017) and Round 2 (2018) in Burkina Faso and Kenya

The PMA2020 Burkina Faso and Kenya nationally representative nutrition surveys used a multi-stage stratified cluster design with urban-rural strata. We collected data on children under 5 years of age and women 10-49 years of age, as we were interested in adolescent populations. Open Data Kit Collect (ODK), an open source software that facilitates mobile-assisted data collection, was used to create the survey platform. Local data collectors (resident enumerators), conducted interviews in households and at health service delivery points, entering data into smartphones equipped with ODK software. Data was then uploaded to a central server where it was validated and aggregated in real-time.

DATES OF DATA COLLECTION AND FINAL SAMPLE SIZES:

Burkina Faso

Round 1:
Jun–Sep 2017
3,791 children;
3,960 women

Round 2:
Jun–Aug 2018
2,851 children;
1,490 women

Kenya

Round 1:
Jun–Aug 2017
6,545 children;
6,658 women

Round 2:
May–Aug 2018
4,563 children;
1,326 women

TABLE 1. PMA2020 NUTRITION MODULE INDICATORS BY POPULATION GROUP*

Intervention Coverage	**Pregnant & Lactating Women (PLW)**	IFA supplementation (> 90 tabs) **Calcium supplementation** **Maternal nutrition counseling** **Monitoring of weight gain during pregnancy** **Food supplementation or cash transfer to PLW**
	0-23m	**Breastfeeding counseling and support** **Complementary feeding counseling**
	0-59m	Vitamin A supplementation Zinc treatment for diarrhea **Growth Monitoring / Screening for Acute Malnutrition** **Food supplementation** Micronutrient Powder (MNP)
IYCF Behaviors		Breastfeeding within 1 hour of birth Exclusive breastfeeding in children < 6m Minimum Dietary Diversity (6-23m) Minimum Acceptable Diet (6-23m) Continued BF at 24 months (20-23m) **Processed snack food and sugar-sweetened beverage (SSB) consumption** Formula milk consumption
HH Food Environment		Household food security (FIES) Women's dietary diversity
Nutritional Status		MUAC women 10-49 and children 0-59m

** Bolded blue text indicates indicators for nutrition-specific interventions and diet that are not commonly measured in nationally representative household surveys*

About this Measurement Innovations Report

This report is written for audiences who implement nutrition-focused household surveys. It describes the development, application and refinement of new questions to measure coverage of key nutrition interventions and practices: breastfeeding counseling and support, complementary feeding counseling, micronutrient supplements, and consumption of "unhealthy" foods by children, adolescent girls, and women. The PMA2020 team aimed to develop questions that can be generalized within and across country contexts. No globally accepted standardized coverage indicator definitions were available for these interventions and practices. However, there are examples of questions from research and program evaluation contexts that informed the PMA2020 questionnaire.[1]

The Round 1 (2017) and Round 2 (2018) nutrition datasets and key indicators briefs are available at www.pma2020.org.

Breastfeeding counseling and support

Indicators on breastfeeding practice such as early initiation of breastfeeding and exclusive breastfeeding are commonly collected in household surveys. However, practice indicators do not necessarily reflect the coverage of breastfeeding promotion interventions.

WHO Guidelines on breastfeeding promotion were still under development at the time of the PMA2020 nutrition module development. However, we recognized that effective breastfeeding support requires both information sharing and hands-on support to observe and correct the mother's technique. We asked women 10–49 years of age with a live birth in the last two years whether they had received information or support for breastfeeding from facility or community-based health providers at three critical points of early contact: (1) during pregnancy, (2) around delivery, and (3) within the first month of life. At the 'around delivery' and 'within the first month' contacts, we also asked whether there was an "observation to ensure correct practice". Additionally, we asked all caregivers who reported a sick child visit in the previous two weeks whether they received advice to continue breastfeeding at the visit.

QUESTION FLOW: BREASTFEEDING COUNSELING AND SUPPORT DURING THE CHILD'S FIRST MONTH OF LIFE (2018)

During your child's first month of life (after delivery/ first 2 days), did a health provider or community health volunteer/worker watch you breastfeed to make sure it was happening properly?

↓

During your child's first month of life (after delivery/ first 2 days), did a health provider or community health volunteer/worker talk to you about how to feed your baby?

→

Where did you receive this information (e.g. health facility, mobile clinic, home visit by community health volunteer/worker)?

↓

Which health provider or community health volunteer/ worker talked to you and/or observed your breastfeeding (e.g. doctor, clinical officer, nurse, community health worker/volunteer)?

Multiple responses allowed

→

What information was shared about feeding your baby? (Unprompted)

↓

What information was shared about feeding your baby? (Prompted)

Multiple responses allowed

Design of question elements

Two challenging elements of question design included specifying the early critical time points and identifying generalizable counseling messages. In the first round of data collection (2017), we specified different periods as "around delivery" for facility compared to home births. In 2018, we adopted "within two days of delivery" for all births – both in facility and at home – which corresponds to the definition of early postnatal care (PNC) used in the Demographic and Health Surveys (DHS) and the Multiple Indicator Cluster Surveys (MICS). Both DHS and MICS include a question about breastfeeding counseling and support during PNC. The "one month" point was chosen because it is important to address breastfeeding challenges early to maintain exclusive breastfeeding.

We saw a decline in coverage across antenatal care (ANC), delivery, and 1-month time points, particularly in Burkina Faso, which suggests that respondents could distinguish between the time points (Figure 1). Results also suggest that some women received either information or observation but not both, highlighting the importance of asking about each element separately.

figure **1**

Recently pregnant women in Burkina Faso and Kenya who received information about breastfeeding from a health care provider or community health worker/volunteer (2018)

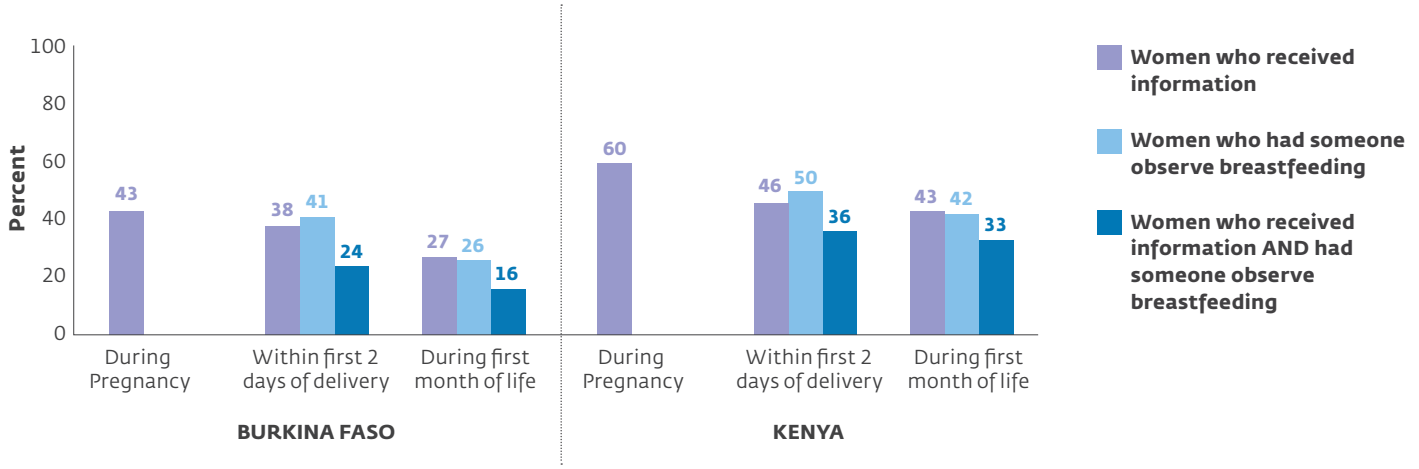
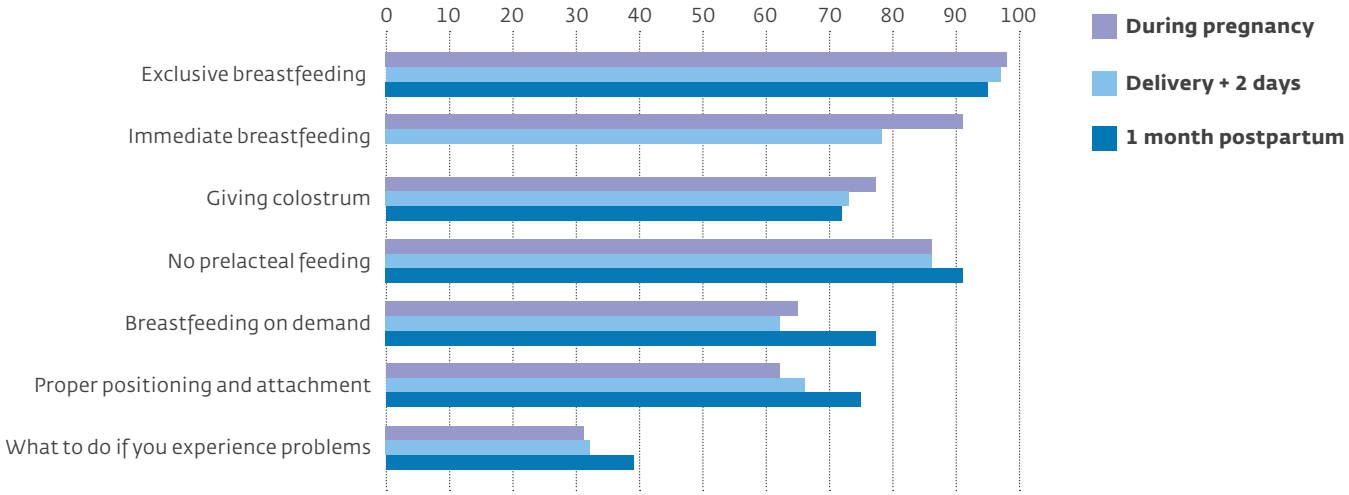


figure **2**

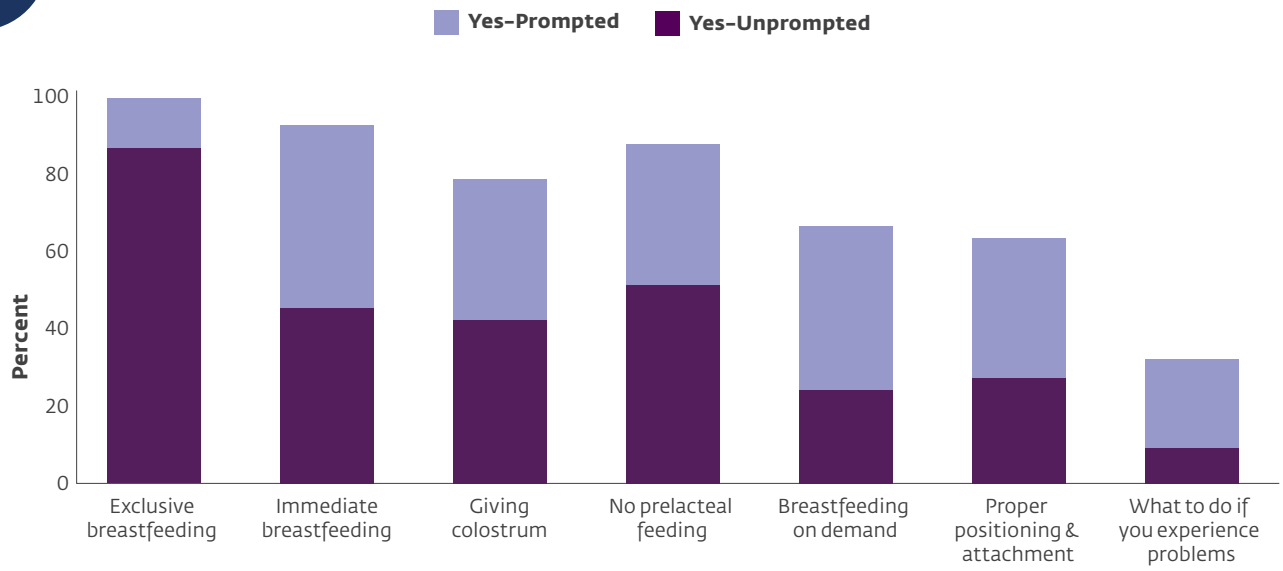
Breastfeeding counseling: Specific messages by time (Burkina Faso, 2018)



We learned important lessons across the two rounds of the survey about how to pose questions about receipt of specific messages. In 2017, questions about specific messages were all prompted; caregivers were specifically asked whether they received each message from a list of messages. In 2018, questions about messages were first asked without any prompting, then with a prompt for messages that were not mentioned by the respondent in the first pass. As shown in Figure 3, unprompted questions resulted in much lower coverage being reported. More work is needed to test the validity of unprompted versus prompted responses to determine which approach is more accurate. Later "critical time points" that are consistent with expected contacts with the health system (e.g. 6-8 week vaccinations) should be tested as well.

figure **3**

Breastfeeding counseling: Prompted vs unprompted responses (Burkina Faso, 2018)



Complementary feeding counseling

The PMA2020 nutrition survey included questions about complementary feeding counseling; much of the learning on these indicators mirrored that of breastfeeding counseling indicators. Neither the DHS nor MICS core survey modules include questions on coverage of complementary feeding counseling. The PMA2020 nutrition module asked caregivers of all children 0-23 months of age if they ever received advice on giving their child soft, semi-solid, or solid foods.

QUESTION FLOW: COMPLEMENTARY FEEDING COUNSELING (2018)

Ever receive advice on soft, semi-solid and solid foods? → *Last time* • How many months ago? • Where were you? • Who gave advice? → Ever get advice about what age to start? ↓ If yes, what age? → Which other specific CF messages? *-/+ prompt*

Design of question elements

The complementary feeding counseling questions were structured differently than the breastfeeding counseling and support questions. Rather than age-specific time points (e.g. at six months of age), we asked about the last time advice was received relative to the current age of the child. In 2017, we specified the recall period in the main question by the child's current age: caregivers of children zero to five months were asked if they ever received advice; caregivers of children six to 11 months were asked if they received advice *in the last one month*; and caregivers of children 12 to 23 months were asked if they received advice *in the last three months*. However, this made it difficult to compare findings across age groups.

In 2018, we did not specify the recall period in the stem of the question to all caregivers of children zero to 23 months. Instead we asked a follow-up question to find out the age of their child when they received advice about complementary feeding. In the analysis, we defined the recall periods as: less than one month, less than 3 months, less than 6 months, and greater than 6 months.

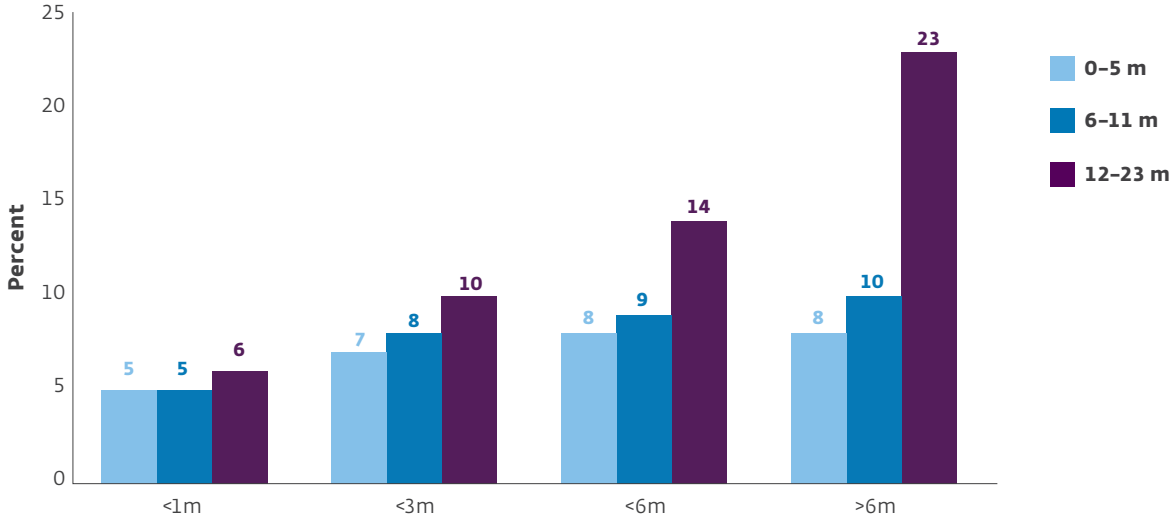
Complementary feeding counseling by age and recall period

In 2018, 51% of caregivers in Burkina Faso and 44% of caregivers in Kenya reported ever receiving advice from a health provider or community health volunteer/worker about what complementary foods to give their child. Consistent with expectations, caregivers of older children were more likely than caregivers of younger children to have ever received complementary feeding counseling, while the time since they were last counseled was longer for caregivers of older compared to younger children (Figure 4). By asking the actual number of months since their last contact in Round 2 (2018), we had the freedom to define different recall periods in the analysis, giving us better clarity on counseling coverage across age groups.

In 2018, we also asked caregivers about specific messages they received about complementary feeding, first unprompted then prompted, and saw a similar pattern as for breastfeeding counseling messages; prompting greatly increased reported coverage. For example, in Burkina Faso only 20% of caregivers reported receiving advice from a health care worker or community health volunteer/worker to continue breastfeeding and providing other foods during illness without prompting, then another 40% of caregivers reported receiving that advice after prompting.

figure **4**

Complementary feeding counseling by child's age: Cutoffs for time since caregiver last received advice (Kenya, 2018)



Micronutrients

Women receive many different tablets during their pregnancy including vitamin supplements and medications. Some supplements are consumed at health facilities only a few times during their pregnancy (e.g. SP/Fansidar for malaria prophylaxis; Vitamin A) and some are required daily and taken at home (e.g. iron and folic acid, calcium). PMA2020 resident enumerators were trained to use photos of tablets and to probe, to ensure accurate responses. However, women might not have been able to distinguish among different tablets when responding to the survey questions. We examined our findings across rounds to better understand women's responses (Table 2).

TABLE 2. RECEIPT OR PURCHASE OF SUPPLEMENTS DURING PREGNANCY AMONG RECENTLY PREGNANT WOMEN (BURKINA FASO AND KENYA, 2018)

	BURKINA FASO (%)		KENYA (%)	
	2017	**2018**	**2017**	**2018**
Iron tablets, syrup, IFA	97	91	91	89
Vitamin A*	38	37	62	68
IPTp: SP/Fansidar**	79	78	40	48
Calcium	24	26	33	25

2017: After birth; 2018: Within 1 month postpartum
***2017: Broadly asked about drugs to keep you from getting malaria; 2018: Specifically asked about SP/Fansidar*

Additional research is needed about women's abilities to distinguish among the tablets they receive during pregnancy, paying specific attention to how to inquire about and elicit accurate responses around the use of calcium.

Iron-containing supplements: Receipt of iron-containing supplements was high in both countries across rounds. Consistent with national protocols, most women reported receiving iron folic acid free at the facility.

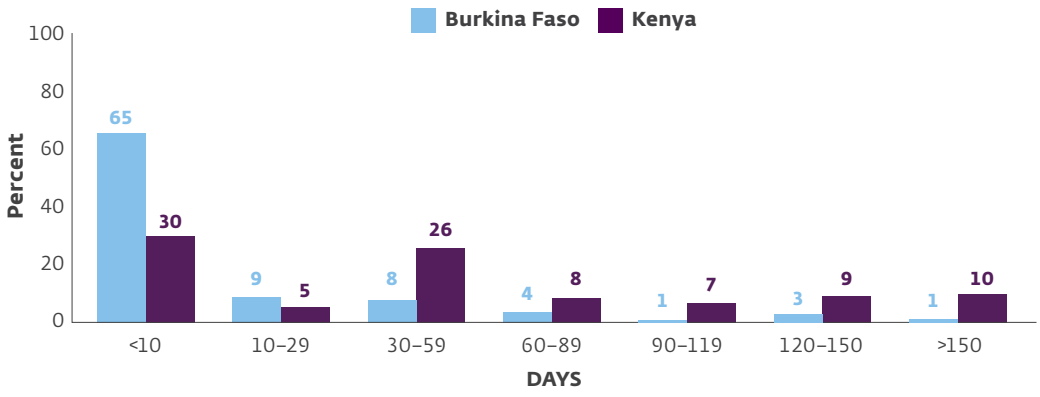
Postpartum Vitamin A: In 2017, questions about postnatal Vitamin A coverage were specific to whether the birth was in a facility, "before you left the health facility", or at home "within one week after delivery." We removed the distinction between home and facility births in 2018 and changed the recall period to within one month postpartum.[2] After this change, we saw an increase in postnatal Vitamin A coverage in Kenya but not Burkina Faso. It is possible that women in Burkina Faso receive Vitamin A around delivery, whereas women in Kenya receive it at a later postpartum visit.

Calcium: Calcium is not part of routine ANC protocols in either country but may be available in some facilities and pharmacies. In both rounds, resident enumerators showed a photo of calcium tablets from the pharmacy when asking about receipt and consumption of calcium. In 2017, reports of calcium supplementation were higher than expected in both countries. Between rounds, the PMA2020 team conducted interviews with women in both countries to try to clarify understanding of questions; resident enumerators also received additional training for Round 2. However, in 2018 we still saw higher-than-expected coverage of calcium.

We compared the total number of days of self-reported calcium use across sites. In Burkina Faso, 65% of women who took any calcium supplements reported taking them for fewer than 10 days in total. In contrast, only 30% of women in Kenya who took calcium supplements reported taking them for less than 10 days (Figure 5). The less frequent use in Burkina Faso could suggest that women may have interpreted the question to refer to another form of calcium, such as an antacid.

figure **5**

Among women who reported ever receiving or purchasing calcium supplements: For how many days during the pregnancy did you take them? (Burkina Faso and Kenya, 2018)

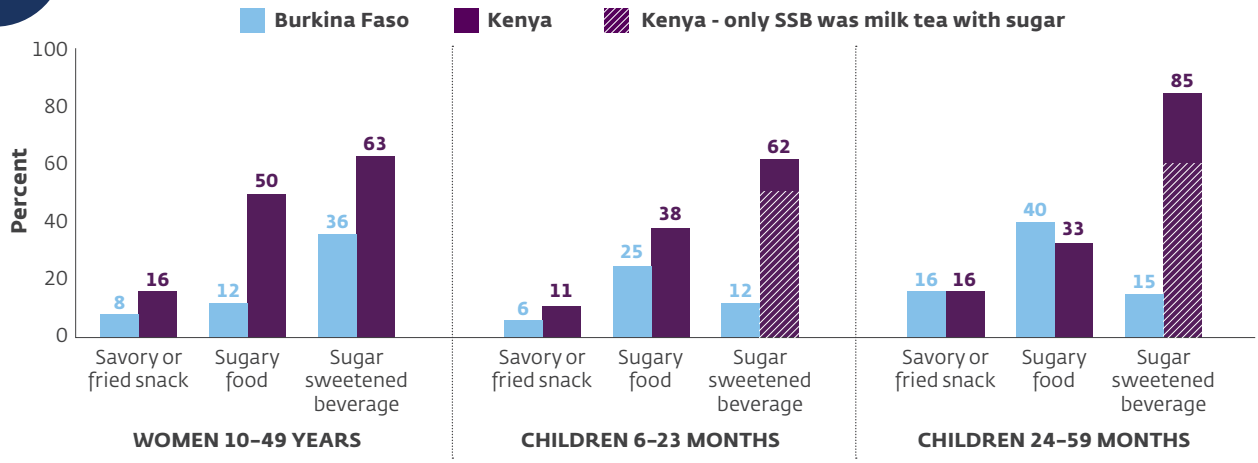


Dietary intake: Snacks and sugar-sweetened beverages

With the rise in overweight, obesity, and associated non-communicable diseases in sub-Saharan Africa, there is need to assess the intake of a wider variety of foods in the population. The PMA2020 nutrition module included questions about the consumption of sugar-sweetened beverages (SSBs) and sweet and savory/fried snacks among women 10-49 years of age and children 6-59 months of age (Figure 6).

figure **6**

Consumption of savory or fried snacks, sugary foods, and sugar sweetened beverages yesterday (Burkina Faso and Kenya, 2018)



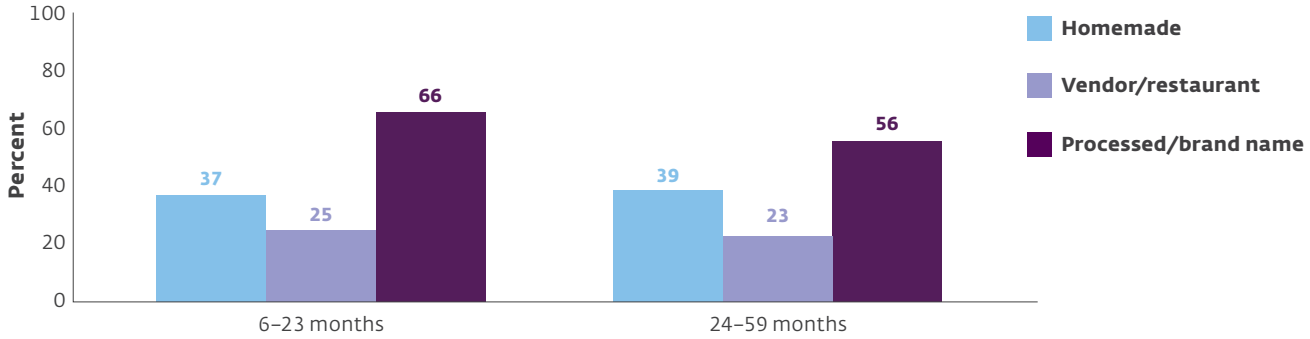
The aim of the questions was to identify "unhealthy" foods with low nutrient value. Perceptions around unhealthy foods and SSBs can vary widely by cultural context, making it challenging for resident enumerators to ask questions and classify foods into these categories. For the food group recall section in the Kenya questionnaire, we recorded "milk tea with added sugar" as a unique category because we knew that it was commonly consumed in the population and wanted to distinguish it from other forms of SSB like soda. In Figure 6 we counted "milk tea with sugar" as an SSB and saw that consumption rates among children were very high. However, when we only excluded "milk tea with sugar," SSB consumption among Kenyan children 6-59 months was 26%.

The rise in consumption of "processed" or commercially prepared snacks and beverages are of particular concern in these populations. In 2018, participants were asked the place of preparation[3] (i.e. if the snacks or beverages were homemade, prepared by a local vendor, or commercially processed/packaged), to better understand the sources of these foods.

The high consumption rates of milk tea with sugar among Kenyan children 6-59 months highlights the importance of the context-specific adaptation of the questionnaire to understand what was driving sugar-sweetened beverages consumption.

figure **7**

Place of preparation for SSBs among children who consumed them in the previous day (Burkina Faso, 2018)



Overall, it is feasible to ask about the consumption of SSBs, fried and sweet snacks using the questions as posed. However, careful training and questionnaire adaptation are needed. A more formal validation study would be useful to confirm this.

Dietary diversity: Methods Matter

The PMA2020 nutrition module included questions about food groups consumed in the previous 24 hours by children 6-23 months of age and women 10-49 years of age. We used the recommended questions and food group definitions from global guidance documents to calculate Minimum Dietary Diversity (MDD) indicators for each population.[4] In both survey rounds, we directly asked about whether each specific food group was consumed. Between rounds, the formatting of dietary recall questions was inadvertently changed in ODK for women, but not children (Figure 8). By comparing the two groups' results over time we discovered that the way the questions are formatted on the resident enumerator's screen appears to have a major impact on the estimates produced (Figure 9).

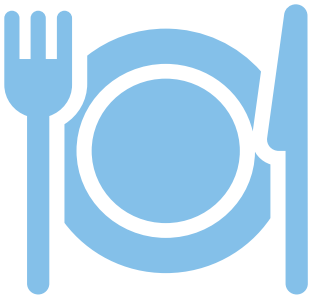
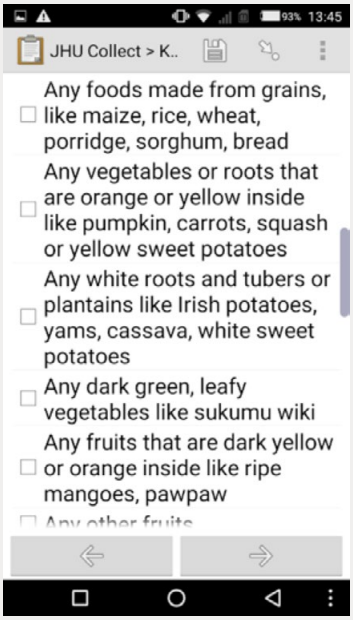


figure **8** **ODK presentation for questions about minimum dietary diversity for women (2017 and 2018)**

ROUND 1 (2017)

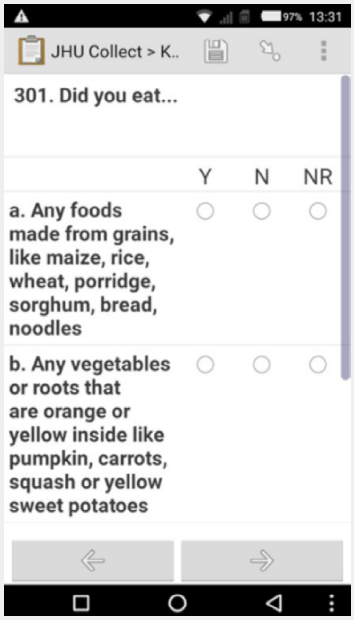


2017: One scrolling screen with a single check box for each item

- Assumed check = consumed in last 24 hours; no check = not consumed in last 24 hours
- Not possible to discern skipped or don't know

This format was used for MDD-W in 2017, but not MDD for children 6-23 months in either round.

ROUND 2 (2018)



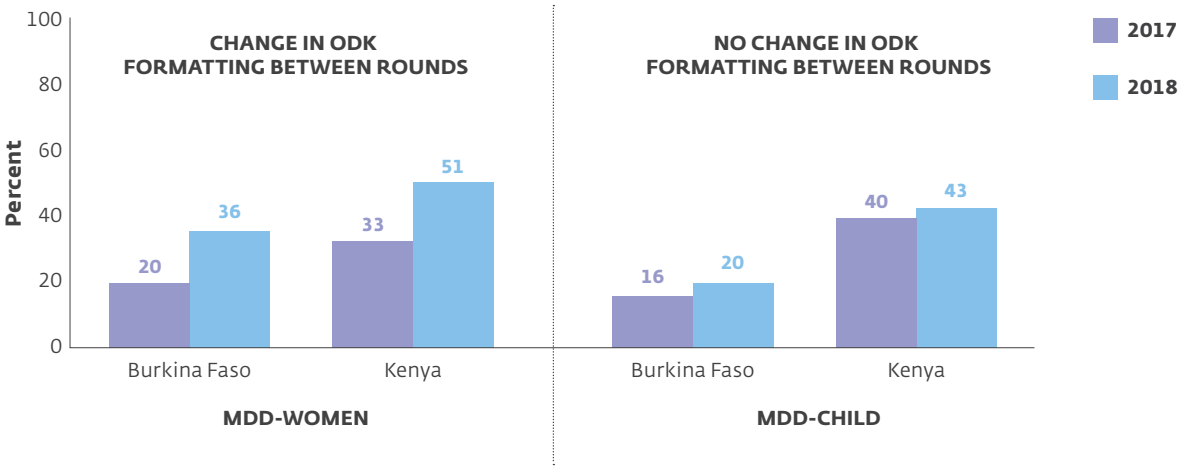
2018: Divide food groups across multiple screens and required that each group have one of three answers checked

- Yes
- No
- No response

This format was used for MDD-W in 2018 and MMD for children 6-23 months in both rounds.

figure 9

Percent achieving minimum dietary diversity for women 10-49 years and children 6–23 months (2017 and 2018)



Conclusion

The PMA2020 nutrition survey included questions about coverage of nutrition-specific interventions and diet that are not commonly measured in nationally representative household surveys. Our experience has shown that it is feasible to retrospectively ask about the coverage of breastfeeding counseling at key time points, complementary feeding counseling, micronutrient supplementation, as well as snack and SSB consumption in a national survey. These indicators required the development of new survey questions that have not yet been validated for accuracy of respondent recall, which provides new research opportunities. However, we found most to be internally consistent with expectations. The process of developing, applying, and refining questions between rounds provides important findings that can be applied to improving nutrition measurement in other population-based household surveys.

Photo: PMA2020/Burkina Faso

[1] The PMA2020 team incorporated a food fortification module from the Global Alliance for Improved Nutrition (GAIN) for Round 2 (2018) of the survey. The PMA nutrition module was also informed by questionnaires developed by the Helen Keller International Assessment & Research on Child Feeding (ARCH) project as well as questionnaires used by the International Food Policy Research Institute (IFPRI) and partners in evaluation of the Alive & Thrive program.

[2] According to the Ministry of Health in Kenya, it is national policy for women to receive a dose of Vitamin A at delivery or at the first visit to a health facility within the first 6 weeks postpartum. See: https://www.mchip.net/sites/default/files/mchipfiles/Immunization%20Policy%20Guidline.pdf

[3] In line with guidance from the Helen Keller International Assessment & Research on Child Feeding (ARCH) project.

[4] MDD-W was defined as the proportion of women who consumed ≥5 food groups yesterday per FAO/USAID/FANTA *Minimum Dietary Diversity for Women: A Guide to Measurement*. MDD for children was defined as the proportion of children 6-23 months of age who received food from ≥5 food groups yesterday (including breastmilk as a food group) per WHO/UNICEF *Global Nutrition Monitoring Framework Operational Guidance for Tracking Progress in Meeting Targets for 2025*.

Johns Hopkins Bloomberg School of Public Health

Bill & Melinda Gates Institute for Population and Reproductive Health

Data DENT
Data for Decisions to Expand Nutrition Transformation

Funding is provided by the Bill & Melinda Gates Foundation.

For more information, visit http://www.pma2020.org.