



Measuring diet outcomes with high-frequency phone interviews

FINDINGS

- Finding 1 - the FBR method results in significantly higher 7-day household dietary diversity scores than the SI method but similar 24-hour women's dietary diversity scores.
- Finding 2 - when the reference period is 7 days, respondents are more likely to report having consumed most food groups (12 of the 20 groups) with the FBR method.
- Finding 3 households assigned to the FBR method are more likely to report having consumed some food away from home (26 percentage points), to report that household members eat separately and in a specific order (16pp), and to report participating in religious fasting (25pp).

RATIONALE

In the context of designing surveys to assess diet diversity, two critical design choices come into play. First, we have the "**recall period**," which refers to the time frame during which respondents are asked to remember and report their dietary choices, for example, asking them what they ate last week. Second, there's the "**reference period**," which is the time frame over which a key outcome, such as dietary diversity, is measured. The interplay between these two choices creates a tradeoff when the reference and recall periods align. If the reference and recall periods are the same, it has a notable impact. A longer reference period can offer a more comprehensive view of dietary habits, allowing for the observation of seasonal, cyclical, or occasional dietary items. This extended window helps reduce errors of omission in the data as it captures a broader spectrum of eating habits (Beegle et al., 2011; Thorne-Lyman et al., 2014; Hanley-Cook et al., 2022). On the flip side, a longer recall period can place a heavier cognitive burden on survey respondents (Beegle et al., 2011; Clarke et al., 2008; Kjellsson et al., 2014). They may struggle to accurately recall specific details of their diet over an extended period, leading to recall errors. Respondents might revert to reporting their "usual" dietary practices or inadvertently engage in telescoping, where they mistakenly attribute past consumption to the reference period. **Therefore, striking the right balance between reference and recall periods in survey design is essential to gather accurate and meaningful data on diet diversity.**

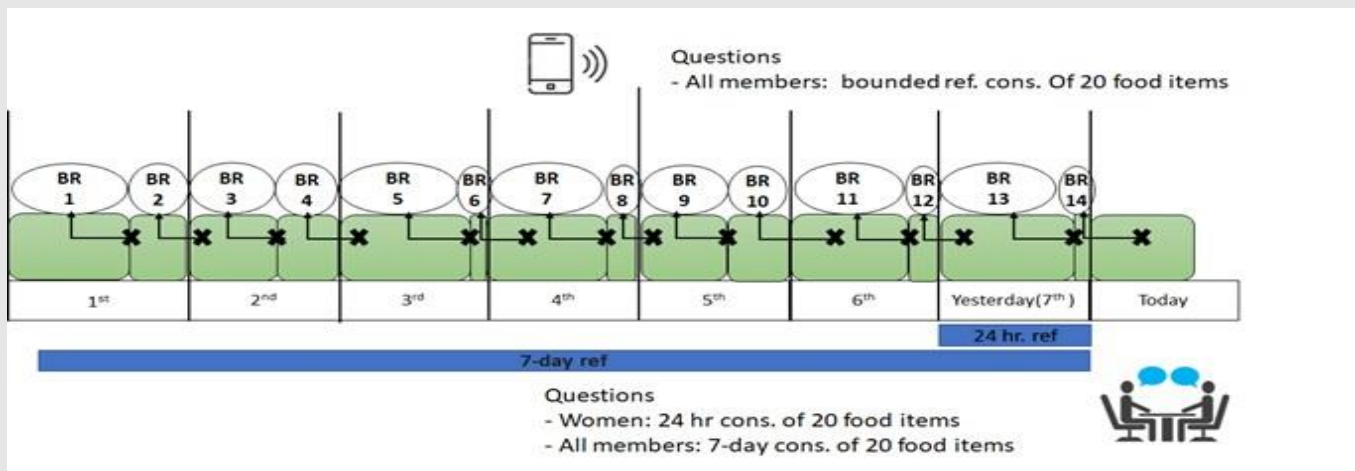


Figure 1. Each of a series of 14 phone calls (the black X) covers a bounded recall period (green boxes, top) of a few hours. The control group received a single interview in person covering an entire 24-hour or 7-day reference period (blue boxes, bottom). Diet diversity scores can be constructed for both groups based on aggregating over all food groups mentioned.

DATA

- Our study population includes households in northern Ethiopia that participated in two different multi-faceted graduation-from-poverty programs administered by two international NGO's (CARE Ethiopia and World Vision).
- Using program data from our NGO partners, we first collected the full roster of Village Economic and Savings Associations (hereafter VESA) groups that had been formed in the Northern Amhara region (Meket and Wadla districts)
- From this roster, we randomly selected 46 VESA groups comprised of 600+ households to recruit into our study. To avoid confounding timing of data collection with geographic characteristics, we randomly assigned each VESA group into one of eight distinct survey waves and visited each group in the assigned survey wave.

METHODS

To address the tradeoff between reference and recall periods in survey design, our innovative solution involves the implementation of short bounded recall periods. This approach enables us to effectively extend the reference period without imposing a burdensome, long recall period on survey respondents. In a randomized evaluation (as depicted in Figure 1), we compared this method to traditional single interviews (SI) in which control respondents reported their dietary intake during a standard in-person survey, where the length of the reference period is the same as the recall period.

In our frequent bounded recall (FBR) methodology, respondents were asked to provide short, focused dietary information twice a day over the course of seven days, with these calls marked with 'x.' The bounded recall (BR) period extended between these calls, allowing for an elongated reference period without overtaxing respondents' cognitive recall abilities.

To measure the outcome, our enumerators actively listened to women describing their meals and ingredients, and meticulously coded consumption using a list of 20 food groups. We then constructed two widely used measures: Household diet diversity scores (HDDS) and Women's diet diversity scores (WDDS).

Our empirical analysis aimed to discern differences in reported dietary diversity, comparing results obtained from two standard reference periods, specifically the 24-hour and 7-day reference periods. This innovative approach provides a promising solution to the reference-recall period tradeoff in survey design, ultimately offering valuable insights into dietary habits and diversity.

CONTACT

Thomas Assefa
(Thomas.assefa@uga.edu)

Ellen B. McCullough
(ellenm@uga.edu)

Tamara J. McGavock
(mcgavock@grinnell.edu)

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FINDINGS

We find that the FBR method results in significantly higher 7-day household dietary diversity scores than the SI method but similar 24-hour women's dietary diversity scores. Respondents report similar food item consumption, regardless of survey method (FBR vs SI) when the reference period is short (24-hour). When the reference period is 7 days, respondents are more likely to report having consumed most food groups (12 of the 20 groups) with the FBR method. With the SI method and a 7-day outcome, respondents are likely forgetting to mention many foods due to the cognitive burden of reconstructing diets over such a long period. The food groups that are over-reported with the SI method (8 of the 20 groups) tend to be infrequently consumed, suggesting that households given a long recall period may forward-telescope—that is, respondents and erroneously include consumption episodes that occurred outside of the 7-day reference period. We see differences across survey methods in measurement of other diet outcomes as well. Specifically, households assigned to the FBR method are more likely to report having consumed some food away from home (26 percentage points), to report that household members eat separately and in a specific order (16pp), and to report participating in religious fasting (25pp).

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