Food and Agriculture Organization of the United Nations

KAP manual

Guidelines for assessing nutrition-related Knowledge, Attitudes and Practices

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Food and Agriculture Organization of the United Nations,
Rome, 2014

ISBN 978-92-5-108097-9 (print)
E-ISBN 978-92-5-108098-6 (PDF)

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To obtain the electronic version of the manual and the KAP model questionnaires in MS Word format please go to:
www.fao.org/docrep/019/i3545e/i3545e00.htm

Cover photo: Interviewing a caregiver in Otdar Meanchey, Cambodia. ©FAO/Yvette Fautsch Macías

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Acronyms

DDS	Dietary diversity score
FBDG	Food-based dietary guidelines
FFQ	Food frequency questionnaire
KAP	Knowledge, attitudes and practices
UNICEF	United Nations Children's Fund
WHO	World Health Organization

Acknowledgements

The authors are grateful to all of those who contributed to the development of this manual.

Many people reviewed the first draft of the model questionnaires presented in Appendix 6, including Catherine Bessy (FAO Headquarters), Lalita Bhattacharjee (FAO Bangladesh), Florence Tonnoir (FAO Gabon), Shubhada Kanani (Network for Nutrition Awareness and Advocacy [NETNAA] India) and Pauline Samuda (Caribbean Food and Nutrition Institute, University of the West Indies, Jamaica). Their comments and suggestions contributed to improving the questionnaires.

The questionnaires were field-tested and validated in several countries; Delhi Anahí Trejo Hernández, Graciela Raya Giorguli, Estela Herrera Martignon, Jenifer Guerrero Morales and Elia Irene Corzo Nájera from the PESA Programme (Programa Especial para la Seguridad Alimentaria) in Mexico; Ana Elizabeth Hernández Marroquin, Cindy Elena and Rose Marie Rivas in El Salvador; Solange Heise in Malawi; and Yvette Fautsch Macías in Cambodia. These nutritionists trained and supervised enumerators, reported the results and modified the questionnaires accordingly. This process ensured that the questionnaires were valid, readable, easy to administer and were not burdensome for respondents. The guidelines also benefited greatly from lessons learned from the field-testing experience and the authors thank all those involved. Special thanks go to Iean Russell and the FAO staff in Cambodia for providing the facilities to conduct the field tests in that country.

Within FAO, Carmen Dardano, Jane Sherman, Gina Kennedy, Theresa Jeremias and Warren Lee provided very useful practical advice on both the guidelines and the questionnaires at various stages of the manual's development. Ellen Muehlhoff reviewed and approved the final version.

The final document was edited by Paul Neate and designed and laid out by Joanne Morgante.

1 Introduction

1.1 Background

Programmes and interventions in various sectors are increasingly aimed at improving nutrition. As a result, a growing number of professionals from diverse backgrounds are planning, implementing and evaluating interventions that include a nutrition component.

Implementing efforts to improve nutrition and measuring their impact requires suitable indicators and tools. Indicators of nutritional status are the most common indicators for assessing the impact of interventions with a nutrition focus. Formulating and designing targeted programmes and interventions, however, require more than just measuring nutritional status; they require a thorough understanding of what people actually eat and what personal factors underlie people's dietary habits.

Studies that assess and analyse people's nutrition-related knowledge, attitudes and practices (KAP) are a useful method for gaining such an insight into peoples' personal determinants of their dietary habits. They can thus provide valuable inputs for effective programme and project planning. In addition, KAP studies are indispensable for evaluating nutrition-education and communication interventions, i.e. activities that explicitly address (and aim to improve) people's nutrition-related knowledge, attitudes and practices.

1.2 Why was this manual prepared?

Many KAP studies have been conducted by numerous researchers and institutions using a variety of approaches. In consequence, results of nutrition-related KAP surveys usually cannot be compared because of major differences in study design (quantitative, qualitative) and in how knowledge, attitudes and practices are defined and measured. Many reports do not provide detailed information about these crucial elements of the research protocol, and as a result the studies cannot be reproduced (1–7). Reports of KAP studies conducted in community settings by non-governmental organizations and international agencies also display major inconsistencies in the way findings are reported.

Some guidelines for conducting KAP studies already exist (8–10) and provide steps for the preparation and implementation of quantitative surveys. None of them, however, provides model questionnaires for assessing nutrition-related KAP, nor do they offer guidance for using KAP information within a situation analysis or for evaluating outcomes in the context of nutrition projects.

This manual aims at improving this situation by:

- offering guidance for the effective planning, implementation and analysis of nutrition-related KAP surveys at the community level; and
- contributing, through model questionnaires, to the standardization of KAP studies and thus to the comparability of their results.

1.3 What does this manual provide?

The manual offers guidance and practical steps for planning and conducting a KAP survey, and for analysing and reporting the survey findings. In order to keep the manual brief and focussed, we did not include detailed information on basic social research techniques such as sampling methods, statistical analyses or outcome evaluation designs. Where such information is particularly relevant to KAP studies, we highlight the issue.

The appendixes provide additional information on key topics, including a large collection of model questionnaires (referred to in this manual as modules) that were developed to facilitate the design of KAP survey questionnaires (Appendix 6, page 78). These modules comprise predefined questions that capture information on critical knowledge, attitudes and practices related to the 13 most common nutrition issues:

- Module 1: Feeding infants younger than 6 months
- Module 2: Feeding young children (6–23 months)
- Module 3: Diet of school-aged children
- Module 4: Nutrition during pregnancy and lactation
- Module 5: Undernutrition
- Module 6: Iron-deficiency anaemia
- Module 7: Vitamin A deficiency
- Module 8: Iodine deficiency
- Module 9: Food safety
- Module 10: Personal hygiene
- Module 11: Water and sanitation
- Module 12: Food-based dietary guidelines
- Module 13: Overweight and obesity

1.4 How should you use this manual?

This manual is a practical reference guide for anyone planning to conduct nutrition-related KAP surveys at the community level. The guidance provided will be most useful to project managers or evaluators who want to:

- obtain information on local nutrition issues and gaps in KAP before they formulate nutrition projects and interventions or

- evaluate the outcomes of nutrition interventions in general, and nutrition education in particular.

Such nutrition interventions can have many different objectives, ranging, for instance, from increasing quantity and quality of food produced (food diversity), improving access to food, promoting home gardening, to feeding programmes and – not least, of course – nutrition education. Educational interventions are a common response to issues described and measured with KAP studies, given that KAP surveys by definition investigate people's knowledge and attitudes. This manual uses examples from and refers to nutrition education measures, but this is not to say that KAP surveys are exclusively of relevance in the context of nutrition education interventions.

1.5 How was this manual prepared?

The starting point of this manual was a review of KAP survey methodologies and KAP studies in the literature, including survey methodologies from Médecins du Monde (10) and the World Health Organization (9). The authors also analysed a few such studies conducted by FAO and its partners and reviewed an e-learning course, *Assessing impact of development programmes on food security*, prepared by FAO and the Wageningen UR Centre for Development Innovation. This provided an overview of the current state of affairs in KAP studies and allowed the authors to identify current best practices.

FAO's *Family nutrition guide* (11) and the World Health Organization's (WHO) *Five keys to safer food manual* (12) guided the development of the modules and provided answers to knowledge questions. Questions on infant and young child feeding practices were adapted with permission from documents published in 2010 by WHO (13). The form of the questions was informed by the United Nations Children's Fund (UNICEF) Multiple Indicator Cluster Surveys and the Demographic and Health Surveys, whose questions have been tested and are considered reliable and valid. The modules included in this manual were field-tested in Cambodia, Malawi, Mexico and El Salvador to ensure that they are valid, readable, easy to administer and are not too much of a burden for the respondents.

2

Concepts and purpose of KAP surveys

2.1 Terminology

Information on KAP is captured using questions and is stated in terms of indicators. To understand KAP surveys, you must be familiar with the following terminology.

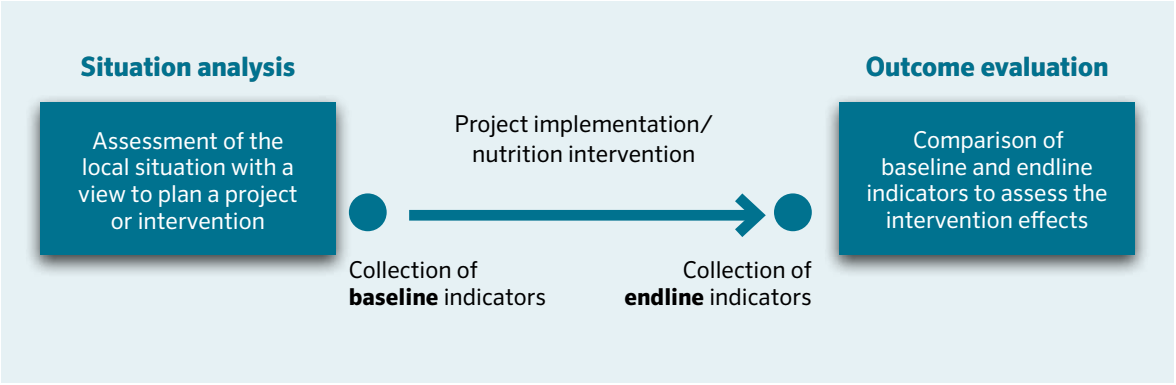
- **Indicator:** Specific aspects of KAP to be measured. In this manual, indicators are mainly stated in terms of numbers, percentages or scores and are used to describe general trends concerning the KAP of a population or to measure changes that occur after an intervention.
- **Question:** Instrument to collect information about an indicator.
- **Outcome:** Specific measurable result of an intervention. This refers to changes in KAP identified by comparing values of indicators from before and after the intervention was introduced.
- **Participant population:** Population that will participate in the intervention.
- **Survey population**: Population that will participate in the KAP surveys. Depending on the circumstances, the survey population can be the entire participant population or a sample of it.
- **Respondent:** An individual from the survey population who responds to the KAP survey questionnaire (also referred to as an informant).
- **Surveyor/interviewer/enumerator:** A trained individual who conducts interviews with respondents of the survey population and fills out the KAP survey questionnaire.
- **Survey manager/supervisor:** An individual responsible of preparing, managing and conducting KAP surveys. He/she forms teams or groups, develops schedules for the teams and provides itineraries for them, including roadmaps, names of villages, phone numbers and other information that might be useful. He/she is also responsible for checking that questionnaires are filled out correctly and annotations are legible, for analysing the collected data and writing the final report.
- **Survey team:** Survey managers and surveyors who work together on the same survey.
- **Planner:** A project planner who analyses the nutrition situation with a view to planning a project or intervention.
- **Evaluator:** A project manager or external evaluator who evaluates the outcomes of nutrition interventions/projects.

2.2 Purpose

KAP studies emerged in the 1950s from the need to measure opposition to family planning services (14). Since then, they have been used extensively in family planning and population studies to evaluate and guide existing programmes, and their use has extended to other areas of health, including nutrition.

Nutrition-related KAP studies assess and explore peoples' KAP relating to nutrition, diet, foods and closely related hygiene and health issues. KAP studies have been used for two main purposes: (1) to collect key information during a situation analysis, which can then feed into the design of nutrition interventions and (2) to evaluate nutrition education interventions (Figure 1).

FIGURE 1: **Situation analysis and outcome evaluation**



Situation analysis for intervention planning

In the context of nutrition-related projects or programmes, a situation analysis describes the type and magnitude of nutrition issues and identifies possible causes of the nutritional problems observed. The findings of a situation analysis will help in planning a nutrition intervention aimed at alleviating the nutrition problems identified.

KAP studies can contribute to a situation analysis by helping determine the existing knowledge, attitudes and practices relating to nutrition, which identifies nutrition education priorities. The steps involved are as follows (1–18):

- **"What we've got":**
  - » Identify local nutrition problems through secondary sources (e.g. national health statistics). *Prioritize the nutrition issues* that are most amenable to educational means.
  - » *Identify people's dietary practices* that are underlying the nutrition problems.
  - » Identify intrapersonal determinants of these practices, such as nutrition-related *knowledge and attitudes*.

- **"What we need":**
  - » *Identify gaps* in people's knowledge, attitudes and dietary practices.
  - » *Identify priority needs* in nutrition education with a view to informing project or intervention design.

***Note**: A situation analysis is different from a baseline survey. A situation analysis has a planning function and is conducted during the project planning phase, whereas a baseline survey is part of monitoring and evaluation of the project or intervention and is conducted at the beginning of the implementation phase.*

Outcome evaluation

Monitoring and evaluation are an essential part of project or intervention implementation and management, helping ensure that the project or intervention is on track and achieving its intended outcomes. They also allow project managers to demonstrate to funding agencies, participants and local stakeholders that project funds were well spent and that goals were achieved.

An outcome evaluation is an assessment conducted at the end of a project and provides information about the outcomes of the intervention (15, 19). It also demonstrates the intervention's effectiveness by comparing levels of indicators before and after the project or intervention was implemented.

Evaluations of nutrition interventions often focus on the long-term effects or impacts of the interventions. These are expressed in terms of biochemical and clinical indicators of nutritional status (for example, haemoglobin levels) and indicators of growth in children, including wasting (being too thin for one's height), stunting (being too short for one's age) and underweight (being too thin for one's age). These long-term indicators do not detect intermediate outcomes and must therefore be supplemented by indicators of short- and medium-term outcomes. Short-term outcomes are immediate results of an intervention, such as changes in knowledge and prevailing attitudes (15, 20). Medium-term outcomes are apparent only after a more extended period and commonly result in changes in behaviour (i.e. practices).

In contrast to indicators of physiological and health outcomes, these are social, psychological and behavioural outcomes, and are thus particularly relevant to monitoring the impact of nutrition education (19, 21) (Table 1).

***Note**: Assessing nutrition-related knowledge, attitudes and practices offers an opportunity to better understand a given situation by providing insights into the social, psychological and behavioral determinants of nutritional status.*

TABLE 1:

Examples of short-, medium- and long-term outcomes of nutrition interventions that include an educational component

Short-term outcomes	Medium-term outcomes	Long-term outcomes (impact)
Social, psychological and behavioural outcomes		Physiological and health outcomes*
Changes in intrapersonal determinants of practices Knowledge and attitudes, among others	**Changes in nutrition-related practices**	**Changes in physiological parameters** Nutritional status and biochemical indicators
Knowledge • Increased understanding of the benefits of breastfeeding • Increased knowledge of reasons for feeding young children with thick porridge rather than watery porridge • Increased awareness of the consequences of short-term hunger at school • Increased knowledge of ways to prevent food poisoning **Attitudes** • Increased confidence in being able to prepare and enriched porridge (self-efficacy/confidence) • Increased belief in benefits of dietary diversity (perceived benefits) • Increased preference for targeted foods (food preference) • Greater readiness to wash one's hands before eating (readiness to change)	• Increased intake of iron-rich foods among pregnant women • Increased meal frequency among young children • Increased dietary diversity • Decreased consumption of soft drinks • Greater use of iodized salt	• Increased haemoglobin levels among women • Decreased stunting rates in children • Decreased underweight rates among infants • Increased weight gain among pregnant women (*Note*: In food security projects or programmes, impacts refer to changes in household food insecurity, household hunger, household expenditure, wealth index and similar measures)

* The long-term outcomes (i.e. impact or physiological and health outcomes) should only be evaluated several months or even years after the completion of the programme because long-term effects take time to manifest.

***Note**: The boundary between short- and medium-term outcomes is less distinct than that between medium-term and long-term outcomes. For example, some aspects of the dietary behaviour can change immediately after a nutrition education intervention.*

2.3 Key indicators: knowledge, attitudes and practices

Knowledge

Definition of knowledge

Knowledge is the understanding of any given topic (8). In this manual, it refers to an individual's understanding of nutrition, including the intellectual ability to remember and recall food- and nutrition-related terminology, specific pieces of information and facts.

Measurement of knowledge

Partially categorized questions

Partially categorized questions are open-ended questions that require respondents to provide short answers in their own words, accompanied by a list of correct answers plus the options "Other" and "Don't know." Predefined options make analysis easier by listing expected responses. After the surveyor has asked the question, he/she should write down the response provided and then categorize it according to the predefined response options.

***Note**: The respondent may not give the response exactly as it is written in the questionnaire. It is up to the surveyor to understand the **meaning** of the responses given and tick the closest answer in the list.*

Knowledge questions can have a single answer or several answers.

Example of question with a single answer

At what age should babies start eating foods in addition to breastmilk?

_____

_____

- ☐ *At six months*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Example of question with several possible answers

There are key moments when you need to wash your hands to prevent germs from reaching food.

What are these key moments?

_____

_____

- ☐ *After going to the toilet/latrine*
- ☐ *After cleaning a baby's bottom/changing a baby's nappy*
- ☐ *Before preparing/handling food*
- ☐ *Before feeding a child/eating*
- ☐ *After handling raw food*
- ☐ *After handling garbage*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

☐ Knows

☐ Does not know

Number of correct responses ____

Preliminary analysis

A box is provided to allow the surveyor to make a preliminary analysis of the responses to knowledge questions. If the question has a single correct answer, the options are "Knows" or "Does not know." If the question has several correct answers, the options are "Knows" (if the respondent gives one, some or all possible correct answers), "Does not know" (if the respondent gives no correct answers) and "Number of correct responses" (to indicate the number of correct answers provided).

The surveyor can make the preliminary analysis during the interview if he/she has the requisite analytical skills. If, however, the surveyor is unable to perform this analysis, the supervisor should do it based on the surveyor's notes, cross-checking with the surveyor if necessary.

Other types of questions

Knowledge can also be measured through multiple choice questions and true/false questions. We do not recommend these types of questions because the responses can be the result of guessing and therefore give a false impression of knowledge.

Indicators used to quantify knowledge

Indicators of knowledge can be reported in terms of numbers, percentages or scores.

Number

Examples of numerical indicators include:

- number of respondents who know the correct answer to a question;
- number of respondents who do not know the correct answer to a question;
- number of respondents who know all of the correct answers to a question; and
- number of respondents who know three correct answers to a question, two correct answers and so on.

Percentage

Percentages used as indicators of knowledge are determined from the numerical indicators. For example:

- percentage of respondents who know the correct answer to a question;
- percentage of respondents who do not know the correct answer to a question;
- percentage of respondents who know all of the correct answers to a question; and
- percentage of respondents who know three correct answers to a question, two correct answers and so on.

Score

For a score-based indicator of knowledge, each respondent is given a score based on the number of correct responses provided. The knowledge score of the population is calculated for each question by dividing the total number of correct responses by the number of respondents who answered the particular question. Exclude respondents who did not answer the question, or for whom information is incomplete.

$$\text{Score of knowledge per question} = \frac{\text{Sum of correct responses given by all respondents}}{\text{Total number of respondents}}$$

Attitudes

Definition of attitudes

Attitudes are emotional, motivational, perceptive and cognitive beliefs that positively or negatively influence the behaviour or practice of an individual (16, 22). An individual's feeding or eating behaviour is influenced by his/her emotions, motivations, perceptions and thoughts (23). Attitudes influence future behaviour no matter the individual's knowledge and help explain why an individual adopts one practice and not other alternatives (10). The terms attitude, beliefs and perceptions are interchangeable.

Measurement of attitudes

Attitudes are measured by asking the respondents to judge whether they are positively or negatively inclined towards:

- a health or nutrition problem;
- an ideal or desired nutrition-related practice;
- following nutrition recommendations or food-based dietary guidelines;
- food preferences; or
- food taboos.

The respondent is asked to rate his/her answer on a three- or five-point scale (see "Box 1: Attitudes – three or five-point scale?"), called a Likert scale (8, 14–16, 23, 24). This method is used for grading the intensity of respondents' attitudes. This can be done orally or with a visual support (see Appendix 1, page 69) so as to help respondents with little education.

We recommend the use of attitude questions offering three response options:

- one positive;
- a "middle option" that captures attitudes that are still uncertain; and
- one negative.

Open-ended questions can be added in order to gain understanding of why respondents gave a specific answer; these are optional and are only relevant to a situation analysis.

Questions in the modules that are aimed at measuring attitudes were developed based on the Health Belief Model.[1] According to this model, people's beliefs influence their health-related actions (15, 25, 26). It states that the likelihood that an individual will take action to prevent a health problem depends on the individual's perception of the condition's severity and his/her likelihood of getting it, on the benefits of and barriers to taking action to reduce the risk of getting the condition and on his/her confidence in taking action. Additional variables related to food consumption and food taboos were also included as attitudes. The definitions of the attitude indicators are presented below and their measurement is illustrated in the form of scaled questions.

Attitudes towards a health or nutrition problem

When measuring both perceived susceptibility and severity, you should specify:

- the health or nutrition problem of interest; and
- the population related to this problem.

[1] A health behaviour model is commonly used in health programmes to understand and explain human behaviour and factors that influence it, as well as to promote behaviour change. It can also be used as a basis for developing questions for measuring dietary knowledge and attitudes (25). The Health Belief Model was selected as its variables are easily measurable through survey questions; other models use variables that require the use of qualitative methods.

Perceived susceptibility

Perceived susceptibility refers to an individual's beliefs regarding his/her own or other's vulnerability to a health or nutrition problem.

Example: Measuring the perceived susceptibility to iron deficiency/anaemia

How likely do you think you are to be iron-deficient/anaemic?

- ☐ 1. Not likely
- ☐ 2. You're not sure
- ☐ 3. Likely

If Not likely:

Can you tell me the reason why it is not likely?

_____

_____

Perceived severity

Perceived severity refers to an individual's beliefs regarding the severity of a health or nutrition problem.

Example: Measuring the perceived severity of signs of severe malnutrition

How serious do you think undernutrition is for a baby's health?

- ☐ 1. Not serious
- ☐ 2. You're not sure
- ☐ 3. Serious

If Not serious:

Can you tell me the reason why it is not serious?

_____

_____

BOX 1

Attitudes – three or five-point scale?

The modules in this manual use a three-point scale because pre-testing showed it was easier to measure attitudes with a three-point scale than with a five-point scale. Respondents with little education felt confused by the five-point scale, i.e. by having to select among five different options. If you are dealing with better educated participants, you could modify the questions to use the five-point scale, but you would then need to pre-test the questions before using them in a survey.

Attitudes towards an ideal nutrition-related practice

Perceived benefits

Perceived benefits refer to an individual's beliefs regarding the benefits he/she or someone else would gain from a practice.

Example: Measuring perceived benefits of giving different types of food to a child each day

How good do you think it is to give different types of food to your child each day?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

Perceived barriers reflect an individual's beliefs regarding the difficulties arising from engaging in a practice.

Example: Measuring perceived barriers to breastfeeding

How difficult is it for you to breastfeed your baby exclusively for six months?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

Self-confidence

Self-confidence refers to an individual's beliefs regarding his or her own ability to perform a practice or his or her confidence in doing so.

Example: Measuring a mother's self-confidence in preparing enriched porridge for her child

How confident do you feel in preparing food for your child?

- ☐ 1. Not confident
- ☐ 2. Ok/so-so
- ☐ 3. Confident

If Not confident:

Can you tell me the reasons why you do not feel confident?

_____

_____

Readiness to change (optional)

You can assess a respondent's readiness to adopt a new or ideal nutrition-related practice using the Transtheoretical Model of Behaviour Change (15, 26, 27). This evaluates changes in self-reported behaviour (practice) and progress towards achieving the ideal behaviour.

Appendix 2 (page 70) provides further information on how to measure readiness to change in nutrition-related KAP studies.

Attitudes towards following nutrition recommendations or food-based dietary guidelines

Perceived importance of following a nutrition recommendation

This addresses beliefs concerning the importance of following a nutrition recommendation, advice or message delivered through nutrition education or included in food-based dietary guidelines (FBDG) (28). This indicator can help establish a link between FBDG and changes in dietary behaviour.

Example: Measuring attitude towards the Guatemala Food Guide

How important is it to follow the Guatemala Food Guide?

- ☐ 1. Not important
- ☐ 2. You're not sure
- ☐ 3. Important

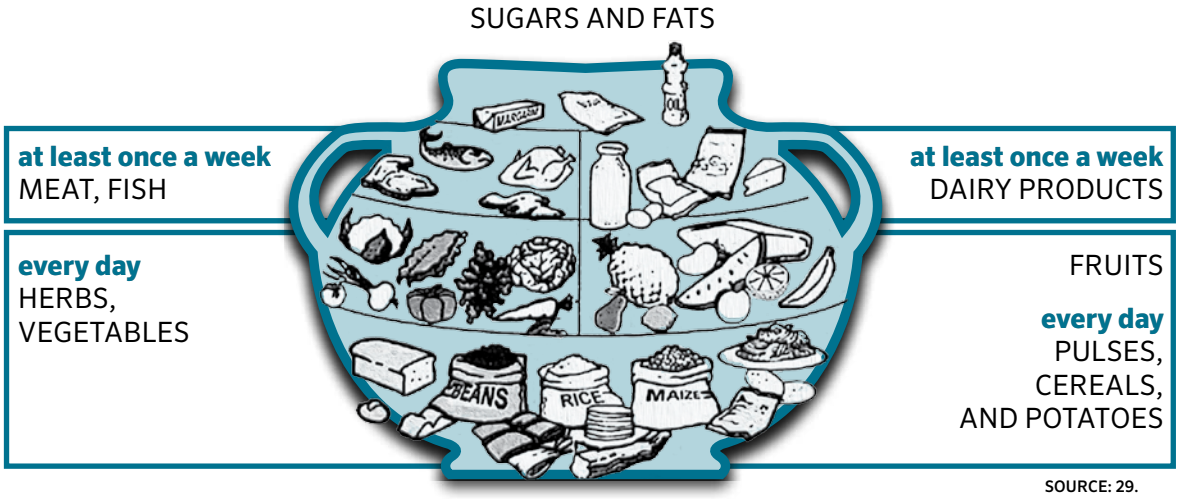
If Not important:

Can you tell me the reasons why it is not important?

_____

_____

FIGURE 2: **Guatemala Food Guide**



SOURCE: 29.

How important is it to follow the recommendation to consume dairy products at least twice a week?

- ☐ 1. Not important
- ☐ 2. You're not sure
- ☐ 3. Important

If Not important:

Can you tell me the reasons why it is not important?

_____

_____

Attitudes towards food preferences

Food preferences should be assessed if one of the aims of the survey is to assess the acceptability of a specific food or meal. Food preferences are defined as sensory-affective responses to a food or flavour that influence food choice and dietary practices (15). Food preferences are often assessed to determine if food items would be accepted before promoting them or to assess changes in preference or enjoyment of foods promoted during an intervention.

Example: Measuring liking for the flavour of soybeans

How much do you like the flavour of soybeans?

- ☐ 1. Dislike
- ☐ 2. Not sure
- ☐ 3. Like

Attitudes towards food taboos

Food taboos are dietary rules in a given culture, society or community that prescribe or proscribe certain food items or uses (30, 31). Food taboos are often associated with special events or phases of the human life cycle, such as illness, menstruation, pregnancy, childbirth, lactation, weddings, funerals, battles, etc. Many taboos concern the consumption of animal-source foods, often by those groups of the community most in need of protein (32). For example, in the Mid-Western Region of Nigeria, meat and eggs are not usually given to children because parents believe it will make the children steal (33). Liver is also commonly taboo for children because it is believed to cause abscesses in their lungs.

Food taboos can be assessed by evaluating the level of agreement with them. This assumes that survey managers have at least some idea of what taboos already exist in the population. Researchers can obtain information about local food taboos from previous studies of food taboos in the region or country. If no such studies are available, the project will have to identify food taboos before conducting the KAP survey; it can do this by using qualitative methods with a small group of the participant population (for example, during the situation analysis). Appendix 8 (page 178) provides basic information about methods for collecting and analysing qualitative data.

Only food taboos that could negatively affect nutritional status need be assessed, as these are the only ones that need to be modified.

Example: Assessing a food taboo against lactating women consuming beans

> Some people believe that it is not good for a lactating woman to eat beans because it might cause her to produce low-quality breastmilk that could be harmful to the baby. Do you disagree with this belief, you're not sure or do you agree?
>
> ☐ 1. Disagree
>
> ☐ 2. Not sure/neutral
>
> ☐ 3. Agree

Indicators used to quantify attitudes

Indicators used to quantify attitudes can be reported in terms of numbers, percentages or scores.

Number

Examples of numerical indicators of attitudes include:

- number of respondents who think that their child is likely to become underweight (perceived susceptibility);
- number of respondents who think that their child is not likely to become underweight (perceived susceptibility);
- number of respondents who believe that oedema of both feet is a serious problem for a baby's health (perceived severity);

- number of respondents who are not sure that adding fish to a baby's meal is good (perceived benefits);
- number of respondents who think that breastfeeding their child is difficult or somewhat difficult (perceived barriers); and
- number of respondents who feel confident in preparing an enriched porridge for their child (perceived self-efficacy).

Percentage

Percentages used as indicators of attitudes are determined from the numerical indicators. For example:

- percentage of respondents who think that their child is likely to become underweight (perceived susceptibility);
- percentage of respondents who think that their child is not likely to become underweight (perceived susceptibility);
- percentage of respondents who believe that oedema of both feet is a serious problem for a baby's health (perceived severity);
- percentage of respondents who are not sure that adding fish to a baby's meal is good (perceived benefits);
- percentage of respondents who think that breastfeeding their child is difficult or somewhat difficult (perceived barriers); and
- percentage of respondents who feel confident in preparing an enriched porridge for their child (perceived self-efficacy).

Score

For a score-based indicator of attitude, a numerical value or score is assigned to each choice in the range of responses. For example, if a question uses a five-point scale, a score of 1 might be given to "strongly disagree", 2 to "disagree", 3 to "don't know", 4 to "agree" and 5 to "strongly agree". The attitude score of the population is calculated for each question by dividing the total score for all participants who answered the question by the number of respondents who answered the question. Exclude respondents who did not answer the question, or for whom information is incomplete.

$$\text{Score of attitude per question} = \frac{\text{Sum of the scores of all respondents}}{\text{Total number of respondents}}$$

TABLE 2:

Health and nutrition-related attitudes

Attitudes towards a health or nutrition problem	
Perceived susceptibility	Beliefs regarding own or other's vulnerability to a health or nutrition problem
Perceived severity	Beliefs regarding the severity of a health or nutrition problem
Attitudes towards an ideal nutrition-related practice	
Perceived benefits	Beliefs regarding the benefits an individual would gain from a practice
Perceived barriers	Beliefs regarding the difficulties arising from engaging in a practice
Self-confidence	Beliefs regarding own ability to perform a practice or confidence in doing so
Readiness to change	Readiness to adopt a new or ideal nutrition-related practice
Attitudes towards following nutrition recommendations or food-based dietary guidelines	
Perceived importance of following a nutrition recommendation	Beliefs concerning the importance of following a nutrition recommendation, advice or message delivered through nutrition education or included in a food-based dietary guideline
Other attitudes	
Food preferences	Sensory-affective responses to a food or flavour that influence food choice and dietary practices
Attitudes towards food taboos	Level of agreement with a food taboo that could negatively affect nutritional status

Practices

Definition of practices

In this manual, the term "practices" is defined as the observable actions of an individual that could affect his/her or others' nutrition, such as eating, feeding, washing hands, cooking and selecting foods.

Practice and behaviour are interchangeable terms, although practice has a connotation of long-standing or commonly practiced behaviour (15).

Measurement of practices and indicators used to quantify them

This manual presents methods to assess nutrition-related practices in terms of:

- dietary diversity (quality of the whole diet)
- intake of specific foods
- frequency of intake of specific foods and
- specific observable behaviours.

Table 3 (page 25) summarizes the different measurements used to quantify practices and their specific uses.

Dietary diversity

Dietary diversity is a characteristic of the quality of the diet (34). Although dietary diversity is not a practice *per se*, it reflects the food consumption of individuals and is a proxy for the macro- and micronutrient adequacy of the diet. Dietary diversity must be assessed if an intervention aims to improve nutrition by increasing dietary diversity.

Assessing dietary diversity in adults

Dietary diversity in adults is assessed by administering a dietary diversity questionnaire (34). This is a rapid, user-friendly and easily administered low-cost assessment tool that consists of a simple count of food groups that an individual has consumed over the preceding 24 hours. The indicator of dietary diversity, the dietary diversity score (DDS), is calculated by summing the number of food groups consumed by the individual respondent over the 24-hour recall period.

> ***Note**: There are no established cut-off points in terms of number of food groups to indicate adequate or inadequate dietary diversity in adults. Rather, it is recommended that the mean score be used to assess changes in the diet before and after an intervention. In other words, DDSs in adults are better suited for outcome evaluation than situation analysis. Nevertheless, diets with four or more food groups tend to be nutritionally acceptable.*

Assessing dietary diversity in young children (6–23 months)

In this manual, dietary diversity of young children is assessed using a food consumption questionnaire (Appendix6, Module 2: Feeding young children (6-23 months), page 89). This is an alternate method to the 24 hour recall to collect information on food groups consumed; it records consumption of seven food groups (13). The minimum dietary diversity indicator is calculated as the percentage of children aged 6-23 months who receive foods from four or more food groups.

$$\text{Minimum dietary diversity indicator} = \frac{\text{Number of children aged 6–23 months who received food from four or more food groups during the previous day}}{\text{Number of children aged 6–23 months}} \times 100$$

Breastmilk is not included among the food groups; this indicator reflects the quality of the complementary food diet.

BOX 2:

Measuring infant and young-child feeding practices

The World Health Organization (WHO) has developed guidelines on ***Indicators for assessing infant and young child feeding practices*** (13).

Modules 1 (Feeding infants younger than 6 months) and 2 (Feeding young children (6–23 months)) (Appendix 6) include some questions that were taken from the infant and young-child feeding module (13)) and adapted with permission from WHO to fit the needs of the KAP survey methodology.

Twenty-four-hour dietary recalls may not be practical in community or field settings (35, 36). Food-intake checklists, short food-frequency questionnaires and nutrition behaviour checklists are sufficient to find out about food practices of a population. They are also rapid, easy to administer and less expensive than 24-hour-recall surveys (15, 37, 38). Such approaches reduce response burden while being practical, straightforward and more targeted to the specific objectives of the survey.

Intake of specific foods

Measurement: Short food-intake checklists

A food-intake checklist is a simplification of the 24-hour dietary recall approach; it asks whether a particular food or list of foods was consumed the previous day (24 hours), with the answer being a simple yes or no (28). Short food-intake checklists focus on available food sources of the nutrient of interest and must be tailored to the survey population in order to accurately assess usual intake. For example, if we would like to assess the intake of vitamin-A-rich fruits, we should prepare a short food-intake checklist of locally available vitamin-A-rich fruits.

Yesterday, during the day and night, did you consume any [**food item**]*?*

[food item] ☐ Yes**.....** ☐ No

Example: Measuring intake of foods from the vitamin A-rich fruits group

I would like to ask you about particular foods you may eat on their own or as part of a dish.

Yesterday, during the day and night, did you consume any of the following foods?

(Read the list of vitamin-A-rich foods and tick yes or no for each food item)?

Ripe mango or juice of ripe mango? ☐ Yes ☐ No

Cantaloupe or juice of cantaloupe? ☐ Yes ☐ No

Apricot or juice of apricot? ☐ Yes ☐ No

***Note**: It is important to ask about the food item in all its forms; for example a fruit can be consumed as an item or in juice.*

Indicators of intake of specific food items or food groups

Indicators of food intake are reported in terms of number or percentage of respondents consuming specific food items or food groups the previous day.

Number

Examples of numerical indicators include:

- number of respondents who consumed meat the previous day;
- number of respondents who consumed at least one vitamin-A-rich fruit the previous day; and
- number of respondents who consumed more than three iron-rich vegetables the previous day.

Percentage

Percentages are determined from the numerical indicators. For example:

- percentage of respondents who consumed meat the previous day;
- percentage of respondents who consumed at least one vitamin-A-rich fruit the previous day; and
- percentage of respondents who consumed more than three iron-rich vegetables the previous day.

Frequency of intake of specific foods

Measurement: Short food-frequency questionnaires

Usual frequency of intake of a specific food over a period of time is generally measured with a food-frequency questionnaire (FFQ) (39). Respondents are asked to report frequency of consumption of a particular food or list of foods in the past day (24 hours) or other period of time (e.g. the last three days).

> Yesterday, during the day and night [**or other time period**], did you consume [**food item**]?
>
> **[food item]** ☐ Yes..... If yes, how many times?
>
> ☐ No

***Note**: FFQs tend to overestimate intakes and therefore do not provide a reliable estimate of actual intake. They are better used to compare intakes before and after an intervention (15, 28). In other words, FFQs are better suited to outcome evaluation than situation analysis.*

Use of visual supports, such as visual attitude scales or pictures of food, can help respondents understand and answer questions.

Indicator of frequency of intake of specific foods

The number of times a respondent consumes a specific food over a specific time period constitutes the respondent's individual score.

To calculate the frequency of intake of a specific food for the population as a whole, divide the number of times all respondents reported consuming the food by the total number of respondents.

$$\text{Food frequency score per food item} = \frac{\text{Total number of times all respondents reported consuming specific food item}}{\text{Total number of respondents}}$$

Specific observable behaviours or practices

Measurement: Nutrition-behaviour checklist: yes/no questions and partially categorized questions

Some practices are relevant for nutrition but cannot be assessed by measuring food intake (for instance, cleaning dirty surfaces, using iodized salt or adding a specific food item to a meal). These cannot be assessed using 24-hour recalls, short food-intake checklists or FFQs (28, 35, 36, 40). They can, however, be measured using a nutrition-behaviour checklist that employs:

- yes/no questions related to a practice and/or
- partially categorized questions accompanied by a list of statements related to practices (see "2.3. Key indicators: knowledge, attitudes and practices," "Measurement of knowledge," page 8).

Example: Measuring practices related to house treatment of water

Do you treat your water in any way to make it safe to drink?

- ☐ Yes
- ☐ No
- ☐ Don't know/no answer

If Yes:

What do you usually do to the water to make it safer to drink?

- ☐ *Boil it*
- ☐ *Add bleach/chlorine*
- ☐ *Strain it through a cloth*
- ☐ *Use a water filter (ceramic, sand, composite, etc.)*
- ☐ *Use solar disinfection*
- ☐ *Let it stand and settle*
- ☐ *Other*
- ☐ *Don't know/no answer*

Anything else? (*Record all items mentioned*)

_____

_____

Assessing observable practices does not aim at measuring amounts of food items consumed but rather at identifying dietary habits of the population (41). Assessing observable practices is therefore suitable for a situation analysis. From an outcome-evaluation perspective, this kind of assessment establishes whether the messages provided to the participant population have been put into practice. For example, Latin American food-based dietary guidelines (FBDG) provide the following messages: consume less salt, drink more water, eat more fruits and vegetables every day. A survey can assess whether people are applying these practices by asking a series of yes/no questions followed by open-ended partially categorized questions.

Example: Message: decrease your salt consumption

Do you do anything to decrease your salt consumption?

- ☐ Yes
- ☐ No
- ☐ Don't know/no answer

If Yes:

What exactly do you do?

Probe if necessary: How exactly do you decrease your salt consumption?

_____

_____

[Insert a list of the most common responses cited during pre-testing, such as the following]

- ☐ I cook with less salt
- ☐ I add less salt to my food
- ☐ I keep the salt-shaker far from the kitchen table
- ☐ Don't know/no answer

Regardless of the practice, most respondents will answer "yes." It is therefore important to encourage respondents to explain their specific practices with their own words by asking open-ended questions. You should create a list of options based on the most common responses provided by respondents during the pre-testing of the survey questionnaire; this will simplify analysis of the responses. See "Pre-testing the survey questionnaire," page 42, for more information on how to pre-test the survey questionnaire.

TABLE 3:

Approaches used to measure dietary diversity, intake of specific foods, frequency of intake of specific foods and specific observable behaviours and the purposes for which they are used

	Dietary diversity	Intake of specific foods	Frequency of intake of specific foods	Specific observable behaviours
How is it measured?	• **Adults**: 24-hour dietary recall; DDS • **Children**: FFQ; Minimum DDS	Short food-intake checklists	Short FFQ; FFQ score	Nutrition-behaviour checklists
What does it measure?	Quality of the diet	Intake of specific foods over a specific period (usually 24 hours)	Frequency of intake of specific foods over a specific period	Observable dietary practices of the survey population
For what purpose?	**Situation analysis:** • **Young children:** Consumption of four or more food groups during the previous day reflects adequate dietary diversity of the population • **Adults:** There are no established cut-off points in terms of number of food groups to indicate adequate or inadequate dietary diversity. DDS in adults should therefore not be used for situation analysis **Outcome evaluation:** Comparing DDS before and after intervention indicates changes in the dietary quality resulting from the intervention	**Situation analysis:** To determine which food items are consumed by the participant population **Outcome evaluation:** Comparing consumption of specific food items before and after the intervention indicates whether efforts made to increase consumption in the participant population were effective	**Outcome evaluation:** FFQs tend to overestimate intakes and therefore do not provide estimate of actual intake. Comparing intakes before and after an intervention indicates whether the intervention has succeeded in modifying food consumption	**Situation analysis:** To identify dietary habits of the population **Outcome evaluation:** Comparing behaviours before and after the intervention indicates whether efforts to change dietary practices have been successful

DDS = dietary diversity score; FFQ = food-frequency questionnaire.

Indicators for specific observable behaviours or practices

Indicators for specific observable behaviours or practices can be reported in terms of numbers, or percentages.

Number

Examples of numerical indicators include:

- number of respondents who treat water to make it safer to drink;
- number of respondents who do not treat water to make it safer to drink;
- number of respondents who boil water to make it safer to drink; and
- number of respondents who cook with less salt.

Percentage

Percentages are determined from the numerical indicators. For example:

- percentage of respondents who treat water to make it safer to drink;
- percentage of respondents who do not treat water to make it safer to drink;
- percentage of respondents who boil water to make it safer to drink; and
- percentage of respondents who cook with less salt.

3

Planning and conducting KAP surveys

This section details the key steps involved in planning and conducting a KAP survey, including preparatory activities (designing and translating the survey questionnaire, training surveyors, pre-testing the survey questionnaire and sampling the population) and procedures for collecting the data.

3.1 Activities to undertake before conducting a KAP survey

Designing the survey questionnaire

The first step in designing the survey questionnaire you will use for your KAP study is to define the objectives of your survey and the survey population. This will determine which topics your survey will cover and which modules you will use to create your survey questionnaire,

Appendix 6 (page 78) provides modules on core nutrition topics. These can be used to form your survey questionnaire.[2]

Module 1: Feeding infants (less than 6 months old)
Module 2: Feeding young children (6–23 months)
Module 3: Diet of school-aged children
Module 4: Nutrition during pregnancy and lactation
Module 5: Undernutrition
Module 6: Iron-deficiency anaemia
Module 7: Vitamin A deficiency
Module 8: Iodine deficiency
Module 9: Food safety
Module 10: Personal hygiene
Module 11: Water and sanitation

[2] The KAP model questionnaires in MS Word format are available in different languages and can be downloaded for adaptation at: www.fao.org/docrep/019/i3545e/i3545e00.htm

Module 12: Food-based dietary guidelines

Module 13: Overweight and obesity

Once you have decided which modules you will use, you must adapt them to your local context, for example by changing the specific foods covered and translating the survey questionnaire into local languages. If necessary, add questions to meet your specific needs. You should also select the appropriate informed consent form and sociodemographic questionnaire (Appendixes 3, 4 and 5), modify them as necessary and have them translated into local languages.

Step 1: Define the survey objectives and modules to use

Before choosing the modules to use in the survey, the survey manager(s) should define the survey's objectives and the project's survey population. These will determine what information to collect.

The survey objectives and survey population

The survey's objectives are derived directly from the objectives of the project/intervention and should be tailored to a specific location, project and population.

For a *situation analysis*, the survey's objectives might be something like the following:

- Evaluate fifth-grade children's KAP related to the local food-based dietary guidelines using a KAP survey.
- Based on the findings of the KAP survey, identify poor dietary practices and gaps in knowledge and attitudes that could be addressed in a project or intervention.
- Identify priority needs in nutrition education with a view to informing project or intervention design.

In the case of an *outcome evaluation,* the survey manager(s) will need the following information from the project:

- the health and/or nutrition issues to tackle;
- the general or development objectives of the intervention;
- the specific objectives of the intervention; and
- the nutrition-related activities and participant population.

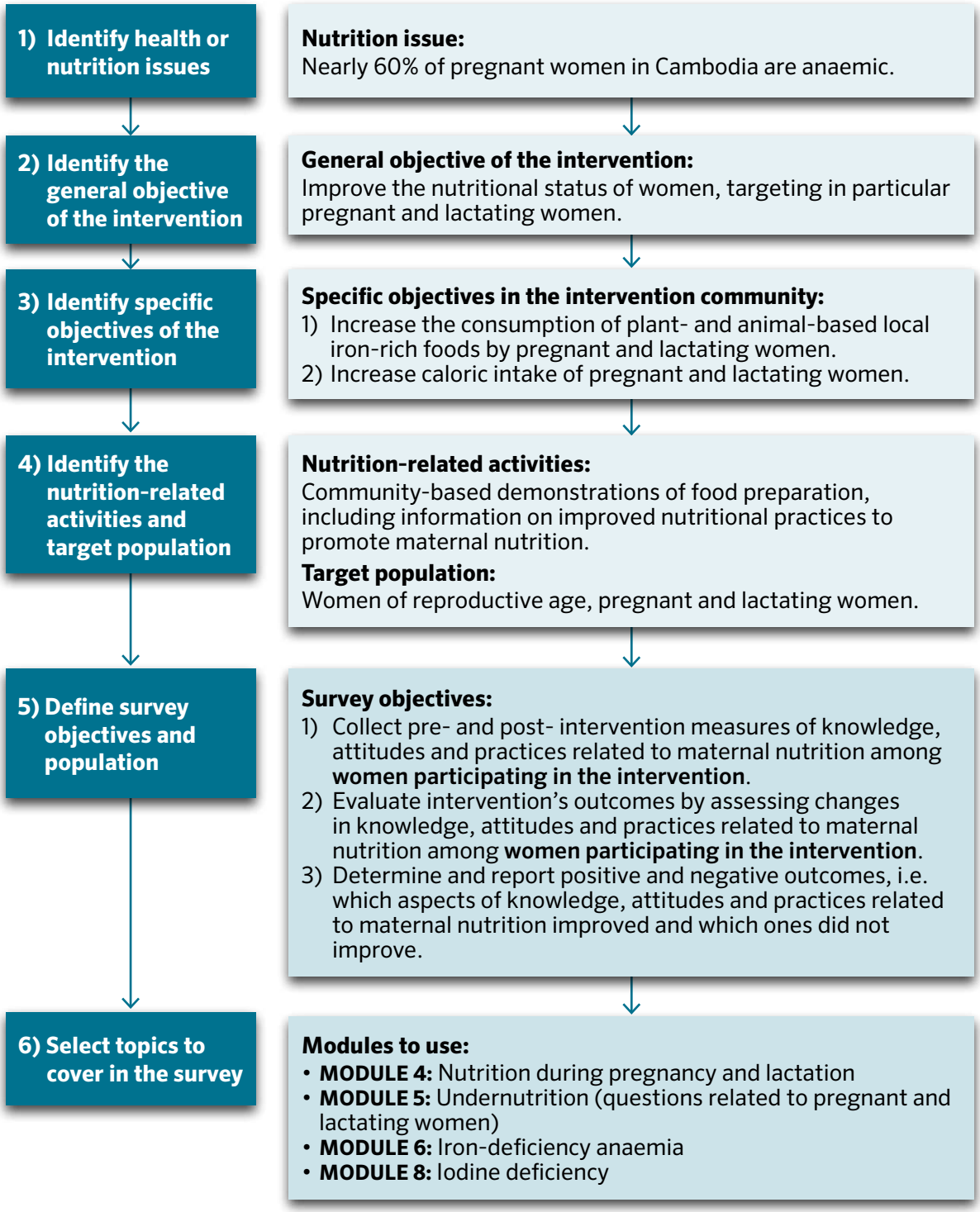
This information will allow them to identify the survey's objectives, the survey population and the topics the survey questionnaires must cover.

The topics to cover (modules to use) in designing the survey questionnaire

The survey questionnaire should cover important topics related to the intervention and address the objectives of the survey (16, 36). The survey team should prepare a list of the main topics that the KAP survey will investigate and discuss the potential usefulness of the data to be collected (20). Given limited resources, it is important to prioritize the most important topics.

Figure 3 illustrates the steps involved in evaluating outcomes of a nutrition education intervention, based on a concrete project example in Cambodia (available at: www.mdgfund.org/country/cambodia).

FIGURE 3: **Flowchart for defining survey objectives, survey population and selecting topics to cover for an outcome evaluation**



Step 2: Select questions

Just as not all the modules may be used in a given survey, not all the questions in a module may be needed. The modules are a list of sample questions from which you should select the ones that serve the objectives of the survey.

The survey team should prepare its own survey questionnaire by selecting questions that will allow them to obtain the information they need (i.e. relevant to the specific project's and survey's objectives and activities). Leave out questions that are only partly related to the survey's objectives, no matter how "interesting" they might appear. It is important to keep only those questions that provide the information you need and to reject those that provide information that would only be nice to know (42).

Use the survey's objectives to determine the balance between questions about knowledge, those about attitudes and those about practices. For example, if the survey aims at assessing only practices, there is no need for questions about knowledge or attitudes.

To facilitate the selection of questions, each question in the modules has been categorized based on its level of importance/specificity.

1 **Category 1**: **Core/essential questions**. These form the basis of any nutrition-related KAP survey and should always be included in KAP survey questionnaires related to food security and/or nutrition interventions that include a nutrition-education component.

2 **Category 2: Optional questions**. These may be included in the survey questionnaire to measure more-specific aspects of KAP, if these are addressed in the project/intervention.

3 **Category 3**: **Specific questions**. These questions gather comprehensive information on a nutrition topic, i.e. very specific aspects of KAP.

Do not change the order of questions in the modules; some questions contain answers to previous ones. For this reason, in most modules questions concerning practices are placed at the beginning of the modules, before those related to knowledge or attitudes. Modules 6, 7 and 12 are the exception, as the questions related to practices may bias the responses to knowledge questions.

Important

Keep the survey questionnaire as short as possible. Select only questions strictly related to the objectives of the survey. In other words, when constructing your survey questionnaire, think only about the specific pieces of KAP that:

- ✓ *you must know to design the intervention (situation analysis)*
- ✓ *you would expect to see change as a result of the nutrition intervention (outcome evaluation)*

Step 3: Adapt the questions

Once you have selected the questions you should adapt them to the content of the intervention as well as to the local context. Additional adaptation might be needed if the survey questionnaire is used with children or if the respondent is required to fill out the questionnaire himself or herself.

Adapting the questions to the intervention

The modules contain open questions with pre-categorized options to facilitate recording and analysis. You may need to adapt or change these options, depending on the intervention. Similarly, questions relating to attitudes towards an ideal or desired practice must be tailored to specific practices targeted in the intervention.

Adapting the questions to the local context

You must have a basic knowledge of the local culture in order to adapt questions and response options to the local reality in terms of language, education level and habits. These may differ even from region to region within the same country (e.g. urban–rural differences).

Modify the response options based on the responses most often cited by respondents during pre-testing (see "Pre-testing the survey questionnaire," page 42). Adding the most common responses as pre-categorized response options will help surveyors to record and analyse the responses more easily.

In addition, throughout the modules there are statements that appear in [**bold font in square brackets**]. These are adaptation instructions for the survey manager(s) to follow in order to adapt the survey questionnaire to the local context.

Adapting the food lists

Food lists must be adapted to reflect locally available foods and then translated into local languages before enquiring about food consumption practices. The survey team should take the following steps before starting to collect data (adapted from FAO, 2011 (34)):

1. **First review:** Prepare lists of food groups of locally available foods, translated into commonly used, locally-recognized names for each. Modules 6 and 7 include lists of iron- and vitamin-A-rich foods. Replace the food names with the names of locally-available foods and add other locally available foods. Consult food composition tables or nutrition experts if you are not sure how to categorize a certain food or whether it is considered, for example, a vitamin-A-rich food.
2. **Meet with key informants and the community to refine the food lists and translations:** The survey team should organize a series of meetings with key informants in each survey locality.

   Typical key informants include:

   » national or local experts (e.g. nutritionists);

» community leaders, agricultural or health extension workers at community level; and

» women in the community who are responsible for planning and preparing meals.

This phase of adaptation is used to gather several critical pieces of information. Key actions include the following:

» Review and add locally available food items to the food groups.

» Identify local words for foods and liquids, including semi-solids (e.g. mashed or pureed food, porridges, thick gruels and stews) and solids (e.g. bananas, mangoes, potatoes and bread).

» Identify appropriate local terms for "food" and "meal."

» Discuss issues of food availability (such as season for consuming a particular fruit, insect or other food item) during the season when the survey questionnaire will be administered.

» Gather information on ingredients used in local dishes and local meal customs and terminology.

3. **Final translation of the food lists:** Create a final version of the food lists in the official national language once key informants from each locality have been visited and appropriate terminology has been agreed on. If necessary, translate this final version of the food lists into local languages or dialects. It is essential that the interviewers do not translate "on the spot" from one language to another; the lists should be translated into each local language and printed before any interviews are conducted.

Adapting questions for use with children

The questions in the modules were developed to be administered to adults. If you are preparing survey questionnaires to use with children, pay special attention to the age and cognitive ability of the children (39). Table 4 presents an overview of general and nutrition-related cognitive characteristics of children of three age categories to take into account when adapting the modules (15, 32, 44, 45).

TABLE 4:

Overview of general and nutrition-related characteristics of children of three age categories

Pre-operational stage	Concrete operational stage	Formal operational stage
Early childhood/pre-school: 2–5 years old	Middle childhood: 6–10 years old (Grades 1 to 5)	Adolescence: 11–18 years old (Grade 6 and beyond)
• Have a concrete thinking; understand physical actions that involve concrete objects, e.g. washing hands with soap, eating an apple • Do not consider transformation, therefore cannot understand that ingested foods are changed in the stomach (digestion) • Food classification and preferences are based on perceptual attributes, such as size, colour and shape, but not nutrient content • Can mention healthy foods but cannot explain why foods are healthy • Have some knowledge of meal planning, food preparation, table preparation, food serving, eating and cleaning up • Cannot make distinction between meals and snacks • Have no idea of contamination	• Have a more logical thinking but still concrete, limited to objects and specific experiences. Still do not understand abstract notion like nutrients • Their capacity for description is still wider than their analytical ability • Can focus on two or more functional food attributes; for example, they are able to understand that healthy foods make you strong, healthy and grow • Understand that ingested foods are somehow changed in the stomach • Can make a distinction between meals and snacks • Can put foods into categories such as shape, taste or other physical properties • Motivation starts playing a role in their food choices • Have a basic idea of contamination	• Significant cognitive development • Logical reasoning and abstract thinking; understand terms such as nutrients • Have more control on the food they eat • Their criteria for food choice become progressively more complex; increased reasoning about consequences • Able to understand the effect of food choices on their health and that of their family, community and environment • Able to identify what influences their food choices and eating practices (e.g. barriers, pressures, etc.) • Able to evaluate their own eating habits • Have a full adult idea of contamination

SOURCES: 15, 32, 44, 45.

From the information presented in Table 4, it is clear that it would make no sense to explore pre-school and middle-childhood children's knowledge about foods containing specific nutrients and the health-related consequences of a lack of those nutrients or to explore the factors influencing their eating practices. In contrast, adolescents can be asked the same questions as adults.

If children are able to read and write, you can prepare a self-administered survey questionnaire (see "Creating a self-administered survey questionnaire," here below). Ideally, the surveyor should read the survey questionnaire aloud to young school-aged children, especially in disadvantaged communities, and then allow the children to complete the questionnaire by themselves (15, 30). Add pictures, drawings or other visuals to add interest to the survey questionnaire to make it inviting and interesting to children.

> ***Note:*** *It is recommended that parents/caregivers do not help their children answer questions so as to avoid any bias in their responses. A trained surveyor is the most suitable person to help children complete the survey questionnaire.*

Example: Question assessing children's preference for papaya

How much do you like the taste of papaya?

I like it | It is OK/so-so | I don't like it

Remember to test the questions on a small sample of children. Ask the children which questions were difficult to understand and answer.

Creating a self-administered survey questionnaire

If you are working with literate audiences, such as school-aged children and teachers, you may be able to get the respondents to fill in the survey questionnaire themselves. This will require fewer or no surveyors. If you are going to use this approach, you will have to adapt the questions in the survey questionnaire because the questions in the modules were developed on the basis that surveyors would be asking the questions of low-literacy respondents in personal face-to-face interviews. They are therefore not suitable for use in self-administered questionnaires, in particular because they include analysis instructions.

If you plan to use self-administered questionnaires, delete the analysis instructions and sections from the questionnaire and put them in a separate document that will be used by the survey team to analyse the results of the survey.

For questions about knowledge, delete the pre-categorized options. Participants will have to write down their responses to the short open-ended questions; the survey team will thereafter categorize them.

Questions on practices could have a yes/no format followed by a multiple choice question:

Example

In the past week, did you eat vegetables?

- ☐ Yes
- ☐ No
- ☐ Don't know

If Yes:

Did you eat:

Pumpkin	☐ Yes.....	☐ No
Carrot	☐ Yes.....	☐ No
Squash	☐ Yes.....	☐ No

... and so on for all locally adapted list of vitamin-A-rich vegetables.

Example

Do you usually have breakfast?

- ☐ Yes
- ☐ No
- ☐ Don't know

If Yes:

How many times did you have breakfast in the last week, that is, in the last 7 days?

- ☐ Every day (the seven previous days)
- ☐ 4–6 times per week
- ☐ 1–3 times per week
- ☐ Never

Questions relating to attitudes can be left as they are (i.e. scaled). The options can also be listed.

Example

How difficult is it for you to breastfeed your child on demand?

- ☐ 1. Easy
- ☐ 2. Neither difficult nor easy, or unsure
- ☐ 3. Difficult

Self-administered questionnaires can be used with literate audiences.

Step 4: Select the appropriate informed consent form and socio- demographic questionnaire

The interviewers should obtain the permission of all the respondents to administer the survey questionnaire. They should also collect the respondents' sociodemographic characteristics, also called background characteristics. Population-specific consent forms and questionnaires have been designed for this purpose and are included in the appendixes of this manual:

- Appendix 3: Informed consent form and sociodemographic questionnaire for caregivers of infants and young children (0–6 months and 6–23 months) (page 71)
- Appendix 4: Informed consent form and sociodemographic questionnaire for school-aged children (page 74)
- Appendix 5: Informed consent form and sociodemographic questionnaire for adults (page 76)

Select the consent form and questionnaire best suited to the survey population (i.e. caregivers of infants and young children, school-age children or adults). Adapt the consent form according to the project and to the objectives of the survey (i.e. whether the survey aims at collecting information for a situation analysis or at assessing the outcomes of an intervention). Once you have done this, incorporate the informed consent form and sociodemographic questionnaire at the beginning of the survey questionnaire, before the KAP questions.

There are a number of key points that you must take into account when seeking informed consent to participate in the survey and collecting sociodemographic information. These include the following:

- You must obtain parental consent before interviewing minors, i.e. children and adolescents (under 18 years) who still live with their parents. Verify at what age young people are considered adults in the country in which the survey will take place.
- Assign a number (code or ID number) to each participant to facilitate sampling and data handling, storage and analysis. This will also help ensure confidentiality of respondents. Create a list of the respondents' names matched with codes. Only the supervisor should have access to the list.
- If caregivers are unable to provide the child's age, ask them for the child's health card. If the child does not have a health card, and if this is a common occurrence in the survey area, the survey team should create a calendar of events that occurred in the area recently; caregivers can then be asked to identify events that occurred at the time of the child's birth. Train surveyors to use this support document (see "Training the surveyors," page 39).

Once analysed, the sociodemographic information collected will give the overall characteristics of the survey population, which can be used to put the survey findings in context.

Step 5: Prepare additional questions (optional step)

Create additional questions if the modules do not include questions about specific aspects of knowledge, attitudes and/or practices you want to measure. However, before creating a new question, ask yourself the following questions:

- Why do I need to know this information?
- Is it in line with the survey's objectives?
- What information will I get from it? What will it tell me?
- In an outcome evaluation context: Is this information essential to assess a desired outcome of the intervention?

Formulating questions that are free from bias is not easy. It is best to follow the same format of questions as the ones used in the modules: partially categorized questions for knowledge and practices and scaled questions for attitudes (see "2.3 Key indicators: knowledge, attitudes and practices", page 8).

Take the following precautions in designing your own questions.

- **Avoid compound questions**

  Compound questions comprise two or more questions. They might confuse respondents, who will not know how to answer.

  Examples:

  » How important is it to give a child fish, eggs, meat and milk frequently?

  » Is food served to your child prepared separately or taken from the family meal?

- **Avoid leading questions (also called loaded or biased questions)**

  Leading questions are those where the answer is suggested in the question itself, making the respondent feel inclined or obliged to answer in a particular way.

  Examples:

  » You like eating soybeans, don't you?

  » Do you give fish to your child like a good parent should?

- **Avoid unanswerable questions**

  This type of question asks the respondent to recall information that may be difficult or impossible to recall with accuracy.

  Example:

  » How many fruits and vegetables have you eaten for the past three months?

- **Avoid hypothetical questions**

  These force the respondent to provide an answer to something that has not happened and may not happen and that the respondent may not have thought about. It would thus be difficult for the respondent to provide an accurate response.

  Example:

  » If your income increased, would you buy more meat?

Remember that a poorly developed questionnaire will lead to poor, if not useless, data and would thus invalidate the study. Aim to ensure that your questions can be understood by anyone, regardless of their educational level.

Translating the survey questionnaire

Translate the questionnaire into the local language or languages. This is essential to avoid interviewers having to translate the questions while they are administering the survey questionnaire (9, 10). Surveyors are not professional translators and may not accurately translate the meaning of the original question or may suggest the answer, biasing the results of the survey. Asking the same questions to all respondents is essential to guarantee the validity of results.

Steps to follow for translation

Have the initial translation done by a professional translator: If this is not possible, make sure that the original meaning of the questions is not lost in translation. Keep the wording of the questions simple to make sure that they are easily understood by all respondents, no matter their educational level.

Have the survey team translate the questionnaire back to English: This will show whether the translation accurately captured the original meaning of the questions. The survey manager should meet with the surveyors to review the original questions together with the translated ones. All surveyors should be involved and have their say on different possible translations of words and types of wording to decide and agree upon the most appropriate local terms. This step could be part of their training (see "Training the surveyors," page 39).

Important

- ✓ *Translation is one of the most challenging steps of the preparation of the KAP survey as the meaning of the questions can change from one language to another.*
- ✓ *The idea is not to translate words but to translate meanings.*

The survey team should compare the original question and the translated version to ensure that the original meaning has not been lost.

Training the surveyors

BOX 3

Tips for selecting interviewers

Here are some tips for selecting surveyors:

- Select surveyors who can read, write and speak the local language fluently and know the geographic area of the survey.
- Assess their team working, organization and listening skills.
- Give priority to those who have experience in similar work.
- Be sensitive to cultural issues. For example, in some countries you should select female interviewers to interview females and male interviewers to interview males.

SOURCE: 9.

Training the surveyors is a key step in ensuring effective interviews and high-quality data collection.

Ideally, the KAP survey should be carried out by a team of surveyors in the field who conduct the interviews with respondents, with supervisors managing the survey and providing assistance to surveyors. It is essential that all members of the team understand the principles of the survey and the procedure for administering the survey questionnaire. The surveyors must be thoroughly trained so that they have the communication skills needed to conduct interviews and avoid bias that could significantly affect the results of the survey (16). This training should be provided through a mix of lecture-type presentations, participatory group discussions and role-playing.

Essential topics in training surveyors

The following are some essential topics that must be included in the training of surveyors.

Survey objectives

- Present the survey's background, justification and objectives. This will ensure that the team members understand the principles of the survey.

Informed consent and confidentiality

- Explain the need for the surveyor to present the objectives of the interview to the respondent, answer any questions related to it and seek the respondent's informed consent prior to the interview.
- Emphasize the need to guarantee the confidentiality of the respondent's identity and his or her responses. The pledge of confidentiality is crucial in attaining honest and complete answers from respondents (42).

- Stress the importance of respecting the respondent's choice to accept or refuse to participate in the survey or to answer any question. In some cases, it might be pertinent to inform the respondent that their choice will not affect them or the services they receive (e.g. health services).

Content and use of the survey questionnaire

- Present the overall format of the survey questionnaire, its content (topics covered) and the instructions to the interviewer. Give surveyors a short training on the nutrition topics covered so that they have the necessary knowledge of nutrient-rich foods (i.e. iron-, vitamin-A- and iodine-rich foods) and good nutrition practices to be able to explain questions and probe if necessary.
- Review every single question, discuss its meaning and the reason it was included in the survey questionnaire. This step entails reviewing each question and all response options with the surveyors so that they become familiar with them. Arrange time for discussions in the local language and provide examples to help surveyors grasp fully the meaning of each question and response option. Make sure the wording of questions is understood by all members of the team.
- Emphasize the importance of exploring questions thoroughly with respondents and not trying to force their answers to match the listed response options. If the respondent hesitates when answering a question, the interviewer should not suggest possible answers. Explain that suggesting possible answers to the respondent can introduce bias.
- Make sure that the surveyors understand that they must ask the questions in the order in which they appear on the survey questionnaire. Stress that any change in the order of questions, no matter how slight, can have a significant influence on the responses.

Approaching the respondent and administering the survey questionnaire

Surveyors need basic skills to communicate with the respondents so as to develop trust and obtain accurate information. They also need to know precisely how to administer the survey questionnaire. Refer to "3.2 Collecting data: procedures for administering the survey questionnaire," page 47, for detailed information about how surveyors should:

- introduce themselves;
- obtain informed consent from respondents;
- collect sociodemographic information;
- communicate effectively;
- ask questions and record responses;
- handle questions; and
- perform preliminary analysis (only if surveyors have sufficient analytical skills).

Role-playing for effective interviews

Role-playing is a useful practical approach in training surveyors. Practicing interviews with surveyors will allow the trainers and supervisors to observe the surveyors' performance and provide feedback to improve their technique. Put surveyors in pairs and have them conduct a practice interview in front of the other trainees. Ask the other trainees for their

impressions. Discuss with them strengths and weaknesses highlighted by the role-play interviews: focus on the introduction to the survey, the presentation of the survey, gaining consent, communication skills, handling of questions and time management. Check that the survey questionnaires are filled in correctly and annotations are legible.

Make sure that surveyors familiarize themselves with the survey questionnaire so that they are able to have a fluid conversation with respondents rather than just asking questions and recording answers.

Pre-testing of the survey questionnaire

The pre-testing of the survey questionnaire can be part of the training of surveyors; it is a way for them to continue practicing their interview techniques and for the trainers and supervisors to provide them with feedback on their performance before beginning the survey. See "Pre-testing the survey questionnaire," here below, for more information on how to pre-test the survey questionnaire.

Logistics

Present the logistic planning previously prepared. Tell the surveyors which survey team they have been assigned to, the survey areas assigned to each team, days and times allocated to the survey, each team's schedule, when the survey questionnaires will be printed and other relevant details. Give the surveyors their itineraries, including roadmaps, names of the villages, phone numbers and other information that might be useful to them.

> ***Note**: Plan to conduct interviews at the most difficult or distant sites early in the survey because surveyors might lose motivation and become fatigued over time. Monitor weather conditions and modify the schedules if necessary.*

Conclusion

Summarize the key points of the training and answer any questions the trainees might have. You must ensure that the surveyors have understood the importance of closely following the procedures and have the knowledge and skills necessary to conduct interviews.

Pre-testing the survey questionnaire

The questions in the modules were field-tested in several countries, but vocabulary and ways of asking questions or expressing ideas can vary from country to country or even between areas within the same country. It is thus essential that you pre-test your survey questionnaire before beginning the survey (14, 20, 28, 36). Pre-testing should ideally be part of the training of surveyors

Pre-test the survey questionnaire with 5–20 individuals from the survey's participant population. The people used to pre-test the survey questionnaire should not be included in the actual survey.

The survey manager is responsible of planning and managing the KAP survey, including forming teams, developing schedules, providing itineraries and giving clear instructions.

During the pre-testing interviews, surveyors should:

- note if the respondent has difficulty understanding any question and, if they do, suggest how the questions should be rephrased;
- check whether there is sufficient space to annotate answers;
- assess if the wording of the questions leads to bias in the participants' responses (for example, the answer is included in the question);
- note how long it took to complete the survey questionnaire; and
- ask the respondent if the interview was too long or tedious.

After the pre-testing interviews, the survey manager(s) should arrange a debriefing with the whole survey team to obtain their feedback, discuss problems encountered and identify possible solutions. This step will also allow the surveyors to share concerns with the rest of the team and ask questions. Each question should be addressed.

Focus on the following aspects during the debriefing (see also Box 4, page 45):

- **Validity**
  - » What questions were not understood by the respondents or were subject to multiple interpretations?
  - » Did questions lead respondents to give a specific answer?

  - » Was the answer provided in the question?
  - » Were the items of the food checklists really representative of what is typical for the respondent population?
- **Readability and ease of administration**
  - » Were instructions clear to the surveyor?
  - » Were the language and questions understandable to the respondents in terms of vocabulary, sentence length and writing style?
  - » Were questions easy for the surveyor to read out? Did questions follow a logical flow and read well?
  - » Was there a need to clarify some questions?
  - » Is there a need to improve the wording of questions?
  - » Was there sufficient space for the surveyors' annotations?
  - » Was the questionnaire easy and quick to administer?
  - » Are response options relevant?
  - » Did respondents provide more responses than those listed, i.e. is there a need to add more response options to tick? Response options should be as exhaustive as possible; the most cited responses should be added as response options.
- **Respondent burden**
  - » How long did it take to complete the survey questionnaire?
  - » Did respondent show any verbal or non-verbal signs of impatience? Did they have trouble concentrating?
  - » Did respondents refuse to answer certain questions? If so, do you know why?
  - » Are there topics that make respondents feel uncomfortable and should be addressed with care?
  - » Are the terms and concepts expressed in the questions culturally acceptable?

Modify the questionnaire based on the information obtained; for example, add the most-cited responses as response options. This will result in the final version of the KAP survey questionnaire. If respondents have difficulty understanding questions, think about using probing questions and include them in the final version of the survey questionnaire. These should be also discussed during the training to ensure that all surveyors use the same probing questions.

Important
Never omit pre-testing; pre-testing will determine the usefulness of questions in collecting the desired data (8, 14, 20). If resources are limited, conduct at least a short pre-test by asking a few respondents to go through the survey questionnaire and give their opinion, reactions and suggestions (in a focus group, for example). Make sure to pre-test the survey questionnaire in each language used in the survey.

BOX 4

Pre-testing debriefing: points to check with surveyors

- Validity: degree to which the questions correctly measure knowledge, attitudes and practices (15, 36).
- Readability: ease of understanding the questionnaire and questions in terms of vocabulary, sentence length and writing style (36).
- Ease of administration: extent to which questions are coherently linked together to give a sense of unfolding smoothly.
- Respondent burden: degree to which the respondent's participation in a survey can be perceived as difficult, time-consuming or emotionally stressful (31).

A debriefing with the survey team is needed after the pre-test to discuss problems encountered while administering the questionnaire and identify possible solutions.

Sampling the survey population

Unless the whole participant population is small and sufficient resources are available to interview the entire population, most surveys must be conducted with only a sample of the population (43).

The objective of sampling is to gather information from a representative segment of the population in order to be able to draw conclusions about the whole population through testing of statistical hypotheses.

Details of methods that can be used to sample the survey population for a KAP study can be found in other manuals (10, 44). In practice, the number of respondents to include in the survey will depend on the resources available: time, budget, number of surveyors and other resources available to collect and analyse information. It will also depend on the objectives of the survey and the degree of accuracy and representativeness desired.

For example:

- If the aim of the study is to give a rough idea of the KAP of a group but not to collect statistically representative data, for example in case of a situation analysis, then 30 or 40 respondents may be enough (28). However, a sample of this size is too small to generalize the results to the entire population and thus cannot be used for outcome evaluation.
- In the case of an outcome evaluation, if the participant population is large (several hundred) and the study's resources are limited, a sample must be selected that is smaller than the whole population but large enough to provide reliable information about the whole population. On the other hand, if the whole participant population is small (up to about 200 people) and resources are available, all of its members should be interviewed. The sample of participants should be selected only at the beginning of the survey, and the same respondents should participate in both the baseline and the endline survey.

Consult with a statistician before conducting the study to make sure that the sample size is reasonable.

BOX 5

Planning a KAP survey: summary

Designing the survey questionnaire

Step 1: Define the survey objectives and modules to use
Define the survey objectives and the survey population in order to identify the topics to cover (or modules to use) in designing the survey questionnaire.

Step 2: Select questions from the modules
Select only those questions that serve the objectives of the survey based on their level of importance/specificity.

Step 3: Adapt the questions
Adapt the questions to the content of the intervention and to the local context. If necessary, also adapt food lists and questions for use with children or create a self-administered survey questionnaire.

Step 4: Select the appropriate informed consent form and sociodemographic questionnaire
Select the consent form and questionnaire best suited to the survey population (i.e. caregivers of infants and young children, school-age children or adults; Appendixes 3, 4, and 5) in order to explain the survey objectives and background and obtain the permission to administer the survey questionnaire.

(cont.)

Step 5: Prepare additional questions (optional step)
Create additional questions if the modules do not include questions about specific aspects of knowledge, attitudes and/or practices you want to measure. Follow the same format of questions as the ones used in the modules and take care in designing your questions to avoid any bias.

Translating the survey questionnaire
Translate the survey questionnaire into the local language(s). Discuss with the survey team different possible translations of words and types of wording and agree upon the most appropriate local terms. Do not expect surveyors to translate the questions while administering the survey questionnaire.

Training the surveyors
Provide training through a mix of lecture-type presentations, group discussions and role-playing. Include the survey objectives, the informed consent form and confidentiality issues, the content and use of the questionnaire, and the way of approaching respondents and administering the questionnaire. Pre-test the survey questionnaire as part of the training and present the logistics of data collection (teams, schedules, survey areas, itineraries, etc.)

Pre-testing the survey questionnaire
Pre-test the survey questionnaire with 5–20 individuals from the survey's participant population. Arrange with the whole survey team to obtain their feedback, discuss problems encountered and identify possible solutions. Focus on validity and readability of questions, ease of administration of the questionnaire and respondent burden.

Sampling the survey population
Define whether you need to select a sample of the participant population to conduct the survey. The sample size (number of respondents to the survey) will depend on the resources available – time, budget, number of surveyors and other resources available to collect and analyse information – and the degree of accuracy and representativeness desired.

3.2 Collecting data: procedures for administering the survey questionnaire

This section describes the procedures that all surveyors should follow when conducting individual interviews. These procedures should be included in the training given to the surveyors.

Follow surveyor's written instructions

In the modules, instructions to the surveyor are written in *italics*. The surveyor should act on these instructions, but not read them out to the respondent. The surveyor should also not read out the pre-categorized answers included in knowledge and practice questions (see "Asking survey questions," here below).

Record the date and surveyor's name

Before approaching the respondent, surveyors should put the date of the interview and their name on the first page. They should also put their initials on all pages of the questionnaire.

Introduce yourself

The first contact with the respondent is critical in creating trust in the surveyor. Surveyors should start the interview by introducing themselves, the organization and the principles of the survey.

Obtain informed consent

The surveyor must ensure that the respondents agree to participate in the survey and must obtain oral informed consent from each respondent. The surveyors should present the principles and objectives of the survey to respondents in a positive and respectful way. They also have the responsibility to ensure the respondents understand the objectives of the survey and that they answer any question the respondents may have. In addition**,** they should assure the respondent that his or her identity and responses will be treated in confidence.

Collect sociodemographic information

The survey questionnaire should include sociodemographic questions appropriate to the age of the respondent (see Appendixes 3, 4 and 5). Surveyors should ask the questions in the second column and probe if necessary. Record the responses in the right-hand column.

Ask survey questions

Communicate effectively

Surveyors must show respect towards the respondents. They should speak in a polite and kind way so that the respondent is comfortable answering questions. They should be patient and give the respondent time to answer questions; i.e. do not pressure him/her to reply. Authoritative interviewers might intimidate the respondents and therefore lead to bias in their responses. Ideally, the interviewer should keep his or her head about level with the respondent's and not tower over him/her. Surveyors should not judge the responses or react to them, either negatively or positively.

Surveyors should adopt a similar posture to the respondent and speak in a polite and kind way to help put the respondent at ease.

Keep to the order of questions

Surveyors should ask the questions in the order in which they are presented in the questionnaire because some of them contain the answers of the previous ones.

Ask questions and record responses

Surveyors should ask each question as it is written on the questionnaire and not change the content or format of the questions. This will ensure that the surveyor does not introduce any bias.

Pre-categorized questions include a list of pre-coded answers. The surveyor should read the question to the respondent, but not the answers (unless told to do so in the instructions to the surveyor). After asking a question, the surveyor should listen carefully to the response, write it down and tick the box next to the pre-coded response options that best matches it.

If the respondent refuses to answer to a question, surveyors should make a note of this in the margin of the survey questionnaire.

Probe for further information

If the respondent does not understand the question, the surveyor should probe with other questions (ideally identified during pre-testing). If the respondent does not know the answer

to a question despite the probing questions, the surveyor should not leave the answer blank, which may give the impression that the question was forgotten, but record an answer and tick "Don't know/no answer" or "Don't know."

Do not offer answers to questions

Respondents might ask the surveyor for the "right answer" to knowledge questions. The surveyor should not provide answers or suggest different possible answers. Instead, they can explain that the respondent can refuse to answer any question and reiterate the survey's objectives.

Conduct a preliminary analysis

The survey questionnaire includes boxes that the surveyor can use to categorize responses to knowledge questions. The surveyors should record whether the respondent knows or does not know the answer to a question by ticking one of the options in the grey box and by indicating the number of correct responses (for questions with several possible correct answers). This assumes that the surveyor has adequate analytical skills to categorize the answers. If this is not the case, the supervisor(s) or survey manager(s) should perform this step. In that case, the analysis instructions and sections should be deleted from the questionnaire and placed in a separate document that will be used exclusively for analysing the results of the survey questionnaire.

Thank the respondent

At the end of the interview, the surveyor should thank the respondents for their participation.

Give compensation to respondents

In some cultures, respondents might expect a reward for their participation. Check if this is the case in the survey area and determine what kind of reward is acceptable in the respondents' culture. A pen or a piece of soap might be sufficient.

Check the survey questionnaire

Before leaving the survey area, the surveyor should ensure that he or she has asked all questions and recorded the corresponding responses. If information is missing, the surveyor should go back to the respondent to fill in the gaps.

Important

Surveyors should try, as much as possible, to interview the respondent privately, i.e. alone and not in the presence of other people, so as to prevent other people from interfering in the responses.

BOX 6

Limitation of KAP surveys

- **Descriptive, not exploratory:** There is an assumption that knowledge is based on scientific facts and universal truths (45). In a KAP survey, knowledge questions are used to assess specific pieces of nutrition-related knowledge that nutrition educators consider important for the participant population to know. A KAP survey can be used to measure progress towards acquiring these specific pieces of knowledge but cannot be used to explore the culture-specific knowledge that communities possess (e.g. indigenous knowledge related to food systems, different meanings and notions of nutrition-related problems).
- **Instability of attitudes:** Attitudes are not stable over long periods (14). Responses may change depending on the interviewing situation and other circumstances. Attitudes cannot be considered as reliable indications of stable viewpoints.
- **Self recall vs objective measurement:** A KAP survey is based on self-reported statements, not objective measurements. Responses can be influenced by the judgement, cooperation and memory of the respondent as well as by the surveyor's skills (37, 42, 45). Gaps may exist between what is said and what is done. The quality of the data obtained can be improved by training and supporting surveyors to increase their data-collection skills.
- **Scientific validation:** Knowledge and attitudes do not refer to physical objects but to psychosocial and subjective concepts. It is therefore not possible to validate the results concerning knowledge and attitudes in KAP surveys because no objective benchmark or reference exists. Some of the practice measurements included in the modules have been validated, including dietary diversity (34) and infant and young-child feeding practices (13). The format of questions concerning other practice measurements was informed by the UNICEF Multiple Indicator Cluster Surveys[1] and the Demographic and Health Surveys,[2] whose questions have been tested and are considered reliable and valid.

[1] www.measuredhs.com
[2] www.childinfo.org/mics3_background.html

4

Analysing the data and reporting the results

It is the role of the supervisor to arrange for data cleaning, data entry and analysis.

4.1 Cleaning and entering the data

Cleaning the data

Before analysing the survey questionnaires, it is important to verify that they do not contain errors, omissions or incongruous data. After surveyors have handed in all the survey questionnaires, ideally at the end of each day, supervisors should:

- check each completed survey questionnaire for answers that are incomplete or unclear (e.g. no answer or two answers for one question);
- check that written responses are legible;
- verify there are no aberrant responses (e.g. 1850 as a birth date);
- ask the surveyors for clarification if necessary; and
- check the preliminary analysis boxes and make sure that the options ticked correspond to the response.

If the supervisor finds that important information is missing from a survey questionnaire, or has any concerns or doubts about responses to questions, he/she should first check with the surveyor and if necessary arrange for the surveyor to contact the respondent for clarification or to repeat the interview.

Entering the data

After the data have been cleaned, create a form for entering all the data. This is usually done on a computer, using database management and analysis software (e.g. Epi-Info, STATA) or spreadsheet applications (e.g. Excel). One or two people can perform this process, depending on the length of the survey questionnaire and the number of respondents. Consider the use of assistants experienced in data entry for entering the data into the form. It will be important to verify that the data are correctly entered and analysed to validate the accuracy of results by carrying out double data entry to avoid data entry error.

4.2 Analysing and using the results

Sociodemographic characteristics

The sociodemographic data collected should clearly describe the profile of the respondents in terms of age, sex, parity (for women), area of residency and so forth. This will help put the survey results in context. If the sample size is large enough, the analysis can be performed by population subgroup, such as age, sex or area of residency.

Situation analysis for intervention planning

In the context of nutrition-related projects or programmes, a situation analysis describes the type and magnitude of nutrition issues and identifies possible causes of the nutritional problems observed. The findings of a situation analysis will help in planning a nutrition intervention targeted at addressing the nutrition problems encountered.

Situation analysis in terms of knowledge, attitudes and practices

One of FAO's key recommendations for improving nutrition through agriculture is to incorporate nutrition promotion and education around food and sustainable food systems that builds on existing local knowledge, attitudes and practices.

KAP studies can contribute to a situation analysis by helping determine nutrition-education priorities. Conducting a situation analysis in terms of KAP and planning a nutrition-education intervention, for example, can be broken down into steps to characterize the current situation and steps to identify nutrition-related KAP problems and to determine the best course of action to address those problems (15–18).

Assessing the current situation

The first step is to identify and describe the present nutrition situation.

- Identify local nutrition problems through secondary sources (e.g. national health statistics).
- Prioritize the nutrition issues that are most likely to be resolved through education.
- Identify people's dietary practices that are underlying the nutrition problems.
- Identify individual-level determinants of these practices, such as nutrition-related knowledge and attitudes.

Identifying nutrition-related KAP problems and possible solutions

This step involves identifying nutrition-related KAP problems and interventions that could be used to address these, including nutrition-education interventions.

- Identify poor dietary practices and gaps in people's knowledge and attitudes.
- Identify priority needs in nutrition education with a view to informing project or intervention design.
- Indicate educational objectives based on the information collected and the identified priority needs in nutrition education.
- Plan the content and activities of educational sessions to meet the objectives.

Gaps in people's knowledge are identified by comparing the percentage of people who gave the correct answer(s) to a question with that of people who did not know the answer(s). Gaps in practices are identified by comparing the percentage of people employing an optimal or desired practice with that of people who do not. Gaps in attitudes are determined by comparing the percentage of people who gave the desired or positive response with the percentage who gave a negative or noncommittal response.

Table 5 shows the suggested threshold levels that would recommend the need for intervention to address the problems identified.

TABLE 5:
Suggested threshold levels indicating the need for a nutrition-education intervention

Nutrition education strategy	Percentage of "correct answers", "optimal practices" or "desired/positive attitudes" in survey population
is urgent	≤ 70
should be considered	71–89
is not needed or difficult to justify	≥ 90

SOURCE: Peter Glasauer, personal communication.

Appendix 7 (page 175) outlines possible nutrition-education strategies that could be used to address KAP-related problems identified by a survey. The choice of strategy should be guided by specific educational objectives.

Exploring KAP in depth: use of qualitative methods

Questionnaire-based KAP surveys do not provide an in-depth understanding of a population's diet-related KAP because they gather only quantitative descriptive information and identify general trends (16, 46). Qualitative methods can be used, if needed, to further explore the results obtained through a KAP survey and generate a more in-depth understanding of the issues identified.

For example, a KAP survey might find that 60 percent of caregivers find it difficult to prepare an enriched porridge for young children, but that 95 percent of them think doing so is beneficial. In this situation, a qualitative study could explore the specific difficulties encountered by caregivers in preparing enriched porridge and how these could be overcome.

The short, open-ended questions included in attitudes questions in the modules can provide some insight into the reasons behind the attitudes observed, but a specific qualitative study would generate more information.

Appendix 8 (page 178) provides basic information about methods for collecting and analysing qualitative data.

Broader situation analysis: taking social and environmental factors into account

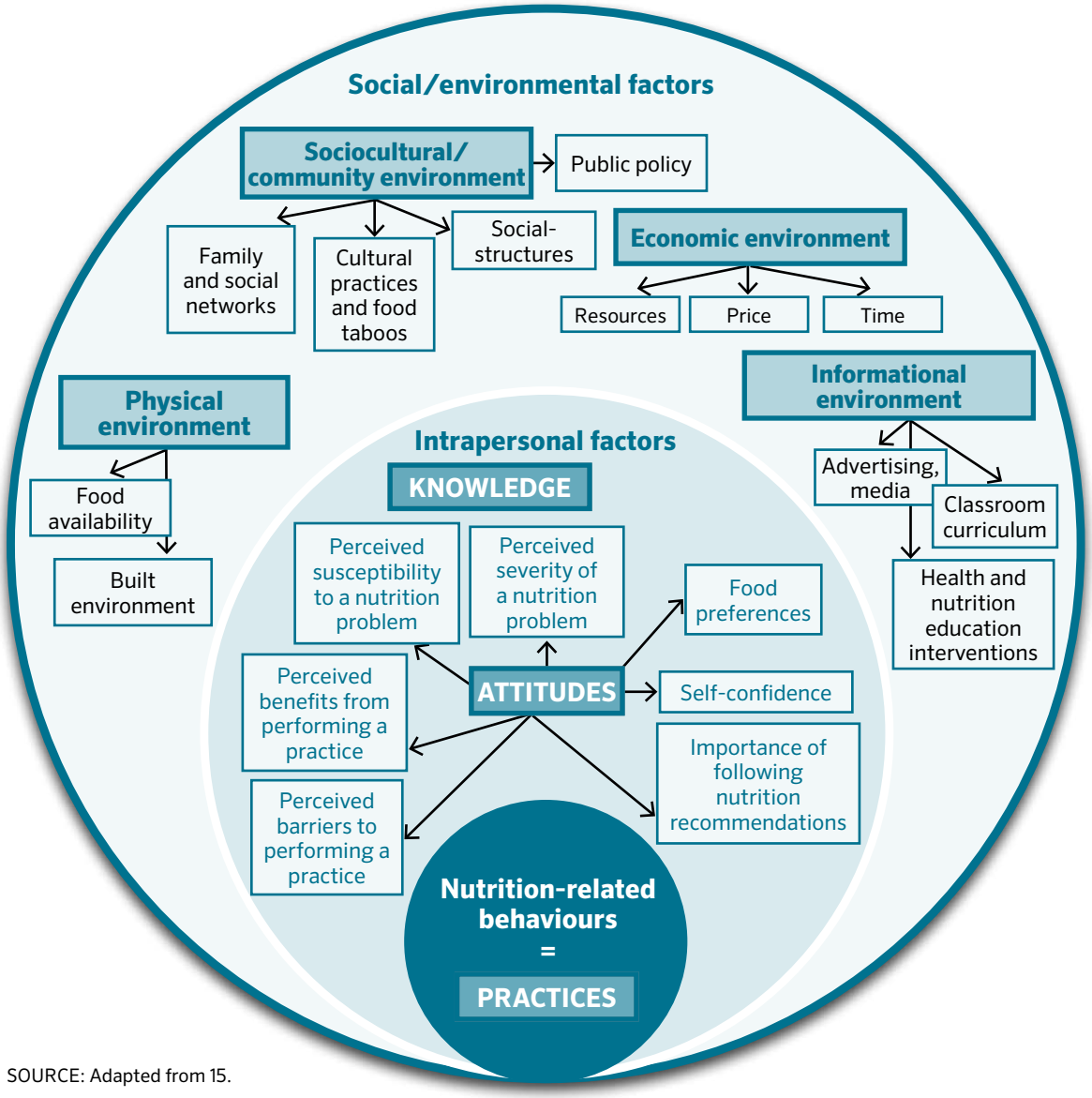
Having information about peoples' diet and health-related KAP is not sufficient for a comprehensive understanding of nutrition issues, as the information relates only to the factors inherent in an individual (or group of people). If the aim is to obtain a more comprehensive understanding of the nutrition situation in an area or a country, you will need to explore the context in which the person or group functions, i.e. factors external to the person or group that affect their KAP (15, 45, 47). Figure 4 illustrates some of the wider social and environmental factors that influence people's diets and health.

Older theories and "common sense" often assume that health and nutrition-related problems, such as malnutrition, are mainly the result of lack of knowledge. This leads to the belief that an increase in people's knowledge would result in a modification in attitudes, which in turn will bring about new or improved practices. However, scientific evidence for the link between knowledge and practice is weak; this linear KAP model is considered insufficient for explaining human behaviour (15, 22, 46, 48–50). The progression from knowledge to changed attitudes and improved practices not only depends on the assimilation of information and accumulation of knowledge but also on other factors, including:

- the physical environment: food availability and built environment;
- the sociocultural environment: family and social networks (including intrahousehold interactions and decision-making), cultural practices, social structures and public policies;
- the economic environment: resources, prices and time; and
- the informational environment: advertising and mass media.

Information on these factors will help provide a broader picture of the nutrition situation and important influences on it. These can then be taken into account in the design of the project or intervention by, for instance, identifying other strategies to be pursued, such as influencing nutrition policies or changing the food environment.

FIGURE 4: **Social, environmental and intrapersonal factors affecting practices**



SOURCE: Adapted from 15.

Outcome evaluation

KAP surveys can be used in an outcome evaluation to measure changes in people's KAP in response to a specific intervention. To do this, surveys must be conducted both pre- and post-intervention. The difference between the two indicates the impact of the intervention. Changes in KAP are assessed by assessing changes in indicators: numbers, percentages or scores or for each question. This can be done in two steps:

1. Determine indicators for each question before the start of activities of the project (baseline, pre-intervention) and at the end of the project (endline, post-intervention). (For details about how to determine indicators see page 8 for knowledge, page 10 for attitudes and page 18 for practices.)

2. Compare baseline and endline values. This provides quantitative evidence of change that has occurred since the beginning of the project or intervention. Depending on the scientific rigor required of the survey, it may be necessary to conduct statistical analyses of the data to determine confidence intervals and *p*-values.

Examples of outcomes

- Improvement in practices targeted in the intervention. For example: the percentage of the survey population consuming vitamin-A-rich vegetables increases from 20 percent at baseline to 60 percent at endline.
- Increase in the proportion of the survey population engaging in practices targeted by the intervention. For example, the percentage of mothers adding fish to their baby's porridge increases by 50 percent, from 30 percent at baseline to 45 percent at endline; or the percentage of adults in the survey population washing their hands with clean water increases from 20 percent at baseline to 65 percent at endline.

Indicators of KAP may also be included in the monitoring framework of a project to monitor progress of the intervention.

Important

- ✓ ***Use the same questionnaire during both the baseline and the endline survey****. This is essential to render the results comparable.*
- ✓ ***Calculate statistical significance****. If scientific rigor is required of the survey, conduct statistical analyses to determine whether changes in KAP are statistically significant, i.e. to see whether changes are the result of the intervention or simply the result of chance. These analyses can be expressed in terms of confidence intervals and* p*-values. Consult a statistician if needed.*
- ✓ ***Assess sustainability.*** *A series of surveys over time is more valuable than a "once-only" survey (14). To assess if outcomes are truly sustainable, conduct the outcome evaluation months or even years after the project intervention has been completed.*

4.3 Putting the results into context

Initial data analysis can provide a good description of the issues at hand, their magnitude, the groups affected and other aspects of interest. However, before it is possible to draw valid conclusions from the data on KAP of the population studied, the results of the descriptive statistical analysis must be examined in the context in which the data were collected. This is necessary because any survey has methodological limitations that must be explored in order to determine whether they may have affected the results. This is called data interpretation.

Table 6 shows factors can affect the results of a survey or study. These should be taken into account and reported as part of the analysis of the survey data.

TABLE 6:

Factors that affect the results of a survey or study used in a situation analysis or outcome evaluation

	Situation analysis	Outcome evaluation
Contextual factors of the interview	X	X
Selection of the survey population	X	X
Loss-to-follow-up		X
Outcome evaluation with and without comparison population		X

Contextual factors of the interview

In interpreting results, it is important to take into consideration the interaction between the respondent and the surveyor and contextual factors that may have affected the responses. This will help to put the results into context and provide explanations for them.

For example, as a matter of courtesy, a respondent may try to please the surveyor and say what they think she/he would like to hear, instead of answering the questions truthfully (16, 28, 48). This is a particularly significant problem in cultures that emphasize the value of not being confrontational (48) and can considerably diminish the validity of results. In analysing the results, pay particular attention to any possible influence the surveyor may have had on the behaviours or responses of participants. This is called reflexivity.

The context of the interview – for example, where it was conducted or who else was present – can affect the answers a respondent gives. The characteristics of the surveyor (age, sex, social status, etc.) can also affect the respondent's answers (14). In presenting the results of the survey, describe the context in which the interviews took place – place, time and length of the interview, presence of other people (who exactly: family, friends, peers, others) – and state how this may have influenced the responses. List any other limitations or problems encountered and how these could have affected the results and to what extent.

Selection of the survey population

The way in which the survey population was selected can have an impact on the results of the survey (Table 7). For example, if the survey population is not representative of the participant population, the results cannot be generalized.

TABLE 7:

Sampling strategies and their impact on interpretation of survey data

Selection of the entire participant population	Random sample of the participant population	Non-probability (purposive sample)
Collecting data from the entire participant population	Random sampling of the survey population	The survey population is not selected at random, introducing risk of selection bias
Interpretation: • **Situation analysis:** The outcomes are very likely to reflect KAP of this population • **Outcome evaluation:** The outcomes represent changes in KAP of the participant population	**Interpretation:** • **Situation analysis:** The results can be generalized to the entire target population (within the chosen statistical limits, confidence interval, etc.) • **Outcome evaluation:** The outcomes represent changes in KAP of the participant population that are the result of the intervention and not other factors	**Interpretation:** • **Situation analysis:** The survey population may not be representative of the participant population. The results may not reflect the KAP of the participant population • **Outcome evaluation:** The differences in KAP observed over time may not be the result of changes in KAP of the participant population but of changes in the survey population (outcomes cannot be generalized)

Loss-to-follow-up

An outcome evaluation should use either the same respondents for both baseline and endline surveys or properly selected random samples to ensure that pre- and post-intervention indicators can be legitimately compared. The first option is not always possible, because respondents may not be available or may refuse to participate in the endline survey. This results in what is called a loss-to-follow-up. The loss-to-follow-up is the percentage of respondents who participated in the baseline survey but did not participate in the endline survey.

$$\text{Loss-to-follow-up} = 100 - \left(\frac{\text{Number of respondents at endline}}{\text{Number of respondents at baseline}} \times 100 \right)$$

A large loss-to-follow-up can bias the outcomes, because it means that the indicators obtained from the endline survey are not derived from the baseline respondents. The baseline and endline indicators are thus not directly comparable and thus comparing them does not provide a valid indication of changes in KAP resulting from the intervention.

Interpretation

The "5-to-20 rule" can be used to interpret the validity of outcomes (51, 52). This rule states that:

- if less than 5 percent of the baseline respondents are lost to follow-up, the loss probably results in minimal impact on the validity of outcomes; and
- if more than 20 percent of the baseline population is lost to follow-up, the loss threatens the validity of results. In this case, caution is advised in making conclusions based on the outcomes obtained.

Outcome evaluation with and without a control population

Outcome evaluation with comparison population

Ideally, the survey questionnaire should also be administered to a control or non-intervention population at baseline and post-intervention. This allows the project to assess the risk of selection bias by comparing the sociodemographic characteristics (age, sex, socio-economic status, etc.) of the participant and control populations. If these two groups are similar before the intervention, we can assume that differences in the outcomes between the two groups are attributable to the intervention. If there are differences between the two groups at baseline, determine if these differences could have influenced outcomes.

Outcome evaluation without a comparison population

If there is no control population with which to compare results, outcome evaluation cannot determine to what extent changes in KAP of the intervention population can be attributed to the project or intervention; changes may have been introduced by factors other than the intervention.

In the absence of a control population, assess and report all possible pathways that may have led to the outcomes obtained and determine if the intervention was a critical factor of change in KAP, i.e. identify plausible links between the project or intervention and the outcomes. Such analyses indicate the likelihood that changes in KAP were the result of the project or intervention, but cannot provide 100 percent certainty.

4.4 Reporting the results

The final step is to report the results and findings of the outcome evaluation or situation analysis in a concise and accessible way. The aim is to produce a report that is useful all those who may benefit from the knowledge generated, including funding agencies, local stakeholders, project planners and participants themselves.

The report should include: a cover page and title of the survey; a table of contents; an introduction; the study objectives; the methods used; the results; discussion of the results; conclusions and recommendations; references; and appendixes. Ideally, the report should be no more than 20 pages (excluding appendixes).

The content of some the key elements of the report is discussed in more detail below.

Cover page and title of survey

You may need to include the names of all institutions that participated in the project and of the donors that supported the work. Check carefully any agreements for details of requirements.

Table of contents

This is essential to guide the reader. Include lists of tables, figures and boxes.

Introduction

Background: Describe the general context, the location, the population, the country and the nutrition problem of concern. Provide a summary of the project.

Justification for the survey: Provide the reasons why the KAP study was conducted.

Objectives

Write down the objectives of the KAP survey or study using bullet points (see "Step 1: Define the survey objectives and the modules to use" page 28).

Methods

Provide information about:

- the survey team: survey manager(s) and number of surveyors
- the participant population
- the selection of the survey population and sample size
- the location (survey area) and time of survey
- the questionnaire content: modules used and how these were adapted
- pre-testing of the survey questionnaire
- training of surveyors
- data collection
- quality control
- analysis: data entry, data cleaning, software used
- limitations, problems encountered and possible biases.

Presentation of results

This is the most important section.

Sociodemographic characteristics: Describe the survey population (number of respondents, sociodemographic characteristics). This information will help give context to the survey findings. It can be reported in a table.

Main results: Report the main results of the study, relating them to the objectives of the KAP evaluation.

Discussion

Present the interpretation of the most significant results in this section, taking into account the context and limitations of the study. Acknowledge any factors that affected or may have affected the results (see "4.3 Putting the results into context," page 57).

Situation analysis: Report the nutrition situation in terms of local nutrition problems and the local situation in terms of KAP (see "Situation analysis for intervention planning," page 53).

Outcome evaluation: Discuss the effectiveness of the nutrition intervention as indicated by the survey findings. Report positive outcomes and provide explanations about what could have led to them (see "Outcome evaluation," page 56). For example, if the evaluation shows that, post-intervention, more caregivers are feeding their infants with more iron-rich foods, possible explanations include an increase in production of iron-rich foods in the community or a change in practices following the intervention.

Conclusions and recommendations

Draw out your conclusions based on the results and present recommendations for future action.

Situation evaluation: Based on the findings, identify priority needs in nutrition education with a view to informing project or intervention design.

Outcome evaluation: Present the following:

- What has been achieved by the nutrition project or intervention?
- Was it successful or not and why?
- Which elements of the intervention have been successful? Which were not?
- How can future projects or interventions be improved so that they are more effective (i.e. produce more positive outcomes)?

References

List the references used, in alphabetical order according to author surname.

Appendixes

Include questionnaires and supporting documents (map of the area, calendar of local events, etc.).

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Appendixes

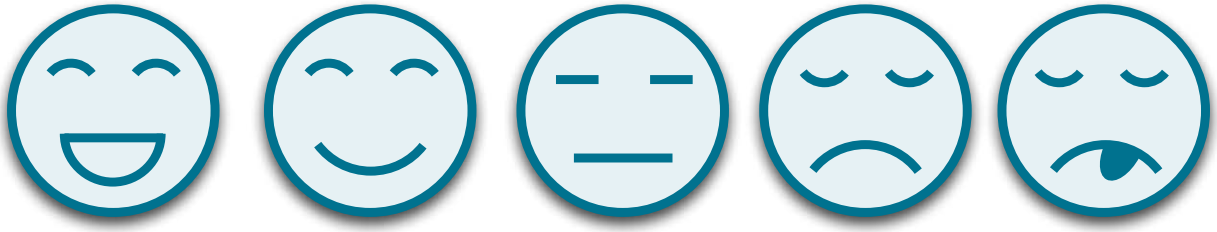
Appendix 1:

Visual support to measure attitudes

A visual scale can be used to help children or respondents with little education to rate their response to attitudinal questions. The surveyor should show the visual scale to the respondent during the interview, list the response options and point out the images relating to the response options. The visual scale can also be used in a self-administered questionnaire; response options can be placed under each image (see example on page 34).

Three-point scale

Five-point scale



Appendix 2:

Readiness to change

"Readiness to change" refers to an individual's readiness to act or perform a nutrition-related behaviour or practice. It is measured using the Transtheoretical Model of Behaviour Change (15, 26, 27). According to this model, individuals move through five stages in the process of behaviour change, culminating in measurable behaviour change (28). The five stages of change are as follows:

1. **Precontemplation**: the respondent is not ready to change behaviour or adopt a new behaviour within the next six months.

2. **Contemplation**: the respondent is thinking about changing his/her behaviour or adopting a new behaviour within the next six months.

3. **Preparation**: the respondent is committed to change his/her behaviour of adopt a new behaviour within the next 30 days.

4. **Action**: the respondent has changed his/her behaviour or adopted a new behaviour in the past six months.

5. **Maintenance**: the respondent has changed his/her behaviour or adopted a new behaviour for at least six months. In this last stage, the behaviour has become a habit.

Stages of change provide information about what people think about their eating and feeding behaviours or practices and their interest in change (37).

Example: Measuring readiness to eat more mango

> How ready do you feel to eat more mango (vitamin-A-rich fruit)? Are you (*read the statements for the five stages of change*)
>
> - ☐ Not thinking about eating more mango (*Precontemplation*)
> - ☐ Thinking about eating more mango (*Contemplation*)
> - ☐ Planning to eat more mango in the next six months (*Preparation*)
> - ☐ Definitely planning to eat more mango in the next month (*Action*)
> - ☐ Eating more mango now (*Maintenance*)

Appendix 3:

Informed consent form and sociodemographic questionnaire for caregivers of infants and young children (0–6 months and 6–23 months)

The MS Word format of Appendix 3 is available for adaptation at: www.fao.org/docrep/019/i3545e/i3545e00.htm

Informed consent and confidentiality of interviews

Good morning/afternoon, Mr/Mrs _____. We are from [**insert the name of your organization**]. We are working on a project concerned with nutrition and education in which you could participate/participated. [**Include the objectives and a short description of the project**]. Now, the project is just starting/almost finished [**select depending if the project is just starting or almost finished**] and we are completing a survey among participants to know more about their knowledge, attitudes and practices to do with nutrition. The interview will take about [**time estimated to conduct the interview**]. All the information we obtain will remain strictly confidential and your answers and name will never be revealed. Also, you are not obliged to answer any question you do not want to, and you may stop the interview at any time.

The objective of this study is to [**evaluate the effectiveness of an intervention (if outcome evaluation) or assess the nutrition situation (if situation analysis)**]. This is not to evaluate or criticize you, so please do not feel pressured to give a specific response and do not feel shy if you do not know the answer to a question. I am not expecting you to give a specific answer; I would like you to answer the questions honestly, telling me about what you know, how you feel, the way you live and how you prepare food. Feel free to answer questions at your own pace.

Do you agree to participate in this interview?

Yes ___ No ___ *If yes, continue to the next question; if no, stop the interview*.

Do you have any question before we start? (*Answer questions*).

May I start now?

Sociodemographic questionnaire for caregivers

Caregiver		
1. Name and code	What is your name?	
	Insert respondent code	_ _ _ _
2. Sex	*Insert the sex of the caregiver*	Male ☐ Female ☐
3. Relationship	What is your relationship with the child you take care of?	Mother ☐ Father ☐ Grandmother/ Grandfather ☐ Other ☐
4. Caregiver's age	When is your birthday? *Probe if necessary*: On what day and in which month and year were you born?	_ _ / _ _ /_ _ _ _ day/month/year
	How old are you? *Probe if necessary*: What was your age at your last birthday? *If the information conflicts with the previous answer, determine which one is more accurate*	Age in completed years _ _
5. Parity (only for women)	How many children do you have? *For pregnant women: ask if this is her first pregnancy*	Number of children _ _ First pregnancy ☐
6. Geographical characteristics	Where do you live? *Adapt to the local geographical characteristics: district, city, village, section, tribe, etc.*	District _____ City _____ Village _____ Section _____ Other _____

7. Educational level	Have you ever attended school? *If yes, continue asking*: What is the highest level of school you attended?	None ☐ Primary school ☐ Secondary school ☐ Higher ☐
	What is the highest grade/form/year you completed at that level?	Grade _ _
Infant/young children		
1. Child's name	What is your child's name?	
2. Child's sex	Is (*the name of the child*) male or female?	Male ☐ Female ☐
3. Child's age	When is your child's birthday? *Probe if necessary*: On what day and in which month and year was (*name of the child*) born? Does he/she have a health/vaccination card with the birth date recorded? *If yes, record the date of birth as documented in the card*	_ _ / _ _ /_ _ _ _ day/month/year
	How old was (*name of the child*) at his/her last birthday? *Record age in completed years and/or months*	Age in completed years _ _ Age in completed months _ _

Appendix 4:

Informed consent form and sociodemographic questionnaire for school-aged children

The MS Word format of Appendix 4 is available for adaptation at: www.fao.org/docrep/019/i3545e/i3545e00.htm

Informed consent and confidentiality of interviews

For parents/caregivers of children younger than 18 years of age

Good morning/afternoon, Mr/Mrs _____. We are from [**insert the name of your organization**]. We are working on a project concerned with nutrition and education in which your child could participate/participated. [**Include the objectives and a short description of the project**]. Now, the project is just starting/almost finished [**select depending if the project is just starting or almost finished**] and we are completing a survey among participants to know more about their knowledge, attitudes and practices to do with nutrition. The interview will take about [**time estimated to conduct the interview**]. All the information we obtain will remain strictly confidential and your child's name and answers will never be revealed. If you agree that your child may participate in the survey, he/she will be asked to give his/her own consent. Do you agree that your child participates in the survey?

Yes ___ No ___ *If yes, continue to the next question; if no, do not conduct the interview*.

Respondent school-aged children

Good morning/afternoon. We are working on a project concerned with nutrition and education in which you could participate/participated. [**Include the objectives and a short description of the project**]. The project is just starting/almost finished [**select depending if the project is just starting or almost finished**] and we are completing a survey among children like you who could participate/participated in the project because we want to know more about their knowledge, attitudes and practices in nutrition. The interview will take about [**time estimated to conduct the interview**]. All the information we obtain will remain strictly confidential and your answers and name will never be revealed. Also, you are not obliged to answer any question you do not want to, and you may stop the interview at any time.

The objective of this study is to [**evaluate the effectiveness of an intervention (if outcome evaluation) or assess the nutrition situation (if situation analysis)**]. This is not to evaluate or criticize you, so please do not feel pressured to give a specific response and do not feel shy if you do not know the answer to a question. I am not expecting you to give a specific answer; I would like you to answer questions honestly, telling me about what you know, how you feel, the way you live and how you eat and prepare food. Feel free to answer questions at your own pace.

Do you agree to participate in this interview?

Yes ___ No ___ *If yes, continue to the next question; if no, stop the interview*.

Do you have any question before we start? (*Answer questions*).

May I start now?

Sociodemographic questionnaire for school-aged children

School-aged children		
1. Child's name and code	What is your name?	
	Insert respondent code	_ _ _ _
2. Child's sex	*Insert the child's sex*	Male ☐ Female ☐
3. Child's age	When is your birthday? *Probe if necessary*: On what day and in which month and year were you born?	_ _ / _ _ / _ _ _ _ day/month/year
	How old are you? *Probe if necessary*: How old were you at your last birthday? *Record age in completed years and months* *If the information conflicts with the previous answer, determine which one is more accurate*	Age in completed years _ _ Age in completed months _ _
4. Geographical characteristics	Where do you live? *Adapt to the local geographical characteristics: district, city, village, section, tribe, etc.*	District _____ City _____ Village _____ Section _____ Other _____
5. Educational level	What level of school are you attending now?	Primary school ☐ Secondary school ☐ Higher ☐
	What grade/form/year?	Grade _ _

Appendix 5:

Informed consent form and sociodemographic questionnaire for adults (> 18 years)

The MS Word format of Appendix 5 is available for adaptation at: www.fao.org/docrep/019/i3545e/i3545e00.htm

Informed consent and confidentiality of interviews

Good morning/afternoon, Mr/Mrs _____. We are from [**insert the name of your organization**]. We are working on a project concerned with nutrition and education in which you could participate/participated. [**Include the objectives and a short description of the project**]. Now, the project is just starting/almost finished [**select depending if the project is just starting or almost finished**] and we are completing a survey among participants to know more about their knowledge, attitudes and practices to do with nutrition. The interview will take about [**time estimated to conduct the interview**]. All the information we obtain will remain strictly confidential and your answers and name will never be revealed. Also, you are not obliged to answer any question you do not want to, and you may stop the interview at any time.

The objective of this study is to [**evaluate the effectiveness of an intervention (if outcome evaluation) or assess the nutrition situation (if situation analysis)**]. This is not to evaluate or criticize you, so please do not feel pressured to give a specific response and do not feel shy if you do not know the answer to a question. I am not expecting you give a specific answer; I would like you to answer questions honestly, telling me about what you know, how you feel, the way you live and how you eat and prepare food. Feel free to answer questions at your own pace.

Do you agree to participate in this interview?

Yes ___ No ___ *If yes, continue to the next question; if no, stop the interview*.

Do you have any question before we start? (*Answer questions*).

May I start now?

Sociodemographic questionnaire for adults (> 18 years)

Adults (>18 years)		
1. Name and code	What is your name?	
	Insert respondent code	_ _ _ _
2. Sex	*Insert the sex of the respondent*	Male↑ Female↑
3. Age	When is your birthday? *Probe if necessary*: On what day and in which month and year were you born?	_ _ / _ _ /_ _ _ _ day/month/year
	How old are you? *Probe if necessary*: What was your age at your last birthday? *If the information conflicts with the previous question, determine which one is more accurate*	Age in completed years _ _
4. Geographical characteristics	Where do you live? *Adapt to the local geographical characteristics: district, city, village, section, tribe, etc.*	District _____ City _____ Village _____ Section _____ Other _____
5. Educational level	Have you ever attended school? *If yes, continue asking*: What is the highest level of school you attended?	None ☐ Primary school ☐ Secondary school ☐ Higher ☐
	What is the highest grade/form/year you completed at that level?	Grade _ _

Appendix 6:

Nutrition-related KAP model questionnaires

The modules included in Appendix 6 are model questionnaires that need to be adapted to the local context and to the requirements of the specific project or intervention in which they are going to be used. They are available in MS Word format for easy adaptation and reproduction at: www.fao.org/docrep/019/i3545e/i3545e00.htm

MODULE 1: Feeding infants (0–6 months)

Note: *The surveyor should ideally be female in order to put mothers at ease.*

Explain to the participant:

I am going to ask you some questions about nutrition of infants from birth to six months old. Please let me know if you need me to clarify any of my questions. Feel free to ask any question you may have.

Practices

1 **Question P.1: Breastfeeding**[3]

Was (*name of the baby*) breastfed yesterday during the day or at night?

- ☐ Yes
- ☐ No
- ☐ Don't know/no answer

1 **Question P.2: Feeding breastmilk**[3]

Sometimes babies are fed breastmilk in different ways, for example by spoon, cup or bottle, or are breastfed by another woman.

Did (*name of the baby*) consume breastmilk in any of these ways yesterday during the day or night?

- ☐ Yes
- ☐ No
- ☐ Don't know/no answer

[3] Questions adapted with permission from WHO's infant and young-child feeding module taken from: WHO. 2010. *Indicators for assessing infant and young child feeding practices - Part 2: Measurement*. Geneva, Switzerland: World Health Organization.

1 Question P.3: Feeding breastmilk when the mother is absent

When you are not home or cannot feed the baby yourself, who does it?

- ☐ Father
- ☐ Grandmother
- ☐ Other children
- ☐ Other_____
- ☐ Don't know/no answer

If you are not there to feed the baby, what type of food is the baby fed?

- ☐ Breastmilk by spoon, cup or bottle
- ☐ Infant formula by spoon, cup or bottle
- ☐ Other liquids

1 Question P.4: Introducing liquids[3]

Next I would like to ask you about some liquids that (*name of the baby*) may have had yesterday during the day or at night.

Did (*name of the baby*) have any of the following liquids? (*Read the list of liquids, starting with "plain water"*)

A. Plain water

- ☐ Yes
- ☐ No
- ☐ Don't know

B. Infant formula such as (*insert local examples*)

- ☐ Yes
- ☐ No
- ☐ Don't know

C. Milk, such as tinned, powdered or fresh animal milk

- ☐ Yes
- ☐ No
- ☐ Don't know

D. Juice or juice drinks

- ☐ Yes
- ☐ No
- ☐ Don't know

E. Clear broth

- ☐ Yes
- ☐ No
- ☐ Don't know

F. Yogurt

- ☐ Yes
- ☐ No
- ☐ Don't know

G. Thin porridge

- ☐ Yes
- ☐ No
- ☐ Don't know

H. Any other liquids such as (*list other water-based liquids available in the local setting*)

- ☐ Yes
- ☐ No
- ☐ Don't know

I. Any other liquids

- ☐ Yes
- ☐ No
- ☐ Don't know

Preliminary analysis

From questions P.1, P.2, P.3 and P.4 determine if the child is exclusively breastfed (i.e. fed exclusively with breastmilk)

- ☐ Exclusively breastfed
- ☐ Not exclusively breastfed

Knowledge

2 Question K.1: Breastmilk at birth

What is the first food a newborn baby should receive?

_____

_____

- ☐ *Only breastmilk*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis
- ☐ Knows
- ☐ Does not know

1 Question K.2: Meaning of exclusive breastfeeding

Have you heard about exclusive breastfeeding?

- ☐ Yes
- ☐ No → *continue to question K.3*

What does exclusive breastfeeding mean?

_____

_____

- ☐ *Exclusive breastfeeding means that the infant gets only breastmilk and no other liquids or foods*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis
- ☐ Knows
- ☐ Does not know

1 Question K.3: Recommended length of exclusive breastfeeding

How long should a baby receive nothing more than breastmilk?

Probe if necessary:
Until what age is it recommended that a mother feeds nothing more than breastmilk?

_____

_____

- ☐ *From birth to six months*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis
- ☐ Knows
- ☐ Does not know

2 Question K.4: Breastmilk is sufficient for babies from birth to six months old

Why do you think breastmilk is the only food recommended for infants up to six months old?

Probe if necessary:
Why is breastmilk alone sufficient to feed babies during the first six months?

_____

_____

- ☐ *Because breastmilk provides all the nutrients and liquids a baby needs in its first six months*
- ☐ *Because babies cannot digest other foods before they are six months old*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis
- ☐ Knows
- ☐ Does not know

1 Question K.5: Frequency of feeding

How often should a baby younger than six months be breastfed or fed with breastmilk?

_____

_____

- ☐ *On demand, whenever the baby wants*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

2 Question K.6: Benefits of exclusive breastfeeding for babies

What are the benefits for a baby if he or she receives only breastmilk during the first six months of life?

_____

_____

- ☐ *He/she grows healthily*
- ☐ *Protection from diarrhoea and other infections*
- ☐ *Protection against obesity and chronic diseases in adulthood*
- ☐ *Protection against other diseases. Specify* _____
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

3 Question K.7: Benefits of exclusive breastfeeding for mothers

What are the physical or health benefits for a mother if she exclusively breastfeeds her baby?

Probe if necessary:

_____

_____

- ☐ *Delays fertility*
- ☐ *Helps her lose the weight she gained during pregnancy*
- ☐ *Lowers risk of cancer (breast and ovarian)*
- ☐ *Lowers risk of losing blood after giving birth (less risk of post-partum haemorrhage)*
- ☐ *Improves the relationship between the mother and baby*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

2 Question K.8: Maintaining breastmilk supply

Many times, mothers complain about not having enough breastmilk to feed their babies.

Please tell me different ways a mother can keep up her milk supply.

_____

_____

- ☐ *Breastfeeding exclusively on demand*
- ☐ *Manually expressing breastmilk*
- ☐ *Having a good nutrition/eating well/having a healthy or diversified diet*
- ☐ *Drink enough liquids during the day*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

☐ Knows

☐ Does not know

Number of correct responses _____

2 Question K.9: Overcoming barriers to breastfeeding

Many mothers need to work and are separated from their baby. In this situation, how could a mother continue feeding her baby exclusively with breastmilk?

_____

_____

By:

- ☐ *Expressing breastmilk by hand, storing it and asking someone to give breastmilk to the baby*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

☐ Knows

☐ Does not know

3 Question K.10: Seeking health care if breastfeeding difficulties arise

If a mother has difficulties feeding breastmilk what should she do to overcome them?

Probe if necessary:

Who can help the mother to solve the problem?

_____

_____

- ☐ *Seek professional help from health-care services: doctors, nurses, midwives or other health professionals*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Attitudes

Attitudes towards an ideal or desired nutrition-related practice

1 Breastfeeding exclusively for six months

Perceived benefits

How good do you think it is to breastfeed your baby exclusively for six months?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to breastfeed your baby exclusively for six months?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

1 Breastfeeding on demand

Perceived benefits

How good do you think it is to breastfeed your baby on demand, that is when the baby wants to feed?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to breastfeed your child on demand?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

Self-confidence

Breastfeeding

How confident do you feel in breastfeeding your child?

- ☐ 1. Not confident
- ☐ 2. Ok/so-so
- ☐ 3. Confident

If Not confident:

Can you tell me the reasons why you do not feel confident?

_____

_____

Expressing and storing breastmilk

How confident do you feel in expressing and storing breastmilk so that someone else can feed your baby?

- ☐ 1. Not confident
- ☐ 2. Ok/so-so
- ☐ 3. Confident

If Not confident:

Can you tell me the reasons why you do not feel confident?

_____

_____

MODULE 2: Feeding young children (6–23 months)

Explain to the participant:

I am going to ask you some questions about nutrition of infants aged from 6 to 23 months. Please let me know if you need me to clarify any of my questions. Feel free to ask any question you may have.

Season:

☐ Low food season

☐ High food season

Practices

1 Question P.1: Continued breastfeeding[4]

Was (*name of the baby*) breastfed or did he or she consume breastmilk yesterday during the day or at night?

☐ Yes

☐ No

☐ Don't know/no answer

3 Question P.2: Dietary diversity[4]

Now I would like to ask you about (other) liquids or foods that (*name of the baby*) ate yesterday during the day or at night. I am interested in whether your child had the item even if it was combined with other foods.

For example, if (*name of the baby*) ate a millet porridge made with a mixed vegetable sauce, you should reply yes to any food I ask about that was an ingredient in the porridge or sauce.

Please do not include any food used in a small amount for seasoning or condiments (like chillies, spices, herbs or fish powder); I will ask you about those foods separately.

Yesterday during the day or at night, did (*name of the baby*) eat:

(Read the food lists. Underline the corresponding foods consumed and tick the column Yes or No depending on whether any food item of the list was consumed. Record the number of times when relevant (Group 3)).

[4] Questions adapted with permission from WHO's infant and young child feeding module taken from: WHO. 2010. *Indicators for assessing infant and young child feeding practices - Part 2: Measurement.* Geneva, Switzerland: World Health Organization.

Group	Food lists	No	Yes
Group 1: Grains, roots and tubers	Porridge, bread, rice, noodles or other foods made from grains		
	White potatoes, white yams, manioc, cassava or any other foods made from roots		
Group 2: Legumes and nuts	Any foods made from beans, peas, lentils, nuts or seeds		
Group 3: Dairy products	Infant formula, such as **[insert local examples]**		How many times? _____
	Milk, such as tinned, powdered or fresh animal milk		How many times? _____
	Yogurt or drinking yogurt		How many times? _____
	Cheese or other dairy products		
Group 4: Flesh foods	Liver, kidney, heart or other organ meats		
	Any meat, such as beef, pork, lamb, goat, chicken or duck		
	Fresh or dried fish, shellfish or seafood		
	Grubs, snails or insects		
Group 5: Eggs	Eggs		
Group 6: Vitamin A fruits and vegetables	Pumpkin, carrots, squash or sweet potatoes that are yellow or orange inside		
	Any dark green vegetables **[insert local examples]**		
	Ripe mangoes (fresh or dried [not green]), ripe papayas (fresh or dried), musk melon **[insert other local vitamin-A-rich fruits]**		
	Foods made with red palm oil, red palm nut or red palm nut pulp sauce		
Group 7: Other fruits and vegetables	Any other fruits or vegetables		
Others (not counted in the dietary diversity score)	Any oil, fats, or butter or foods made with any of these		
	Any sugary foods, such as chocolates, sweets, candies, pastries, cakes or biscuits		
	Condiments for flavour, such as chillies, spices, herbs or fish powder		

☐ The baby does not consume any food other than breastmilk

Preliminary analysis

Number of food groups consumed the previous day _____/7

1 Question P.3: Minimum meal frequency[4]

How many times did (*name of the baby*) eat foods, that is meals and snacks other than liquids yesterday during the day or at night?

Number of times _____

Don't know/no answer

Preliminary analysis (to do after the interview)

WHO (2008) recommendations for minimum meal frequency:

For breastfed children:

- 2–3 times for breastfed infants 6–8 months
- 3–4 times for breastfed infants 9–23 months

For non-breastfed children:

- 4 times for non breast-fed-children 6–24 months (including milk feeds, identified in question P.2, Group 3)

From questions P.1, P.2 and P.3, determine if the child receives food the minimum number of times according to WHO recommendations:

☐ Less than recommended
☐ The minimum number of times each day (follows the recommendation)
☐ More than recommended

Knowledge

2 Question K.1: Continued breastfeeding

How long is it recommended that a woman breastfeeds her child?

Probe if necessary:
Until what age is it recommended that a mother continues breastfeeding?

_____

_____

- ☐ *Six months or less*
- ☐ *6–11 months*
- ☐ *12–23 months*
- ☐ *24 months and more (correct response)*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis
- ☐ Knows
- ☐ Does not know

1 Question K.2: Age of start of complementary foods

At what age should babies start eating foods in addition to breastmilk?

_____

_____

- ☐ *At six months*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis
- ☐ Knows
- ☐ Does not know

2

Question K.3: Reason for giving complementary foods at six months

Why is it important to give foods in addition to breastmilk to babies from the age of six months?

_____

_____

- ☐ *Breastmilk alone is not sufficient (enough)/cannot supply all the nutrients needed for growth/from six months, baby needs more food in addition to breastmilk*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

1

Question K.4: Consistency of meals

Please look at these two pictures of porridges. Which one do you think should be given to a young child?

(Show the images/pictures of thick and watery/thin porridges and tick one of the options here below depending on the respondent answer.)

- ☐ *Shows the thick porridge*
- ☐ *Shows the watery*
- ☐ *Does not know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Support material: porridges

1.

2.

2 Question K.5: Reason for consistency of meals

Why did you pick that picture?

_____

_____

- ☐ *Because the first porridge is thicker than the other*
- ☐ *Because the thick porridge is more nutritious/because it is prepared with different types of foods or ingredients (food diversity)*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

1 Question K.6: Dietary diversity and ways of enriching porridge

To feed their children, many mothers give them rice porridge or borbor.

Please tell me some ways to make rice porridge more nutritious or better for your baby's health.

Probe if necessary:

Which foods or types of food can be added to rice porridge make it more nutritious?

_____

_____

(Response options are listed on the next page).

By adding:

- ☐ *Animal-source foods (meat, poultry, fish, liver/organ meat, eggs, etc.)*
- ☐ *Pulses and nuts: flours of groundnut and other legumes (peas, beans, lentils, etc.), sunflower seed, peanuts, soybeans*
- ☐ *Vitamin-A-rich fruits and vegetables (carrot, orange-fleshed sweet potato, yellow pumpkin, mango, papaya, etc.)*
- ☐ *Green leafy vegetables (e.g. spinach)*
- ☐ *Energy-rich foods (e.g. oil, butter/ghee)*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

3 Question K.7: Responsive feeding

Do you know any ways to encourage young children to eat?

_____

_____

- ☐ *Giving them attention during meals, talk to them, make meal times happy times*
  - ☐ *clap hands*
  - ☐ *make funny faces/play/laugh*
  - ☐ *demonstrate opening your own mouth very wide/modelling how to eat*
  - ☐ *say encouraging words*
  - ☐ *draw the child's attention*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Attitudes
Attitudes towards an ideal or desired nutrition-related practice

1 Self-confidence

How confident do you feel in preparing food for your child?

- ☐ 1. Not confident
- ☐ 2. Ok/so-so
- ☐ 3. Confident

If Not confident:

Can you tell me the reasons why you do not feel confident?

_____

_____

1 Giving a diversity of food (foods from many food groups)

Perceived benefits

How good do you think it is to give different types of food to your child each day?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to give different types of food to your child each day?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

1 Feeding frequently

Perceived benefits

How good do you think it is to feed your child several times each day?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to feed your child several times each day?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

1 Continuing breastfeeding beyond six months

Perceived benefits

How good do you think it is to continue breastfeeding beyond six months?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to continue breastfeeding beyond six months?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

MODULE 3: Diet of school-aged children

Note: *Depending on the study context, questions from this module can be administered to different players involved in changing knowledge, attitudes and practices, some of whom may be the project's participant populations, such as parents and teachers of school-age children or mothers, caregivers (e.g. fathers, grandmothers).*

Explain to the participant (child):

I am going to ask you some questions about your nutrition and nutrition in general. Please let me know if you need me to clarify any of my questions. Feel free to ask any question you may have.

Season:

☐ Low food season

☐ High food season

Practices

1 Question P.1: Having breakfast: time and place

A. Did you have breakfast before going to school?

☐ Yes..... *Go to question P.1B*

☐ No ..... *Go to question P.2*

☐ Don't know/no answer

If Yes:

B. At what time?

☐ Between 6 a.m. and 9 a.m.

☐ Between 9 a.m. and noon

☐ Between noon and 3 p.m.

C. Where?

☐ Home

☐ School

☐ Elsewhere (*specify*) _____

1 Question P.2: Having lunch: time and place

A. *If the interview is being conducted before lunchtime, ask:* Did you have lunch yesterday?

If the interview is being conducted after lunchtime, ask: Did you have lunch today?

- ☐ Yes ..... *Go to question P.2B*
- ☐ No ..... *Go to question P.3*
- ☐ Don't know/no answer

If Yes:

B. At what time?

- ☐ Between 9 a.m. and noon
- ☐ Between noon and 3 p.m.
- ☐ Between 3 p.m. and 6 p.m.

C. Who prepares your lunch?

- ☐ Parents at home
- ☐ School cafeteria
- ☐ Lunch is bought with pocket money
- ☐ Other (*specify*) _____

1 Question P.3: Dinner/supper: time and place

A. Did you have dinner yesterday?

- ☐ Yes ..... *Go to question P.3B*
- ☐ No ..... *Go to question P.4*
- ☐ Don't know/no answer

If Yes:

B. At what time?

- ☐ Between 3 p.m. and 6 p.m.
- ☐ Between 6 p.m. and 9 p.m.
- ☐ Between 9 p.m. and midnight

C. Where?

- ☐ Home
- ☐ School
- ☐ Elsewhere (*specify*)

  _____

1 Question P.4: Snacks

A. Yesterday during the day and night, did you eat anything between the meals?

- ☐ Yes..... *Go to question P.4B*
- ☐ No..... *Go to question P.5*
- ☐ Don't know/no answer

If Yes:

B. What did you eat?

[Include a list of locally available snacks or the responses most cited during pre-testing.]

- ☐ Other (*specify*) _____

1 Question P.5: Bought food

A. Yesterday during the day and night, did you buy foods with your own money?

- ☐ Yes..... *Go to question P.5.B*
- ☐ No..... *Go to question K.1*
- ☐ Don't know/no answer

If Yes:

B. What did you buy?

[Include a list of locally available snacks/foods or the responses most cited during pre-testing.]

- ☐ Other

C. Where did you buy those foods?

- ☐ At school/cafeteria
- ☐ On the street (from street vendors)
- ☐ Other (*specify*) _____

Knowledge

1 Question K.1: Consequences of short-term hunger at school

Some children do not have breakfast before going to school and are hungry in class. What is the consequence for children of not having breakfast and being hungry at school?

Probe if necessary:

What problems can children have if they don't eat before going to school?

_____

_____

- ☐ *Children have short attention/have low concentration/cannot study well/ do not do as well at school as they should*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

2 Question K.2: Discouraging sweets and candies

Why should parents discourage sticky and sugar-rich foods, such as sweets and candies?

Probe if necessary:

Why is it so bad to eat too many sweets and candies?

_____

_____

- ☐ *Because they can cause tooth decay*
- ☐ *Because they are not nutritious*
- ☐ *Because they interfere with appetite*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

[Knowledge and practice questions included in other modules can be added to this module. Look at modules 6 to 13 and select the relevant questions based on the objectives of the survey.]

Attitudes
Attitudes towards an ideal or desired nutrition-related practice

1 Having breakfast before going to school

Perceived benefits

How good do you think it is to have breakfast before going to school?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to have breakfast before going to school?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

1 Having three meals a day and snacks

Perceived benefits

How good do you think it is to have three meals a day and snacks?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to have three meals a day and snacks?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

1 Having different types of foods at meal times

Perceived benefits

How good do you think it is to have different types of foods at meals?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to have different types of foods at meals?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

Attitudes towards food preference

[Refer to questions included in modules 6 and 7 and add the relevant ones based on objectives of the survey.]

MODULE 4: Nutrition during pregnancy and lactation

Explain to the participant:

I am going to ask you some questions about nutrition of pregnant and lactating women. Please let me know if you need me to clarify any of my questions. Feel free to ask any question you may have.

Practices

Question P.1: Food-intake practices

Based on the objectives of the survey, food-intake practices can be assessed in terms of:

1 **Intake of foods from a list of locally available nutrient-rich foods through a short food-intake checklist. To assess the intake of nutrient-rich foods, refer to the practice section of modules 6, 7 and 8 for iron, vitamin A and iodine, respectively. Before measuring food-intake practices, lists of locally available nutrient-rich foods of interest should be created (see "Adapting the food lists," page 31); or**

3 **Frequency of intake of foods from a list of locally available nutrient-rich foods with a short food-frequency questionnaire; or**

3 **Dietary diversity through the dietary-diversity questionnaire to assess the quality of the diet. The guidelines for measuring dietary diversity are available online (FAO, 2011 (34)): www.fao.org/fileadmin/user_upload/wa_workshop/docs/FAO-guidelines-dietary-diversity2011.pdf**

Knowledge

1 Question K.1: Women's nutrition during pregnancy and breastfeeding

For a pregnant woman:

How should a pregnant woman eat in comparison with a non-pregnant woman to provide good nutrition to her baby and help him grow?

Please list four practices she should do.

For a lactating woman:

How should a lactating woman eat in comparison with a non-lactating woman to be healthy and produce more breastmilk?

Please list four practices she should do.

_____

_____

_____

_____

- ☐ *1. Eat more food (more energy)*
  - ☐ *Eat more at each meal (eat more food each day)*

    Or
  - ☐ *Eat more frequently (eat more times each day)*
- ☐ *2. Eat more protein-rich foods*
- ☐ *3. Eat more iron-rich foods*
- ☐ *4. Use iodized salt when preparing meals*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

☐ Knows

☐ Does not know

Number of correct responses _____

2

Question K.2: Micronutrient supplements for pregnant women

Most women would benefit from two types of supplements, or tablets, during pregnancy. Which are they?

_____

_____

_____

- ☐ *Iron supplements*
- ☐ *Folic acid supplements*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

2

Question K.3: Recommendation of folic acid supplements

Can you tell me why it is so important to take folic acid supplements during pregnancy?

Probe if necessary:

What is the health benefit for taking folic acid supplements/tablets?

_____

_____

_____

- ☐ *For normal development of the nervous system of the unborn baby (brain, spine and skull)*
- ☐ *To prevent birth defects/abnormalities the nervous system of the unborn baby (brain, spine and skull)*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

3 Question K.4: Health risks for low-birth-weight babies

When a pregnant woman is undernourished, she is at risk of having a low-birth-weight baby, meaning that the baby is small or has a low birth weight. What are the health risks for these babies?

_____

_____

- ☐ *Slower growth and development*
- ☐ *Risks of infections/being sick*
- ☐ *Risks of dying*
- ☐ *Risks of being undernourished/having micronutrient deficiencies*
- ☐ *Risks of being sick once adult/developing chronic diseases in adulthood (heart disease, high blood pressure, obesity, diabetes)*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

3 Question K.5: Family planning/birth spacing

Note: *This question can generate anxiety in participants. The theme (family planning) should be handled with care.*

It is recommended that a woman waits at least two or three years between pregnancies, that is before coming pregnant once again. Please can you tell me why this is recommended?

_____

_____

- ☐ *To rebuild/fill up their body stores of nutrients (fat, iron and others)*
- ☐ *For the mother to be healthier before having a new baby/to be prepared for the arrival of a new baby*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Attitudes
Attitudes towards a health or nutrition-related problem

2 Giving birth/having a low-birth-weight baby

Perceived susceptibility

How likely do you think you are to have a low-birth-weight baby?

- ☐ 1. Not likely
- ☐ 2. You're not sure
- ☐ 3. Likely

If Not likely:

Can you tell me the reason why it is not likely?

_____

_____

Perceived severity

How serious do you think it is for your baby to have a low-birth-weight?

- ☐ 1. Not serious
- ☐ 2. You're not sure
- ☐ 3. Serious

If Not Serious:

Can you tell me the reason why it is not serious?

_____

_____

Attitudes towards an ideal or desired nutrition-related practice

1 Eating more food during pregnancy: eating more at each meal or eating more frequently or having more snacks during the day

Perceived benefits

How good do you think it is to eat more food during pregnancy?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to eat more food during pregnancy?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

MODULE 5: Undernutrition

Explain to the participant:

I am going to ask you some questions about undernutrition. Please let me know if you need me to clarify any of my questions. Feel free to ask any question you may have.

Knowledge

1 Question K.1: Signs of undernutrition

How can you recognize that someone is not having enough food?

Probe if necessary:

What are the signs of undernutrition?

_____

_____

- ☐ *Lack of energy/weakness: cannot work, study or play as normal (disability)*
- ☐ *Weakness of the immune system (becomes ill easily or becomes seriously ill)*
- ☐ *Loss of weight/thinness*
- ☐ *Children do not grow as they should (growth faltering)*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

1 Question K.2: Causes of undernutrition

What are the reasons why people are undernourished?

_____

_____

- ☐ *Not getting enough food*
- ☐ *Food is watery, does not contain enough nutrients*
- ☐ *Disease/ill and not eating food*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

What are the reasons why people do not get enough food?

_____

_____

- ☐ *Not having enough money to buy food*
- ☐ *Food is not available*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

2

Question K.3: Seeking growth monitoring for infants and young children

How can you (*caregiver*) find out if the baby is growing well or not?

Probe if necessary:

Who can help the mother to find out if the baby is growing well? Where can she go?

_____

_____

- ☐ *Go to the health centre/ask a doctor or nurse (health professional)(seeking health-care services for growth monitoring)*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

2

Question K.4: Meaning of lack of weight gain among infants and young children

Families and health workers can find out if children are well nourished or malnourished by weighing them regularly and plotting their weights on growth charts.

If the baby is not gaining weight, what does that mean?

If no answer, probe:

What could be the causes?

_____

_____

- ☐ *The baby is not eating well/the baby does not want to eat*
- ☐ *The baby may be sick often*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

1 Question K.5: Prevention of undernutrition

What should we do to prevent undernutrition among **[population of interest]**?

_____

_____

Infants (0–6 months)

- ☐ *Breastfeed exclusively/give only breastmilk*
- ☐ *Go to the health centre/hospital and check that the child is growing (growth monitoring services)*

Young children (6–23 months)

- ☐ *Give more food*
- ☐ *Feed frequently*
- ☐ *Give attention during meals*
- ☐ *Go to the health centre/hospital and check that the child is growing (growth monitoring services)*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

Attitudes
Attitudes towards a health or nutrition-related problem

1 Undernutrition

Perceived susceptibility

How likely do you think your child is to be undernourished, that is they stop growing or lose weight?

- ☐ 1. Not likely
- ☐ 2. You're not sure
- ☐ 3. Likely

If Not likely:

Can you tell me the reason why it is not likely?

_____

_____

Perceived severity

How serious do you think undernutrition is for a baby's health?

- ☐ 1. Not serious
- ☐ 2. You're not sure
- ☐ 3. Serious

If Not Serious:

Can you tell me the reason why it is not serious?

_____

_____

MODULE 6: Iron-deficiency anaemia

Explain to the participant:

I am going to ask you some questions about anaemia and iron-rich foods. Please let me know if you need me to clarify any of my questions. Feel free to ask any question you may have.

Knowledge

1 Question K.1: General signs of iron-deficiency anaemia

Have you heard about iron-deficiency anaemia?

- ☐ Yes
- ☐ No
- ☐ Don't know/no answer

If Yes:

Can you tell me how you can recognize someone who has anaemia?

_____

_____

- ☐ *Less energy/weakness*
- ☐ *Paleness/pallor*
- ☐ *Spoon nails/bent nails (koilonychia)*
- ☐ *More likely to become sick (less immunity to infections)*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

2

Question K.2: Consequences of iron-deficiency anaemia for infants and young children

What are the health risks for infants and young children of a lack of iron in the diet?

_____

_____

- ☐ *Delay of mental and physical development*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

2

Question K.3: Consequences of iron-deficiency anaemia for pregnant women

What are the health risks for pregnant women of a lack of iron in the diet?

_____

_____

- ☐ *Risk of dying during or after pregnancy*
- ☐ *Difficult delivery*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

2 Question K.4: Causes of iron-deficiency anaemia

What causes anaemia?

_____

_____

- ☐ *Lack of iron in the diet/eat too little, not much*
- ☐ *Sickness/infection (malaria, hookworm infection, other infection such as HIV/AIDS)*
- ☐ *Heavy bleeding during menstruation*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

1 Question K.5: Prevention of anaemia

How can anaemia be prevented?

_____

_____

- ☐ *Eat/feed iron-rich foods/having a diet rich in iron*
- ☐ *Eat/give vitamin-C-rich foods during or right after meals*
- ☐ *Take/give iron supplements if prescribed*
- ☐ *Treat other causes of anaemia (diseases and infections) – seek health-care assistance*
- ☐ *Continue breastfeeding (for infants 6–23 months old)*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

1 Question K.6: Iron-rich foods – easily absorbed[5]

Can you list examples of foods rich in iron?

_____

_____

Organ meat

- ☐ *Liver*
- ☐ *Kidney*
- ☐ *Heart*

[Add other locally available organ meat.]

Flesh meat

- ☐ *Beef*
- ☐ *Pork*
- ☐ *Lamb*
- ☐ *Goat*
- ☐ *Rabbit*
- ☐ *Dog*
- ☐ *Chicken*
- ☐ *Duck*

[Add other locally available flesh meat.]

Insects

- ☐ *Insect larvae*
- ☐ *Red ants*
- ☐ *Grasshoppers*
- ☐ *Crickets*

[Add other locally available insects.]

[5] The list of iron-rich foods and vitamin-A-rich foods were adapted from the FAO. 2011. *Guidelines for measuring household and individual dietary* diversity, by G. Kennedy, T. Ballard & M.C. Dop. Rome.

Fish and seafood

- ☐ *Fresh fish*
- ☐ *Dried fish*
- ☐ *Canned fish*
- ☐ *Prawns*
- ☐ *Shrimps*
- ☐ *Seafood*

[Add other locally available fish and seafood.]

Preliminary analysis

☐ Knows

☐ Does not know

Number of correct responses _____

2 Question K.7: Foods that increase iron absorption

When taken during meals, certain foods help the body absorb and use iron. What are those foods?

_____

_____

- ☐ *Vitamin-C-rich foods, such as fresh citrus fruits (orange, lemons, etc.)*

[List locally available vitamin-C-rich foods.]

- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

☐ Knows

☐ Does not know

Number of correct responses _____

2 Question K.8: Foods that decrease iron absorption

Some beverages decrease iron absorption when taken with meals. Which ones?

_____

_____

- ☐ *Coffee*
- ☐ *Tea*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

Practices

1 Question P.1: Food-intake practices[5]

I would like to ask you about particular foods you may eat on their own or as part of a dish.

Yesterday, during the day and night, did you eat any of the following?

(*Read the list of iron-rich foods and tick either yes or no for each food item*)

Organ meat

Liver	☐ Yes	☐ No
Kidney	☐ Yes	☐ No
Heart	☐ Yes	☐ No

[Add other locally available organ meat.]

Flesh meat

Beef	☐ Yes	☐ No
Pork	☐ Yes	☐ No
Lamb	☐ Yes	☐ No
Goat	☐ Yes	☐ No

Rabbit	☐ Yes	☐ No
Dog	☐ Yes	☐ No
Chicken	☐ Yes	☐ No
Duck	☐ Yes	☐ No

[Add other locally available flesh meat.]

Insects

Insect larvae	☐ Yes	☐ No
Red ants	☐ Yes	☐ No
Grasshoppers	☐ Yes	☐ No
Crickets	☐ Yes	☐ No

[Add other locally available insects.]

Fish and seafood

Fresh fish	☐ Yes	☐ No
Dried fish	☐ Yes	☐ No
Canned fish	☐ Yes	☐ No
Prawns	☐ Yes	☐ No
Shrimps	☐ Yes	☐ No
Seafood	☐ Yes	☐ No

[Add other locally available fish and seafood.]

Note: *This can be asked for all the locally available iron-rich foods from the list but it is recommended to prioritize some of them; for example, those most often mentioned during the educational intervention.*

2 Question P.2: Consumption of vitamin-C-rich fruits

Do you usually eat fresh citrus fruits, such as **[provide examples of locally available fresh citrus fruits]**, or drink juice made from them?

- ☐ Yes
- ☐ No
- ☐ Don't know/no answer

If Yes:

Every day?

- ☐ Yes
- ☐ No
- ☐ Don't know/no answer

When do you usually eat fresh citrus fruits? (*Read the following options to the respondent*)

- ☐ Before a meal
- ☐ During the meal
- ☐ After a meal
- ☐ Other (*specify*) _____
- ☐ Don't know/no answer

2 Question P.3: Consumption of coffee/tea

Do you usually drink coffee or tea?

- ☐ Yes
- ☐ No
- ☐ Don't know

If Yes:

Every day?

- ☐ Yes
- ☐ No
- ☐ Don't know

When do you usually drink coffee or tea? (*Read the following options to the respondent*)

- ☐ Two hours or more before a meal
- ☐ Right before a meal
- ☐ During the meal
- ☐ Right after a meal
- ☐ Two hours or more after a meal
- ☐ Other (*specify*) _____
- ☐ Don't know/no answer

Attitudes
Attitudes towards a health or nutrition-related problem

1 Iron-deficiency anaemia

Perceived susceptibility

How likely do you think your child is to be iron-deficient/anaemic?

OR

How likely do you think you are to be iron-deficient/anaemic?

- ☐ 1. Not likely
- ☐ 2. You're not sure
- ☐ 3. Likely

If Not likely:

Can you tell me the reason why it is not likely?

_____

_____

Perceived severity

How serious do you think iron-deficiency/anaemia is?

- ☐ 1. Not serious
- ☐ 2. You're not sure
- ☐ 3. Serious

If Not Serious:

Can you tell me the reason why it is not serious?

_____

_____

Attitudes towards an ideal or desired nutrition-related practice

1 Preparing meals with iron-rich foods

Perceived benefits

How good do you think it is to prepare meals with iron-rich foods such as beef, chicken or liver?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to prepare meals with iron-rich foods?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

Self-confidence

How confident do you feel in preparing meals with iron-rich foods?

- ☐ 1. Not confident
- ☐ 2. Ok/so-so
- ☐ 3. Confident

If Not confident:

Can you tell me the reasons why you do not feel confident?

_____

_____

Attitudes towards food preference

3 Food preferences

How much do you like the taste of [**iron-rich food item or meal**]?

- ☐ 1. Dislike
- ☐ 2. You're not sure
- ☐ 3. Like

MODULE 7: Vitamin A deficiency

Explain to the participant:

I am going to ask you some questions about vitamin A and food rich in vitamin A. Please let me know if you need me to clarify any of my questions. Feel free to ask any question you may have.

Knowledge

1 Question K.1: Signs of vitamin A deficiency

Have you heard about vitamin A deficiency or lack of vitamin A?

- ☐ Yes
- ☐ No
- ☐ Don't know/no answer

If Yes:

Can you tell me how you can recognize someone who lacks vitamin A in his or her body?

_____

_____

- ☐ *Weakness/feels less energetic*
- ☐ *Be more likely to become sick (less immunity to infections)*
- ☐ *Eye problems: night blindness (inability to see at dusk and in dim light), dry eyes, corneal damage, blindness*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

2 Question K.2: Causes of vitamin A deficiency

What causes a lack of vitamin A in the body?

_____

_____

- ☐ *Poor variety of foods*
- ☐ *Eat too little food/not eat much (poor intake)*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

1 Question K.3: Prevention of vitamin A deficiency

How can one prevent a lack of vitamin A in the body?

_____

_____

- ☐ *Eat/feed vitamin-A-rich foods – having/giving a diet rich in vitamin A*
- ☐ *Eat/feed foods fortified with vitamin A*
- ☐ *Give vitamin A supplements/sprinkles*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

1 Question K.4: Food sources of vitamin A[5]

Can you list examples of foods rich in vitamin A?

Probe if necessary:

Do you know of any animal-source foods, vegetables or fruits that are rich in vitamin A?

_____

_____

Animal-source foods

- ☐ *Liver*
- ☐ *Kidney*
- ☐ *Heart*
- ☐ *Egg yolks/egg from chicken, duck, guinea fowl or other bird*
- ☐ *Milk, cheese, yogurt or other dairy product*

Orange-coloured vegetables

- ☐ *Orange sweet potato*
- ☐ *Carrot*
- ☐ *Pumpkin*
- ☐ *Squash*

[Add other locally available vitamin-A-rich vegetables (e.g. red sweet pepper).]

Green vegetables

- ☐ *Amaranths, spinach, cassava leaves, kale and other green leafy vegetables*

[Add locally available vitamin-A-rich leaves.]

Fruits (orange- or yellow-coloured non-citrus fruits)

- ☐ *Ripe mango*
- ☐ *Ripe papaya*
- ☐ *Cantaloupe*
- ☐ *Apricot*
- ☐ *Dried peach*

[Add other locally available vitamin-A-rich fruits.]

- ☐ *Red palm oil*

[Add other locally available vitamin-A-rich foods.]

Foods fortified with vitamin A

[Add locally available foods fortified with vitamin A (for example, oils, fats and sugar).]

Other foods

- ☐ *Breastmilk (for infants 0–6 months)*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

Practices

1 Question P.1: Food-intake practices[2]

I would like to ask you about particular foods you may eat on their own or as part of a dish.

Yesterday, during the day and night, did you eat any of the following foods?

Read the list of vitamin-A-rich foods and tick yes or no for each food item

Animal-source foods

Liver	☐ Yes	☐ No
Kidney	☐ Yes	☐ No
Heart	☐ Yes	☐ No

Egg yolks/egg from chicken, duck, guinea fowl or other bird

☐ Yes ☐ No

Milk, cheese, yogurt or other dairy products

☐ Yes ☐ No

Orange-coloured vegetables

Orange sweet potato	☐ Yes	☐ No
Carrot	☐ Yes	☐ No
Pumpkin	☐ Yes	☐ No
Squash	☐ Yes	☐ No

[Add other locally available vitamin-A-rich vegetables (e.g. red sweet pepper).]

Green-leafy vegetables

Amaranths, spinach and other green leafy vegetables:

☐ Yes ☐ No

[Add locally available vitamin-A-rich leaves.]

Fruits (orange- or yellow-coloured non-citrus fruits)

Ripe mango	☐ Yes	☐ No
Ripe papaya	☐ Yes	☐ No
Cantaloupe	☐ Yes	☐ No
Apricot	☐ Yes	☐ No
Dried peach	☐ Yes	☐ No

[Add other locally available vitamin-A-rich fruits.]

Red palm oil ☐ Yes ☐ No

Foods fortified with vitamin A

[List locally available foods fortified with vitamin A (e.g. oils, fats and sugar).]

Note: *This can be asked for all locally available vitamin-A-rich foods from the list but it is recommended to prioritize some of them; for example, those most often referred to during the educational intervention.*

Attitudes
Attitudes towards a health or nutrition-related problem

1 Vitamin A deficiency

Perceived susceptibility

How likely do you think your child is to lack vitamin A in his/her body?

OR

How likely do you think you are to lack of vitamin A in your body?

- ☐ 1. Not likely
- ☐ 2. You're not sure
- ☐ 3. Likely

If Not likely:

Can you tell me the reason why it is not likely?

_____

_____

Perceived severity

How serious do you think a lack of vitamin A is?

- ☐ 1. Not serious
- ☐ 2. You're not sure
- ☐ 3. Serious

If Not serious:

Can you tell me the reason why it is not serious?

_____

_____

Attitudes towards an ideal or desired nutrition-related practice

1 Preparing meals with vitamin-A-rich foods

Perceived benefits

How good do you think it is to prepare meals with vitamin-A-rich foods such as carrots, green leafy vegetables, sweet potatoes or liver?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to prepare meals with vitamin-A-rich foods?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

Self-confidence

How confident do you feel in preparing meals with vitamin-A-rich foods?

- ☐ 1. Not confident
- ☐ 2. Ok/so-so
- ☐ 3. Confident

If Not confident:

Can you tell me the reasons why you do not feel confident?

_____

_____

Attitudes towards food preference

3 Food preferences

How much do you like the taste of [**insert a vitamin-A-rich food item or meal**]?

Do you dislike it, you neither like it nor dislike it (neutral) or do you like it?

- ☐ 1. Dislike
- ☐ 2. Neutral
- ☐ 3. Like

MODULE 8: Iodine deficiency

> ***Note:*** *It is important, mainly for pregnant women, that meals are prepared with iodized salt to prevent the development of goitre and to prevent mental and physical impairment of the unborn child. However, it will be necessary to reinforce the message of using salt moderately, because a high consumption of salt is related to hypertension.*

Explain to the participant:

I am going to ask you some questions about iodine deficiency. Please let me know if you need me to clarify any of my questions. Feel free to ask any question you may have.

Practices

1 Question P.1: Use of iodized salt[6]

Did you use salt to cook the main meal eaten by members of your family last night?

- ☐ Yes
- ☐ No
- ☐ Don't know/no answer

If Yes:

What kind of salt did you use? (*If possible, ask the respondent to show you the salt.*)

- ☐ Iodized
- ☐ Not iodized
- ☐ No salt at home
- ☐ Don't know/no answer

[6] Question adapted from MICS3- Household questionnaire (UNICEF, 2005), available at: www.childinfo.org/mics3_background.html

Knowledge

1 Question K.1: Signs of iodine deficiency

Do you know what iodine deficiency is?

Probe if necessary:
Have you heard about iodine deficiency?

- ☐ Yes
- ☐ No
- ☐ Don't know/no answer

If Yes:
Can you tell me what it is?

Probe if necessary:
Can you describe the signs of a lack of iodine in the body?

_____

_____

- ☐ *Apathy (lack of motivation and excitement)*
- ☐ *Having difficulty working or studying*
- ☐ *Goitre*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

1 Question K.2: Consequences for the unborn baby

What could be the consequences or health risks for the unborn baby of a lack of iodine in the diet of a pregnant woman?

_____

_____

- ☐ *Risk of being mentally impaired*
- ☐ *Risk of being physically damaged*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

2 Question K.3: Cause of iodine deficiency

What causes iodine deficiency?

_____

_____

- ☐ *Poor or no intake of iodized salt*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

1 Question K.4: Prevention of iodine deficiency

How can iodine deficiency be prevented?

_____

_____

- ☐ *Eat/prepare foods with iodized salt*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Attitudes
Attitudes towards a health or nutrition-related problem

1 Iodine deficiency

Perceived susceptibility

Note: *The question is most relevant for pregnant women.*

How likely do you think your child is to lack iodine?

OR

How likely do you think you are to lack iodine?

- ☐ 1. Not likely
- ☐ 2. You're not sure
- ☐ 3. Likely

If Not likely:

Can you tell me the reason why it is not likely?

_____

_____

Perceived severity

How serious do you think a lack of iodine in the body is?

- ☐ 1. Not serious
- ☐ 2. You're not sure
- ☐ 3. Serious

If Not Serious:

Can you tell me the reason why it is not serious?

_____

_____

Attitudes towards an ideal or desired nutrition-related practice

1 Preparing meals with iodized salt

Perceived benefits

How good do you think it is to prepare meals with iodized salt?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to buy and use iodized salt?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

MODULE 9: Food safety

Explain to the participant:

I am going to ask you some questions about food safety. Please let me know if you need me to clarify any of my questions. Feel free to ask any question you may have.

Practices

1

Question P.1: Cleaning of dirty surfaces, plates and utensils

After you have prepared dinner, kitchen surfaces, pots, pans, plates and utensils are dirty. Can you describe how you clean them usually?

_____

_____

- ☐ *Scrape excess food into rubbish bin*
- ☐ *Wash with hot water*
- ☐ *Wash with detergent*
- ☐ *Don't know/no answer*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

1

Question P.2: Storage of perishable foods

How do you store perishable fresh foods such as raw meat, poultry and seafood?

_____

_____

- ☐ *In the refrigerator (below 5 °C)/cool box*
- ☐ *Covered (protected from insects, rodents, pests and dust)*
- ☐ *Separated from cooked or ready-to-eat foods*
- ☐ *Other*
- ☐ *Don't know/no answer*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

Knowledge

1

Question K.1: Separation of raw and cooked foods

Why should you prevent raw meat, offal, poultry and seafood from touching other foods such as those that are cooked or ready to eat?

_____

_____

- ☐ *Raw animal foods often contain germs (which may be transferred to cooked and ready-to-eat foods)*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

1

Question K.2: Cooking thoroughly

When cooking soups and stews, what sign shows that these are ready and safe to be served?

_____

_____

- ☐ *They are boiling/ well cooked*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

2 Question K.3: Storage of perishable foods

What kinds of food should be placed in the refrigerator or in a cool place, such as an icebox or cool box?

_____

_____

Perishable foods

- ☐ *Meat, offal*
- ☐ *Poultry*
- ☐ *Fish*
- ☐ *Foods from the sea or lake*
- ☐ *Milk/dairy products*
- ☐ *Cooked foods*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

☐ Knows
☐ Does not know

Number of correct responses _____

1 Question K.4: Storage of leftovers in a cool/cold place

Why should someone avoid eating leftovers that were not kept in a cool place?

_____

_____

- ☐ *Because food is not safe anymore*
- ☐ *Foods get spoiled (germs multiply very quickly and can cause illness)*
- ☐ *Higher temperatures make germs grow faster*
- ☐ *Other*
- ☐ *Don't know*

(Any of the three first response options is correct)

Preliminary analysis

☐ Knows
☐ Does not know

1 Question K.5: Washing raw fruits and vegetables

What should you do before eating raw fruits and vegetables?

_____

_____

- ☐ *Wash them with clean water*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis
- ☐ Knows
- ☐ Does not know

Attitudes
Attitudes towards a health or nutrition-related problem

1 Food poisoning/sickness from eating spoiled food

Perceived susceptibility

How likely do you think you are to get sick from eating spoiled food?

- ☐ 1. Not likely
- ☐ 2. You're not sure
- ☐ 3. Likely

If Not likely:
Can you tell me the reason why it is not likely?

_____

_____

Perceived severity

How serious do you think it is to be sick from eating spoiled food?

- ☐ 1. Not serious
- ☐ 2. You're not sure
- ☐ 3. Serious

If Not Serious:
Can you tell me the reason why it is not serious?

_____

_____

Attitudes towards an ideal or desired nutrition-related practice[7]

1 Keeping perishable food in a cool place, for example in a cool box or in the refrigerator

Perceived benefits

How good do you think it is to keep meat, poultry, fish, seafood or cooked food in a cool place, for example in a cool box or in the refrigerator?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to keep these foods in a cool box or in the refrigerator?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

[7] For additional practices to inquire on, refer to WHO. 2006 *Five Keys to Safer Food Manual*, Geneva, Switzerland: World Health Organization (available at: www.who.int/foodsafety/consumer/5keysmanual/en/).

1 Reheating leftovers before eating them

Perceived benefits

How good do you think it is to reheat leftovers before eating or serving them?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to reheat leftovers before eating or serving them?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

2 Washing fruits and vegetables with clean water

Perceived benefits

How good do you think it is to wash fruits and vegetables with clean water?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to wash fruits and vegetables with clean water?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

MODULE 10: Personal hygiene

Explain to the participant:

I am going to ask you some questions about personal hygiene. Please let me know if you need me to clarify any of my questions. Feel free to ask any question you may have.

Practices

1 Question P.1: Method of hand washing

Could you please describe step by step how you wash your hands?

_____

_____

_____

_____

_____

_____

- ☐ *a. Washes hands in a bowl of water (sharing with other people) — poor practice*
- ☐ *b. With someone pouring a little clean water from a jug onto one's hands — appropriate practice*
- ☐ *c. Under running water — appropriate practice*
- ☐ *d. Washes hands with soap or ashes*
- ☐ *Other*
- ☐ *Don't know/no answer*

Preliminary analysis

- ☐ If **both b** and **d** are ticked: the respondent knows to wash his/her hands (with clean water and soap)
- ☐ If **both c** and **d** are ticked: the respondent knows to wash his/her hands (with clean water and soap)
- ☐ If other responses are ticked **(a or other)**: the respondent does not know to wash his/her hands (with clean water and soap)

Knowledge

1 Question K.1: Prevention of food poisoning from germs from faeces

Food poisoning often results from contact with germs from faeces.

What can you do to avoid sickness from germs from human or animal faeces?

_____

_____

- ☐ *Wash hands (after going to the toilet and cleaning the baby's bottom)*
- ☐ *Remove faeces from the home and surroundings (use a latrine, teach small children to use a potty and put children's faeces in the latrine, and clean up faeces from animals)*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

1 Question K.2: Key moments for hand washing

There are key moments when you need to wash your hands to prevent germs from reaching food.

What are these key moments?

_____

_____

- ☐ *After going to the toilet/latrine*
- ☐ *After cleaning the baby's bottom/changing a baby's nappy*
- ☐ *Before preparing/handling food*
- ☐ *Before feeding a child/eating*
- ☐ *After handling raw food*
- ☐ *After handling garbage*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

Attitudes
Attitudes towards a health or nutrition-related problem

2 Sickness from not washing hands

Perceived susceptibility

How likely do you think you are to become sick, such as having stomach ache or diarrhoea, from not washing your hands?

OR

How likely do you think it is that your child will become sick, such as having stomach ache or diarrhoea, from you not washing your hands?

- ☐ 1. Not likely
- ☐ 2. You're not sure
- ☐ 3. Likely

If Not likely:

Can you tell me the reason why it is not likely?

_____

_____

Perceived severity

How serious do you think it is if you or your child gets sick from you not washing your hands?

OR

How serious do you think diarrhoea is for your health?

OR

How serious do you think is diarrhoea for a baby's health?

- ☐ 1.Not really serious
- ☐ 2. Neutral/unsure
- ☐ 3. Serious

If Not Serious:

Can you tell me the reason why it is not serious?

_____

_____

Attitudes towards an ideal or desired nutrition-related practice

1 Washing one's hands

Perceived benefits

How good do you think it is to wash your hands before preparing food?

OR

How good do you think it is to wash your hands before feeding a child/eating?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to wash your hands before preparing food?

OR

How difficult is it for you to wash your hands before feeding a child/eating?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

1 Self-confidence

How confident do you feel in washing your hands properly?

- ☐ 1. Not confident
- ☐ 2. Ok/so-so
- ☐ 3. Confident

If Not confident:

Can you tell me the reasons why you do not feel confident?

_____

_____

MODULE 11: Water and sanitation

Explain to the participant:

I am going to ask you some questions about water and sanitation. Please let me know if you need me to clarify any of my questions. Feel free to ask any question you may have.

Practices

1 Question P.1: Main source of water for drinking, cooking and hand washing[8]

What is the main source of water used by your household for drinking, cooking and hand washing?

_____

_____

- ☐ *Piped water*
  - ☐ *Piped into dwelling*
  - ☐ *Piped into yard or plot*
  - ☐ *Public tap/standpipe*
- ☐ *Tube well/borehole*
- ☐ *Dug well*
  - ☐ *Protected well*
  - ☐ *Unprotected well*
- ☐ *Water from spring*
  - ☐ *Protected spring*
  - ☐ *Unprotected spring*
- ☐ *Rainwater collection*
- ☐ *Tanker-truck*
- ☐ *Cart with small tank/drum*
- ☐ *Surface water (river, stream, dam, lake, pond, canal, irrigation channel)*
- ☐ *Bottled water*
- ☐ *Other (specify)* _____
- ☐ *Don't know*

[8] Question adapted from MICS3-Household questionnaire (UNICEF, 2005), available at: www.childinfo.org/mics3_background.html

2 Question P.2: Collection of water

A. Do you collect water for domestic use?

- ☐ Yes.....Go to *question* P.2B.
- ☐ No..... Go to *question* P.3.

B. What item do you use to collect water?

_____

_____

C. *To know if the item is clean probe:* Did you treat this item in any way to make it clean?

- ☐ Yes
- ☐ No
- ☐ Don't know

If Yes:

How?

_____

_____

- ☐ *Use of water and soap (clean container)*
- ☐ *Other*
- ☐ *Don't know/no answer*

2 Question P.3: Storage of water

Could you describe how you store water?

_____

_____

_____

_____

- ☐ *Clean container or jar*
- ☐ *Covered container or jar*
- ☐ *Clean and covered container or jar*
- ☐ *Other*
- ☐ *Don't know/no answer*

1 Question P.4: Treatment of water to make it safe to drink[8]

Do you treat your water in any way to make it safe to drink?

- ☐ Yes
- ☐ No
- ☐ Don't know/no answer

If Yes:

What do you usually do to the water to make it safer to drink?

- ☐ *Boil it*
- ☐ *Add bleach/chlorine*
- ☐ *Strain it through a cloth*
- ☐ *Use a water filter (ceramic, sand, composite, etc.)*
- ☐ *Use solar disinfection*
- ☐ *Let it stand and settle*
- ☐ *Other*
- ☐ *Don't know/no answer*

Anything else? (*Record all items mentioned*)

_____

_____

Knowledge

1 Question K.1: Treating unsafe water

If you know that the water you are going to use for cooking or drinking is not safe or does not come from a safe source, what should you do?

_____

_____

- ☐ *Boil it*

  OR
- ☐ *Add bleach/chlorine*

  OR
- ☐ *Strain it through a cloth*

  OR
- ☐ *Use a water filter (ceramic, sand, composite, etc.)*

  OR
- ☐ *Use solar disinfection*

  OR
- ☐ *Let it stand and settle*

  OR
- ☐ *Discard it and get water from a safe source*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Attitudes
Attitudes towards a health or nutrition-related problem

2 Diarrhoea from using unsafe water

Perceived susceptibility

How likely do you think you are to get diarrhoea from using unsafe water?

OR

How likely do you think your child is to get diarrhoea from using unsafe water?

- ☐ 1. Not likely
- ☐ 2. You're not sure
- ☐ 3. Likely

If Not likely:

Can you tell me the reason why it is not likely?

_____

_____

Perceived severity

How serious do you think it is to get sick from using unsafe water?

- ☐ 1. Not really serious
- ☐ 2. Neutral/serious
- ☐ 3. Serious

If Not serious:

Can you tell me the reason why it is not serious?

_____

_____

Attitudes towards an ideal or desired nutrition-related practice

1 Boiling water before drinking or using it

Perceived benefits

How good do you think it is to boil water before drinking or using it?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to boil water before drinking or using it?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

Self-confidence

How confident do you feel in boiling water before drinking or using it?

- ☐ 1. Not confident
- ☐ 2. Ok/so-so
- ☐ 3. Confident

If Not confident:

Can you tell me the reasons why you do not feel confident?

_____

_____

MODULE 12: Food-based dietary guidelines

Explain to the participant:

I am going to ask you some questions about the national food-based dietary guidelines **[provide name of the local FBDG]**. Please let me know if you need me to clarify any of my questions. Feel free to ask any question you may have.

Knowledge

1 Question K.1: Knowledge of the local food-based dietary guidelines

K.1A: Have you ever seen this image? (*Show the image of the local FBDG.)*

- ☐ Yes ..... Go *to question K.1B*.
- ☐ No..... Go *to question K.2*.
- ☐ Don't know

K.1B: Could you tell me what it is?

_____

_____

- ☐ ***[insert the name of the local FBDG]***
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

1

Question K.2: Objective of food-based dietary guidelines

What is the **[name of the local FBDG]** good for?

If the respondent experiences difficulty to answer, probe:
Why do you think the **[name of the local FBDG]** exist?

_____

_____

- ☐ *To help people to eat more healthily/have a healthy diet*

  OR

- ☐ *To encourage people to eat foods from different food groups/have a diversified diet*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis
- ☐ Knows
- ☐ Does not know

1

Question K.3: Different food groups

A. How many food groups are included in the **[name of the local FBDG]**?

_____

_____

- ☐ ***[insert the number of food groups]***
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis
- ☐ Knows
- ☐ Does not know

B. Can you name them?

_____

_____

☐ ***[list the different food groups into response options]***

☐ *Other*

☐ *Don't know*

Preliminary analysis

☐ Knows

☐ Does not know

Number of correct responses _____

1

Question K.4: Examples of foods from each food group

Can you list three examples of foods in each food group?

Probe if necessary:

List three foods included in each food group.

[List the food groups of the local FBDG into pre-categorized response options.]

[food group]

☐ _____

☐ _____

☐ _____

Preliminary analysis

☐ Knows

☐ Does not know

[food group]

☐ _____

☐ _____

☐ _____

Preliminary analysis

☐ Knows

☐ Does not know

☐ *Other* _____

☐ *Don't know*

1 Question K.5: Dietary guidelines

In order to stay healthy, the **[name of the local FBDG]** provide general recommendations. Please name at least three of them.

_____

_____

_____

_____

[List specific dietary guidelines appearing in text form in the local FBDG into pre-categorized options.]

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

Attitudes

1 Perceived importance of following the FBDG

How important is it to follow the **[name of local FBDG]**?

OR

How important is it to **[insert a recommendation from the FBDG]**?

- ☐ 1. Not important
- ☐ 2. You're not sure
- ☐ 3. Important

If Not important:

Can you tell me the reasons why it is not important?

_____

_____

2 Self-confidence

How confident do you feel in following the **[name of local FBDG]**?

OR

How confident do you feel in **[insert a recommendation from the FBDG]**?

- ☐ 1. Not confident
- ☐ 2. Ok/so-so
- ☐ 3. Confident

If Not confident:

Can you tell me the reasons why you do not feel confident?

_____

_____

Practices

1 Question P.1: Intake and frequency of consuming foods from a specific food group

Yesterday, during the day and night, did you consume any of the following foods (*read the list of different food groups of the FBDG*) such as (*provide example*)?

[List the food groups of the local FBDG into pre-categorized response options.]

☐ **[food group]** ☐ Yes ☐ No

If Yes:

Which ones?

_____

_____

_____

_____

[food group] ☐ Yes ☐ No

If Yes:

Which ones?

_____

_____

_____

_____

etc.

MODULE 13: Overweight and obesity

Note: *Overweight and obesity are sensitive topics that should be handled with care.*

Explain to the participant:

I am going to ask you some questions about overweight and obesity. We are asking these questions to various people in the community who were selected independently of their physical status or weight. Please let me know if you need me to clarify any of my questions. Feel free to ask any question you may have.

Practices

1 Question P.1: Assessment of dietary practices leading to overweight and obesity

Dietary practices leading to overweight and obesity are culture- and person-specific. For that reason, model questions may not be suitable to assess these practices in any context. Questions measuring dietary practices leading to overweight and obesity need to be developed based on the practices that are expected to be changed as a result of the nutrition intervention, such as the frequency of intake of specific foods or observable behaviours.

Measurement of frequency of intake of a specific food item

For instance, if the aim of the intervention is to reduce the intake of soft drinks, then the frequency of intake of soft drinks among the survey population should be measured. Depending on the project and the context, the frequency of consumption of sugary foods (soft drinks and other locally available sugary foods) and fatty foods (fast foods and other locally available fatty foods) should be assessed.

Yesterday, during the day and night, did you consume **[food item]**?

[List the food items of interest into pre-categorized options.]

[food group] ☐ Yes ☐ No

If Yes:

How many times each:

day? _____

week? _____

month? _____

Measurement of specific observable behaviours

Dietary practices leading to overweight and obesity can also be assessed in terms of specific observable behaviours, such as buying or cooking practices, removing ingredients from a recipe, etc. Questions specific to the educational intervention should be created (see "Step 5: Prepare additional questions (optional step)," page 37 for precautions to take while preparing additional questions).

For example, if the aim of the intervention is to promote oil-free cooking methods, such as boiling and cooking in the oven, the following question could be added:

How do you usually cook chicken for your family?

_____

_____

- ☐ *Fry it*
- ☐ *Cook it in an oven*
- ☐ *Boil it*
- ☐ *Other*
- ☐ *Don't know/no answer*

1 Question P.2: Assessment of physical-activity practices

Do you do any physical activity, that is any activity where your body moves over long time periods? For example, walking, running, harvesting, etc.? (*Give other examples if necessary*.)

- ☐ Yes
- ☐ No
- ☐ Don't know/no answer

If Yes:

Which one?

[Add any other type of physical activity that is performed in the region. For example, in rural areas physical activities could include collecting and transporting water or firewood, pasture/shepherd livestock, etc.]

☐ Walking

If Yes: How many minutes each:

day? _____

week?_____

month?_____

☐ Running

If Yes: How many minutes each:

day? _____

week?_____

month?_____

☐ Harvesting

If Yes: How many minutes each:

day? _____

week?_____

month?_____

☐ Any sport (*specify*) _____

If Yes: How many minutes each:

day? _____

week?_____

month?_____

☐ Other (*specify*) _____

If Yes: How many minutes each:

day? _____

week?_____

month?_____

☐ Don't know/no answer

Knowledge[9]

1 Question K.1: Risks of overweight and obesity

What are the health problems that can occur when a person is overweight or obese?

_____

_____

- ☐ *Increased risk of chronic conditions (such as heart/cardiovascular disease, high blood pressure and diabetes, stroke, certain types of cancer, respiratory difficulties, chronic musculoskeletal problems, skin problems and infertility)*
- ☐ *Reduced quality of life*
- ☐ *Premature death*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

☐ Knows

☐ Does not know

Number of correct responses _____

[9] Answers to the knowledge questions were taken from the WHO Fact Sheet N°311, *Obesity and Overweight,* which appeared in May 2012 and is available at: www.who.int/mediacentre/factsheets/fs311/en/

1

Question K.2: Causes of overweight and obesity

Can you tell me the reasons why people are overweight or obese?

_____

_____

- ☐ *Increased/excessive intake of energy-dense foods that are high in fat and/or sugar*
- ☐ *Lack of or decreased physical activity*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

1

Question K.3: Prevention of overweight and obesity

How can people prevent overweight and obesity?

_____

_____

- ☐ *Reduce energy intake (less high-energy foods and drinks)/reduce the intake of fatty and sugary foods*
- ☐ *Eat vegetables and fruits more often*
- ☐ *Eat legumes/whole-grain products more often*
- ☐ *Increase physical activity level/engage in regular physical activity*
- ☐ *Other*
- ☐ *Don't know*

Preliminary analysis

- ☐ Knows
- ☐ Does not know

Number of correct responses _____

Attitudes
Attitudes towards a health or nutrition-related problem

1 Overweight and obesity

Perceived susceptibility

How likely do you think you are to become overweight or obese?

- ☐ 1. Not likely
- ☐ 2. You're not sure
- ☐ 3. Likely

If Not likely:

Can you tell me the reason why it is not likely?

_____

_____

Perceived severity

How serious do you think it is to be overweight or obese?

- ☐ 1. Not really serious
- ☐ 2. Neutral/serious
- ☐ 3. Serious

If Not reallly serious:

Can you tell me the reason why it is not really serious?

_____

_____

Attitudes towards an ideal or desired nutrition-related practice

1 Eating less (e.g. have smaller portions, eat slowly and follow appetite/ satiety signals, eat less fatty and sugary foods, etc.)

Perceived benefits

How good do you think it is to eat less, for example by eating smaller portions of food?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to eat less?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

1 Doing some (more) physical activity (e.g. walk for 30 minutes every day, play a sport, dance for 60 minutes each week, etc.)

Perceived benefits

How good do you think it is to do some physical activity, such as walking for 30 minutes a day, running or doing a sport?

- ☐ 1. Not good
- ☐ 2. You're not sure
- ☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

_____

_____

Perceived barriers

How difficult is it for you to do some physical activity/exercise?

- ☐ 1. Not difficult
- ☐ 2. So-so
- ☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

_____

_____

Self-confidence

How confident do you feel in doing some physical activity/exercise?

- ☐ 1. Not confident
- ☐ 2. Ok/so-so
- ☐ 3. Confident

If Not confident:

Can you tell me the reasons why you do not feel confident?

_____

_____

Appendix 7:

Examples of possible nutrition strategies for low KAP indicators[10]

Low indicators for ...	Possible nutrition education strategies	Examples
Knowledge	• Build on the current knowledge and increase comprehension of participants through discussions, lectures, slides, presentations	**Educational objective:** Increase knowledge about iron-deficiency anaemia **Content and activities of educational sessions:** • Present signs of iron-deficiency anaemia, causes, health consequences, local statistics of prevalence and ways to prevent and treat it • Conduct a group activity to identify iron-rich food sources
Attitudes		
Perceived susceptibility	• Provide facilitated discussions of risk factors or threats leading to the problem	**Educational objective:** Increase mothers' perception of young children's vulnerability to undernutrition **Content and activities of educational sessions:** • Present and discuss with the group factors leading to undernutrition: poor caring and feeding practices causing inadequate dietary intake and disease (plane and watery porridges, infrequent meals, poor hygiene practices, etc.)
Perceived severity	• Present health consequences of the problem through films, images, statistics and personal stories	**Educational objective:** Increase awareness of the health risks of obesity **Content and activities of educational sessions:** • Present health, social and economic consequences of obesity and related chronic diseases

[10] Adapted from 15.

Attitudes		
Perceived benefits	• Present scientific arguments in favour of the practice • Generate group discussion to evaluate pros and cons • Provide information about personal health benefits and benefits for the family or community	**Educational objective:** Increase the perception of benefits of eating a diversity of foods **Content and activities of educational sessions:** • Present and discuss reasons for eating a diversity of foods and highlight key nutrients and health benefits
Perceived barriers	• Hold sessions for brainstorming and group discussion of barriers and ways to overcome them	**Educational objective:** Decrease the perceived barriers to preparing a thick porridge **Content and activities of educational sessions:** • Guide a group discussion on the barriers to preparing a thick porridge • Encourage participants to identify ways to overcome the barriers • Hold a participatory cooking demonstration, guiding preparations of a thick porridge
Self-confidence	• Guide hands-on food-related activities: participatory cooking demonstrations, recipe preparation • Hold sessions for brainstorming and group discussion of the perception of barriers and ways to overcome them	**Educational objective:** Increase people's skill in cooking vitamin-A-rich vegetables in order to increase confidence in preparing and consuming them **Content and activities of educational sessions:** • Hold a participatory cooking demonstration: guided practice of cutting and boiling vegetables and incorporating them in a recipe
Perceived importance of following nutrition recommendations	• Hold sessions for brainstorming and group discussion of the importance of following a specific nutrition recommendation • Presentation and discussion of scientific arguments in favour of he recommended practice	**Educational objective:** Increase the perceived importance of the local food-based dietary guidelines (FBDG) **Content and activities of educational sessions:** • Encourage participants to present the FBDG and make specific recommendations • Have a brainstorming session and generate a group discussion: "Which recommendations seem important to you? Which ones do not? Why?" • Present arguments in favour of following specific recommendations

Attitudes		
Food preferences	• Provide information about personal health benefits and benefits to the family or community of eating/ feeding a food or including it in meal preparation • Facilitate participatory cooking demonstrations and food-tasting activities in order to increase acceptability of a specific food	**Educational objective:** Increase acceptability of insects as a food to include in the preparation of children's porridge **Content and activities of educational sessions:** • Present the health benefits for children of consuming insects (i.e. development and growth). • Guide cooking demonstrations of a porridge including insects and facilitate food tasting
Food taboos	• Provide facilitated discussions on specific food taboos • Present evidence for optimal dietary practices through films, images, statistics and personal stories	**Educational objective:** Modify the food taboo that states that consuming meat and eggs makes children steal **Content and activities of educational sessions:** • Facilitate a group discussion about a food taboo: "Who agrees? Who disagrees? Why?" • Present arguments in favour of feeding children meat and eggs, including health benefits
Practices	• Address knowledge and attitudes to increase participants' ability to modify dietary or feeding practices and/or adopt new ones • Guide hands-on food-related activities: participatory cooking demonstrations, recipe preparation	**Educational objective:** Increase participants' skills in washing hands **Content and activities of educational sessions:** • Present the optimal way of washing hands • Hold a participatory session of handwashing: Encourage participants to practice the good way of washing hands: clean water, soap, rub hands ...

Important

- ✓ *Messages intended to persuade people to adopt health and nutrition behaviours (i.e. passive provision of information) are not enough.*
- ✓ *To make the content of the educational strategy memorable it is recommended to use visual and audio supports as much as possible: images, slides, films, personal histories, dialogues, etc.*
- ✓ *Employ participatory methods such as group discussions, role plays, games or other group activities as much as possible. Also use other culturally appropriate methods, such as story-telling, songs and humour.*

Appendix 8:

Qualitative methods – basic information on data collection and analysis

Qualitative methods are research methods used to understand and give meaning to a phenomenon, explore a problem or answer a question through people's narratives. As such, qualitative methods go beyond numerical data generated by quantitative methods (such as surveys) and provide a deeper understanding.

Examples:

- Quantitative data: Forty percent of mothers do not feel confident in preparing an enriched porridge.
- Qualitative data: Mother said: "I feel that I am not able to prepare an enriched porridge because I have never done it before."

The most common qualitative methods are individual interviews and focus-group discussions.

Interviews

What is an interview?

An interview consists of asking an individual questions about a particular topic, listening attentively to their responses and exploring their views and experiences on specific matters to provide deep understanding (55).

Preparation and planning

- Prepare for the interview by selecting questions from among those included in the KAP modules (if these address the priority issues you wish to inquire about) or develop new questions based on what you need to explore.
- Invite respondents individually to participate in an interview.
- Determine and schedule a meeting time and place convenient for the respondent. Reconfirm before the interview

Key instructions for interviewers

- Obtain the respondent's informed consent; continue only if the respondent agrees to participate. Complete the sociodemographic questionnaire (see Appendixes 3, 4 and 5).
- Ask interview questions in a friendly manner to build trust between you and the respondent; this will encourage the respondent to give useful and truthful answers.
- Allow the respondent to express him- or herself. Wait a moment after having asked a question to give him/her time to respond to the question.

- Record all information obtained in the interview using a voice recorder or by taking detailed notes.
- Make notes about relevant issues that were raised during the interview, such as non-verbal or emotional reactions of the respondent or the environment in which the interview took place. Note any influence you may have had on the interview.
- Thank the participant at the end of the interview.
- Review all your notes at the end of the interview while the information is fresh in your mind. Fill in any gaps in the information recorded.

Focus-group discussions

What is a focus-group discussion?

A focus group is a group interview where participants are encouraged to talk to one another, ask questions, comment on others' experiences and points of view and exchanging anecdotes (55). The focus group is guided by an interviewer who asks questions previously developed.

Preparation and planning

- Prepare for the focus-group discussion by selecting questions from among those included in the KAP modules (if these address the priority issues you wish to inquire about) or develop new questions based on what you need to explore.
- Invite respondents to participate in a focus-group discussion. The idea is to bring together a small, homogeneous group of people of similar age, socio-economic background and experiences. There should be six to eight participants in each focus group.
- Determine and schedule a meeting time convenient for all participants.
- Find a place to hold the focus-group discussion.
- Reconfirm attendance of participants before the sessions.
- In addition to the interviewer, you will need two note takers for each focus group. You may need an additional person to take care of children during the focus-group discussion.

Key instructions for interviewers

- Greet the respondents and thank them for attending the meeting. It is important to greet and welcome the participants to make them feel comfortable; this will encourage them to participate with enthusiasm and trust.
- Obtain the participants' informed consent; continue only if the respondents agree to participate. Complete a sociodemographic questionnaire for each respondent. The interviewer and both note takers can complete the forms (see Appendixes 3, 4 and 5).
- As an ice-breaking activity, encourage participants to introduce themselves one at a time.
- Encourage respondents to share their views and experiences and to comment on each other's responses.

- Ask questions in a friendly manner to build trust between you and the participants; this will encourage them to give useful and truthful answers.
- Give respondents time to express themselves. Wait a moment after asking a question to give them time to respond.
- After one respondent finishes speaking, encourage other respondents to participate, for example by asking "What do the others have to say? Are your experiences similar or different?"
- Record all information obtained in the interview, using a voice recorder or by taking detailed notes.
- Make notes about relevant issues that were raised during the focus group discussion, such as non-verbal or emotional reactions of the respondent or the environment in which the interview took place. Note any influence you may have had on the group discussion. Also note how group interactions may have influenced the participation of individual participants.
- Thank the participants at the end of the interview.
- Review all your notes at the end of the focus group discussion while information is fresh in your mind. Fill in any gaps in the information recorded.

Analysis of qualitative data

Summarize responses by question

Each question assesses a specific aspect of the respondents' KAP or external factors affecting practices. The first step of analysis consists in summarizing the responses of all participants for each question.

Count the frequency of the same types of responses

Responses to a given question will differ from one respondent to another. You will therefore have to classify or categorize the answers received and then count how many respondents gave each type of response. This will give some perspective on how common particular kinds of views and experiences were.

Provide evidence from data collected

One (maximum two) quotes of respondents' narratives should accompany each summary so as to illustrate the findings. For example: Mother: "At home, my mother helps me feed my child because I have to work and I don't have time to prepare food and feed my baby."

Having physical and economic access to food on their own are not sufficient to ensure that people are food secure and well nourished. It is essential that people *understand* what constitutes a healthy diet; in particular, what nutrition-related health issues affect their communities and how to address these through food-based approaches, and *know* how to make the best use of their resources. They should also *have positive attitudes* towards nutrition, diet, foods and closely related hygiene and health issues to be able to *perform optimal dietary and feeding practices* that ensure their nutritional wellbeing and that of their families.

The *Guidelines for assessing nutrition-related knowledge, attitudes and practices* is a reference guide and practical tool for conducting high-quality surveys of nutrition- and health-related knowledge, attitudes and practices (KAP) at the community level.

The manual is written for people in charge of planning, implementing and evaluating food security and nutrition projects; these include project managers, nutritionists, health workers, planning and evaluation specialists and many others.

The manual includes definitions and key indicators for nutrition- and health-related knowledge, attitudes and practices. It provides useful guidance for planning and conducting a KAP survey, and for analysing and reporting the survey results.

The manual also provides model questionnaires (modules). These can be used to facilitate the design of KAP survey questionnaires. Using them contributes to the standardization of KAP studies and the comparability of their results. The modules comprise predefined questions that capture information on critical knowledge, attitudes and practices related to the 13 most common nutrition topics:

- Module 1: Feeding infants younger than 6 months
- Module 2: Feeding young children (6–23 months)
- Module 3: Diet of school-aged children
- Module 4: Nutrition during pregnancy and lactation
- Module 5: Undernutrition
- Module 6: Iron-deficiency anaemia
- Module 7: Vitamin A deficiency
- Module 8: Iodine deficiency
- Module 9: Food safety
- Module 10: Personal hygiene
- Module 11: Water and sanitation
- Module 12: Food-based dietary guidelines
- Module 13: Overweight and obesity

ISBN 978-92-5-108097-9

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I3545E/1/12.13