

Assessment Questions and Questionnaires

Questions play an important and specific role in a WIC nutrition assessment. An effective WIC staff uses questions to obtain information that clarifies the participant’s needs in order to personalize services. The type of question will be determined by how it will be used, who will be answering, and what information is needed. The following identifies the steps involved in developing questions and questionnaires for nutrition assessment.

(Note: There is very little information available specifically on development of questions or questionnaires for nutrition assessment.^{1,2} The following has been adapted from survey development literature.)

1. Preliminary Decisions^{3,4}

State agencies must make preliminary decisions about the assessment process before beginning to design questions or assessment instruments.

<p>What is the goal? Will the question be used for:</p> <ul style="list-style-type: none"> • Risk determination? • Surveillance? • Springboard to conversation? • Knowledge or attitude determination? • Motivation determination? • Aid to critical thinking? 	<p>Who will complete the questionnaire?</p> <ul style="list-style-type: none"> • Applicant • Clerical staff • Professional staff • Mixed 	<p>What format will be used?</p> <ul style="list-style-type: none"> • Paper • Computer screen • Oral • Mixed
--	---	---

1. Lyne PA, Prowse MA. Methodological issues in the development and use of instruments to assess patient nutritional status or the level of risk of nutritional compromise. *Journal of Advanced Nursing*, 1999, 30 (4), 835-842.

2. Caulfield, LE Methodological Challenges in Performing Targeting: Assessing Dietary Risk for WIC Participation and Education *J. Nutr.* 135:879-881, 2005.

3. Salant P, Dillman D. *How To Conduct Your Own Survey*. New York: John Wiley and Sons; 1994.

4. Taylor-Powell E. *Questionnaire Design: Asking Questions With A Purpose*. University of Wisconsin-Cooperative Extension. May 1998. <http://cecommerce.uwex.edu>

5. General Accounting Office. *Using Structured Interviewing Techniques*. http://www.gao.gov/policy/10_1_5.pdf

Written questionnaires are generally used for risk determination or surveillance and may also help to determine attitude, knowledge, and motivation. Oral questions can be used as “springboards” to conversation and can segue into in-depth conversations. Oral questions can also be used by WIC staff as a tool to enhance the assessment through critical thinking by probing for additional information.

Most WIC nutrition assessments include written questionnaires to collect basic information, oral “springboard” questions to encourage conversation, and oral questions to promote critical thinking.

2. Develop Questions and Responses for Use in a Written Questionnaire^{3,4,5}

The careful crafting of questions is crucial in the development of a questionnaire that will produce meaningful and relevant information that can be used to assess the applicant’s needs and

Appendix B

nutrition status. Poorly designed questions lead to misinformation and ambiguous results. Attention to the following points is the first step to developing a quality nutrition assessment instrument.

6. Narins P. Guidelines For Creating Better Questions [monograph on the Internet]. SPSS Inc. 1999.
<http://www.ryerson.ca/>

- **Choose appropriate questions.**^{4,6}

Type of Question		Response	Example	Advantage	Disadvantage
Open-ended		Applicants answer in their own words.	<p>“How do you mix your baby’s formula?”</p> <p>“What have you heard about breastfeeding?”</p>	Good to determine attitudes, opinions, frustrations, concerns(allows more participant involvement). Applicant can’t “fill in” the survey with all the same answers.	Not always reproducible or consistent. Can be time consuming for applicant. Requires time to analyze the results. Some applicants may be resistant to providing information. Difficult to compare the meanings of responses.
Closed - ended	Closed-ended with Dichotomous Answers	Applicant chooses from predetermined answers.	<p>“Does your baby use a cup?”</p> <p>“Is your child up-to-date on his/her immunization?”</p>	Provides specific answers. Good for WIC certification, surveillance, and computer analysis. Simple, takes less time. Good response rate.	Predetermined answers may not fit the applicant’s situation.
	Closed-ended with Ordered Choices.	The applicant is asked to think about where they fit within a range.	Breastfeeding is good. Strongly agree Agree Don’t know Disagree Strongly disagree	Tend to be quite specific, easy to code/analyze.	
	Close Ended With Un-ordered Choices	The applicant evaluates each choice and selects the one that best reflects his/her situation.	“Choose the formula your baby drinks from the list below.”	Good when knowledge of the subject allows useful answer choices.	Elicits only a specific piece of information. Too few categories can force applicant to choose imprecisely.
Partially Closed-Ended		Answer choices are provided with an option to add responses.	What is your first language? EnglishSpanish Vietnamese Other_____	Response not predefined. Can generate new information.	

Appendix B

- **Focus the question according to its goal. Avoid problematic questions.**^{7,8}

Question	Problem	Example	Improvement
Double-Barreled	More than one subject is covered but only one answer is expected.	Do you eat fresh fruits and vegetables daily?	In a typical day do you eat: fresh fruits _____ vegetables _____
Biased	Wording leads the applicant to a specific answer.	Given the poor quality and high fat and sodium content of junk food, how often do you include them in your diet?	How often do you drink sodas?
Loaded	Present only one side of an issue.	Have you used Echinacea during your pregnancy?	Some herbal products are commonly used during pregnancy. Do you use any herbal supplements?
Time and Distance Related	Applicants have difficulty with percentages.	What percent of your day is spent on physical activity?	How much time do you spend daily on the following activities?

- **Focus the responses.**^{7,8}

Response	Problem	Example	Improvement
Neutral Bias	Most people will choose neutral if given a choice.	If given a scale based on 1-5 most people will choose 3.	Use a scale based on even numbers.
Overlap	Responses are not mutually exclusive.	How many servings of vegetables do you eat in a typical day? a. 1 or less b. 1-3 c. 3 or more	How many servings of vegetables do you eat in a typical day? a. 1 or less b. 2-4 c. 5 or more

7. Survey Design Considerations.
<http://www.websurveyor.com>

8. Choi BCK, Pak AWP. A Catalog of Biases in Questionnaires. *Prev Chronic Dis* 2005
http://www.cdc.gov/pcd/issues/2005/jan/04_0050.htm

Appendix B

• **Choose words carefully.**^{9, 10, 11}

Choose words carefully. Select a reading level appropriate to the literacy level of the WIC participants when developing the questions. Avoid ambiguity, technical jargon, confusing or vague words and those with double meanings. Words like “occasionally,” “regularly,” and “often” mean different things to different people. Be as specific as possible.

Many words that are used in WIC on a daily basis are not familiar to the general population. Consider using the simplest possible words that will convey the concept. Be aware of words that are used differently in different cultures and languages. This is especially important when translating into other languages. For instance, the words “**ahora**” and “**ahorita**” have different meanings for some Spanish-speaking individuals. In Mexico, “**ahora**” means “a little bit later.” In other places like Puerto Rico, “**ahora**” means immediately or right now. On the other hand, “**ahorita**” in Puerto Rico means a little bit later, whereas in Mexico “**ahorita**” means right now.

9. Words to Watch – Fact Sheet and How to Conduct Effective online surveys. Partnership for Clear Health Communications. <http://www.AskMe3.org>

10. Gowers EA. The Complete Plain Words. London: Penguin (Pelican) Books; 1954.

11. Day RA. How To Write and Publish a Scientific Paper. 5th Ed. Phoenix (AZ): Oryx Press; 1998.

Some examples of problem words and possible better phrasing include:

Problem word	Substitute
Intake	What you eat or drink
Nausea	Feeling sick to your stomach
Vomiting	Throwing up
Poultry	Chicken, turkey etc.
Food package	Food on your voucher
Excessive	Too much
Hemoglobin	Finger stick
WIC Referral	Information from your doctor
Recertify	See if you are still eligible
Postpartum	After the baby is born
Assist	Help
Consider	Think

Problem word	Substitute
Elucidate	Explain
Employ	Use
Initiate	Begin / Start
Major	Important / Main
Perform	Do
Quantify	Measure
Require	Want / Need
Reside	Live
State	Say
Sufficient	Enough
Terminate	End
Utilize	Use

3. Format the Questionnaire.^{3, 6, 7}

The most meaningful results come when the goal and audience are narrowly defined. For instance, if the primary goal of a questionnaire is to determine risk, then avoid the “nice to know” but irrelevant questions. The longer and more complicated the questionnaire, the less reliable it will be. The design of assessment questions and instruments can be tedious but when done appropriately, miscommunication and poorly targeted nutrition services will be minimized.

Questionnaires should begin with a clear and brief statement about the purpose. The introduction should be easy-to-read and entice the applicant to give complete and honest responses. Formats differ based on whether it will be read and answered by the applicant or whether trained WIC staff read it to the applicant and then record the answers.

a. To design a written **questionnaire that will be completed by the participant**³:

- Avoid lines separating questions.
- Use a vertical flow for easy reading. (Place answer choices under the question vertically, not side by side).
- Put questions in dark/boldface and answers in lighter print type.
- Give brief instructions like “skip,” “go to,” “check” exactly where the information will be used. It is better to repeat instructions too often than not enough.
- Make sure at least one answer choice applies to each respondent.
- Use “skip” arrows for questions that do not apply to everyone. Avoid complicated and frequent skips.
- Use multiple-column format when 2 or more questions can be combined.
- Use ZERO when appropriate so that it is distinguishable and will not be confused with a blank or NO RESPONSE.
- Avoid splitting a question over 2 pages.
- Leave ample space for answers in open-ended questions. Do not provide lines for answers. They may inhibit complete comments.
- Be consistent throughout!

Appendix B

The questionnaire should be appealing and stimulate interest. Design the first questions carefully as they receive the most attention. The first 2-3 questions should be:

- close-ended
- simple
- not embarrassing
- interesting

Review subsequent questions to be sure they are:

- useful and purposeful
- reasonable
- respectful of the applicant's privacy

b. To design a **questionnaire that will be read by trained WIC staff and then given orally** make the design user-friendly.³

Consider the following:

- Use different print styles to distinguish among questions that should be 1) read to all participants, 2) read only if relevant, or 3) not read at all.
- Place answer choices to the right side. (Note: This is different from the written, participant answered questionnaire.)
- Include responses that will not be read out loud but may be needed. Example: NO OPINION, DOES NOT APPLY, REFUSED.
- Use consistent, clear format for skip patterns.
- Avoid having to turn pages in the middle of a question.

4. Validate the Questions and Questionnaire^{1, 3, 4}

The most important step in finalizing any questionnaire is to test it on a group of applicants and agency staff who reflect the cultural diversity of the population. In addition to observing patterns of errors, a focus group can be utilized to determine if the:

- Questions produce the necessary information.
- Words are appropriate for the reading level of the participants.
- Questions are clear and unambiguous.
- Questionnaire presents a positive impression that encourages a response.
- Skip patterns are followed correctly.
- Questions are biased.

Appendix B

Jain et al⁽¹²⁾ recently used similar methods to validate a WIC Feeding Questionnaire and found widespread misunderstanding of many feeding and parenting questions by WIC applicants. Terms like “poor appetite,” “making a child eat” and “punishing to eat more” were interpreted very differently than the designers intended. This study reinforces the importance of thoroughly validating questions and terms before use.

5. Format Examples

The following is an example with formatting explanations. Not all questions are provided, this is meant to provide an overview, it is not a ready-to-use sample questionnaire.

1-3. [*Questions should be close-ended, simple, interesting, not personal or embarrassing*].

4. Check on the list below all the problems your baby had in the last month.

- Constipation [*Vertical flow with bolded question*]
- Vomiting
- Diarrhea
- Colic
- Spitting up

5. Check all of the ways your baby is fed.

- Breast → **if you check this box, go to question 6**
- Bottle → **if you check this box, go to number 7**
- Cup
- Spoon [*Brief instructions where needed*]

6. Breastfed babies [*Questions for breastfed infants should follow vertically*]

7. Bottle-fed babies

How many times each week does your baby take a bottle to bed?

[*Use a zero to distinguish from blank or no response*]

- 0 times
- 1-3 times
- 4-7 times
- 8-10 times
- ALWAYS

12. Jain A, Sherman SN, Chamberlin LA, Whitaker RC. Mothers Misunderstand Questions On A Feeding Questionnaire. *Appetite* 2004; 42:249-254.

8. What medicines and supplements do you give your baby?

(Check the boxes in each column that apply)

[Multiple column format combining two questions]

	Prescribed By Your Doctor	Not Prescribed By Your Doctor
Stomach/Digestion Medications	<input type="checkbox"/>	<input type="checkbox"/>
Vitamin/Minerals	<input type="checkbox"/>	<input type="checkbox"/>
Herbal Products	<input type="checkbox"/>	<input type="checkbox"/>
Asthma Medications	<input type="checkbox"/>	<input type="checkbox"/>
Flu/Cold Medications	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/> _____	<input type="checkbox"/> _____

[Avoid having to turn the page in the middle of a question]

DESIGN PROBLEMS

The following is a portion of a sample questionnaire with design problems (not all questions are illustrated in this example). The design problems are listed below.

Note: Answer question 7 only if you answered “yes” to 5d

1. Do you have constipation?	a. yes b. no
2. Check all of the problems your baby had in the last month.	a. Constipation b. Vomiting c. Diarrhea d. Colic e. Spitting up
3. Check each way your baby is fed Note: If you checked “b” go to number 9. If you checked “a” go to number 8 after you finish 6 and 7.	a. Breast b. Bottle c. Syringe-action nipple feeder d. Cup e. Spoon
4. How do you feel your baby is developing?	_____ _____

Problems With This Design:

- *Potentially embarrassing opening question*
- *Not a vertical flow*
- *Lines separate questions*
- *Instructions neither clear nor placed where needed*
- *Not enough response space for open-ended questions.*
- *Lines used in response space for open-ended question.*

Note: Computer based questionnaires^{9, 13}

Web-based WIC nutrition assessment is still in its infancy. As expertise is developed, the information will be shared. This section, as it relates to question development, will be valid in any medium. The design of web-based screens will, however, vary. The web will allow drop-down responses that simplify the format and enhance visual attractiveness. Answers to questions asked initially can be retained, minimizing the number of responses needed from the applicant. Skip patterns and multi-language needs are simplified.

13. Guidelines on the Application of New Technology to Population Data Collection and Capture 3. Computer Assisted Personal Interviewing (CAPI). http://www.unescap.org/stat/pop-it/pop-guide/capture_ch03.pdf

6. Oral Questions³

- a. **“Springboard” questions** can be used in conjunction with a written questionnaire to “spring board” into conversations. They can:
- Initiate dialog.
 - Explore an issue in more depth.
 - Transition from one issue to another or from one health determinant to another.
 - Determine knowledge, motivation, concern or attitude.

They are generally but not always open-ended and are usually not written. They require that staff be trained in cultural competency, critical thinking, and rapport building in order to choose questions that are sensitive as well as enlightening.

Examples:

- Weight gain is a normal part of pregnancy. How do you feel about gaining weight?
 - Parents often wonder if their child is eating right. Do you have questions about (name)’s eating?
- b. Oral questions are used as an **aid to critical thinking**. In a WIC nutrition assessment, they are invaluable tools that will help staff to:
- Clarify issues.
 - Improve precision.
 - Assure accuracy and relevancy.
 - Understand the problem in depth.
 - Make sure the staff’s understanding and decisions are logical and fair.

Case Study: A WIC mother reports her infant is experiencing problems she attributes to the infant’s formula (i.e., diarrhea, constipation, or abdominal distress). What information is needed to assess a potential cause and decide on a course of action?

Critical thinking goal = to determine if the formula is the cause of the symptoms.

Appendix B

Questions can be used to:

Clarify the issues

- a. How old is the infant?
- b. What does the doctor think?
- c. What other formulas have been tried?
- d. Exactly what are the symptoms? Example: spitting up versus projectile vomiting, constipation versus infrequent stools, diarrhea versus frequent stools.

Improve **precision**

- a. How is formula mixed?
- b. How long after feeding do symptoms occur?
- c. Do symptoms occur with every feeding?

Assure **accuracy**

- a. Would you show me on the bottle how much water you add?
- b. Can you show me on this chart what your baby's stools look like?

Be sure the information is **relevant**

Mom states that her older children could not tolerate this formula either. Is that information relevant?

Check that the problem has been examined in **depth**

- a. Does the infant have other health problems?
- b. Is the infant losing weight?
- c. Are other family members ill?

Check that the information and conclusion are **logical**

Are the symptoms and requests consistent with scientific knowledge? Example: requests for lactose-free, milk-based formula for cow milk allergy *or* standard cow milk formula for lactose intolerance *or* for cow milk allergy.

Check for **fairness**

Have I looked at all the issues?



