Nutritional Epidemiology

Development of a Spanish-Language Version of the U.S. Household Food Security Survey Module¹,²

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ABSTRACT A survey module used to monitor the prevalence of household food insecurity and hunger in the United States was developed by a broadly based collaborative project with leadership from the USDA and the National Center for Health Statistics (NCHS). It has been administered annually since 1995 as a supplement to the Census Bureau’s Current Population Survey (CPS) and is part of the National Health and Nutrition Examination Survey (NHANES) and other national surveys. Spanish is the second most common language in the United States, yet no standardized Spanish-language version of this instrument has yet been sanctioned by the relevant federal agencies. In the CPS, interviewers free-translate the questions while interviewing respondents who prefer to have the interview conducted in Spanish. National prevalence data indicate relatively high rates of food insecurity for Hispanic households, raising the question whether methodological artifacts may contribute to these rates. We analyzed eight Spanish-language versions of the instrument that have been used in published work for variability in wording and phrasing. We then conducted focus groups of low-income Spanish-speaking participants from Mexico, Central America, Puerto Rico and Cuba to refine a single Spanish-language instrument. We also employed professional translators to render the English instrument into “standard” Spanish; both instruments were then back-translated. The focus group–derived instrument uses simpler language and grammar; its back-translation integrity to the English version was slightly better than the professionally translated version. We provide the instrument for use and further testing by other investigators. J. Nutr. 133: 1192–1197, 2003.

KEY WORDS: • food security • Hispanics • Spanish • surveys

Hunger in the social sense, i.e., that brought about by inadequate economic resources, has long been a relevant concern to nutrition policy in the United States, but only in the last decade has there been a major effort to measure hunger and its context and antecedents in large surveys. The only consistent nationally representative information before this time comes from a single question incorporated into all of the national Household Food Consumption Surveys since 1977–78. During the period from the late 1970s through the early 1990s, the complexity and details of the concept of food insecurity were developed and explored in a variety of settings and situations. Most notable were the series of state-level studies known as the Community Childhood Hunger Identification Project (CCHIP)² organized by advocacy and philanthropic groups (1), theoretical work begun at Cornell University with Radimer’s dissertation on the concept (2) and subsequent studies among various groups in the northeastern United States (3,4). These investigators demonstrated that consistent answers could be obtained to questions designed to measure food insecurity, and that household-level management or coping strategies could be identified and utilized as the basis for evaluation. In 1990, a Life Sciences Research Office (LSRO) panel agreed upon an operational definition for food security and its inverse, food insecurity (5), defining food security as “access by all people at all times to enough food for an active, healthy life. Food security includes at a minimum: 1) the ready availability of nutritionally adequate and safe foods, and 2) an assured ability to acquire acceptable foods in socially acceptable ways . . . .” Food insecurity was defined as “limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways . . . .” At about the same time, Congress passed the National Nutrition Monitoring and Related Research Act of 1990, and a subsequent long-range plan clarified the government’s responsibility to develop a sound national measure of food insecurity and hunger appro-

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⁴ “Which of the following best describes the food eaten in your household in the last 12 months: We have enough and the kinds of food we want; we have enough but not always the kinds of food we want; we sometimes do not have enough to eat; we often don’t have enough to eat.”
⁵ Abbreviations used: CCHIP, Community Childhood Hunger Identification Project; CPS, Current Population Survey; FNS, Food and Nutrition Service (of the USDA); LSRO, Life Sciences Research Office (of the Federation of American Societies for Experimental Biology); NHANES, National Health and Nutrition Examination Survey; WIC, Women, Infants and Children.

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The instrument in different surveys that Hispanics in a Connecticut survey answered affirmatively to the least severe food insecurity items more frequently than comparable respondents in other surveys (15). Survey instruments utilized across languages and cultures encounter numerous problems of validity, and semantic equivalence is only one among several issues (16). Thus the question arises whether there may be artifactual influences from translation and interpretation of the questions in the instrument that affect prevalence estimates. The present study is a first step in addressing that question. Our objective was to evaluate the existing Spanish-language versions of the CPS food security supplement instrument and to determine whether any of them is adequate for use as a standard. If no version was found to be adequate, we would then undertake the development of a suitable version that could then be applied and subsequently tested for its scaling performance and other characteristics.

**Materials and Methods**

We started by assembling the existing Spanish-language versions of the instrument, through identification of published sources and informal queries to colleagues. We identified eight versions that have been utilized in published studies or national surveys or are currently being used by researchers. They were from the Survey of Program Dynamics (U.S. Census Bureau), NHANES (National Center for Health Statistics), the ECLS (U.S. Department of Education), the Alameda County (California) Calworks Program, Physicians for Human Rights (17) and a version that was created by California Food Policy Advocates (18) and modified by Herman (19). We then proceeded to do a word-by-word and question-by-question comparative analysis. Although there was some similar phrasing common to all or most versions, variation existed in choices of vocabulary, verb tenses or phrases in every one of the 18 questions. The most obvious differences with potential for variable interpretation included choice of verb tense and active vs. passive voice in Spanish, choice of words for which more than one possible choice exists, and wording for several English phrases for which direct translations are not meaningful (e.g., “cut the size of meals”), phrases for which the English phrase does carry the same connotation in Spanish (e.g., “balanced meals”), and items for which there are a number of ways of rendering the translation (e.g., “not eat for a whole day” was translated with slightly different nuances as no comer por un día entero, no comer por un día completo or no comer algún día en todo el día in the different instruments).

Items of concern included the variability in the choice of words to represent food (alimentos vs. comedas vs. comestibles), the fact that the most common word for “food” and “meals” is the same (comidas), the choice of terms for portion size (porción vs. cantidad vs. tamaño), and responses concerning frequency that could affect the metric properties of derived data (e.g., “often true” was variably rendered as a menudo or casi siempre or frecuentemente.)

We then proceeded to recruit focus groups of low-income, Spanish-speaking adults who were willing to serve as “experts” on the wording of the questions. The sampling can be best described as an ethnically stratified opportunistic sample because we first focused within a low-income population and then recruited individuals who were the primary food-responsible person in their household, whose preferred or only language was Spanish, who were literate in Spanish and who were born in Mexico, Central America, Puerto Rico or Cuba. Working with the Public Health Foundation Enterprises Women, Infants, and Children (WIC) Program in Los Angeles, we identified key informants (knowledgeable paraprofessionals, clients and staff) who were informed in detail about the study’s purposes and requirements, and who then recruited Mexican and Central American participants. There were insufficient numbers of Cuban and Puerto Rican individuals within WIC program participants, but the same key informants were able to put us in touch with suitable Cuban and Puerto Rican individuals whom we invited to additional focus groups. On the whole, the participants were low income (77% had household incomes below $20,000/y) and fairly young (the mean age was 30 y).
Focus groups were held over a period of 5 mo in the fall and winter of 2001–2002, and ranged in size from 4 to 15 participants. Each group was facilitated by a professional translator and one or more of the authors; verbatim notes were recorded on a laptop computer by a single note-taker (both the facilitator and the note-taker are professionals whose first language is Spanish; although they themselves were not food security researchers, they had received substantial orientation by the authors concerning the rationale and content of the domain). Four Cuban men and one Puerto Rican man participated; all other participants were women. Among Central American participants, countries of origin included Guatemala, El Salvador and Honduras. Introductory comments by the facilitator made it clear that participants were being selected as native-speaking “experts” to determine the best way for surveys to ask certain questions in Spanish about food, having enough food and problems in having enough food. In addition to specific input on the wording of the questions in the instrument, we devoted part of the focus group time to exploring participants’ experience with and perceptions of hunger and food insecurity; that information will be presented elsewhere. Focus groups lasted ~90 min and were terminated when saturation was reached (material elicited began to be redundant). Light refreshments were served and participants were compensated for their time and effort with a gift of a $50 prepaid telephone card.

An initial focus group consisted of women of Central American and Mexican origin; that group was presented with all eight existing instruments with each question compared in detail, and asked to select the best two or three options for each. Subsequent focus groups were homogeneous for country or region of origin. They were presented with the two or three options/question derived from the first larger group and asked to choose or modify to reach an optimal way of asking the question. After these groups, we constructed an instrument incorporating the most agreed-upon refinements and choices (“focus group instrument”); at the same time, the professional translator/facilitator worked with three other certified translators to produce an independent version in “standard” Spanish (“professional instrument”). Finally, 14 WIC participants from Mexico and Central America who had not been previous focus group participants were administered both instruments, in random order, and asked to indicate which version they preferred and why, and to suggest any changes. Finally, both versions of the instrument were back-translated by independent translators into English and the back-translations compared with the original English-language instrument.

Focus group data were analyzed by systematic mapping of verbatim recorded comments to questionnaire items, tallying of opinions, adjustment for repeat comments by the same person, and notation of the strength of consensus or disagreement among individuals within groups and across groups. Two of the researchers (A.S. and D.H.) were the primary qualitative analysts. The variable size of the focus groups (4–15 members) creates the possibility of some bias because smaller groups allow more thorough exposition of individuals’ opinions; we attempted to compensate for this somewhat by adjusting for repetitive material from the same respondent.

All procedures involving human subjects were approved by UCLA’s Committee on Protection of Human Subjects in Research.

**RESULTS**

There was general agreement among groups that 1) all of the existing versions could be improved; 2) there were several glaring errors that could be easily corrected; 3) although there was some minor variation among the various country-of-origin groups in a few colloquial terms (such as *estufa vs. cocina* for stove), there was no hesitation in agreeing on a commonly understood and clear choice; and 4) among the various choices, simpler was almost always judged better as long as clarity was maintained. Specific recommendations that are of note include the following:

Some existing instruments used the term *almácén* for “store,” which all groups agreed represented department rather than grocery stores (*tienda* was preferred).

The verb *reducir*, used in some versions for the question about cutting the size of portions served, was uniformly interpreted to mean loss of body weight or size rather than reduction in size of food portions; the phrase *dió menos cantidad* was preferred.

The word *barato* for “low cost” food implied cheap food in the sense of low quality; the phrase *bajo costo* was preferred.

The choice of the word for food received widespread discussion and debate. The general agreement was that *alimentos* carries a connotation of nutritive food, whereas *comida* is the more general term and thus preferred for this context. *Comestibles* was understood to imply only packaged and purchased food.

There was repeated discussion of the optimal translation for “statement” (as in “which of the following statements best describes . . .”) with general consensus that *oraciones* (sentences) was preferable to declaraciones (literally statements or declarations), which sounds more legalistic.

The use of more words than necessary to transmit a concept clearly was generally rejected in favor of simpler language. Examples of the recommendations to specify *por un día* or *por todo un día* rather than *por un día entero* for “a whole day”; and recommendations to use the simplest of the alternatives to describe frequency (*frecuentemente, a veces y nunca* for often, sometimes and never).

The concept of a “balanced meal” (questions 4 and 6) raised a number of questions of conceptual validity. There was general agreement that the terminology *comida balanceada* was preferable to *dieta balanceada* (both have been used in various versions of the instrument) and that the latter has a different meaning; however, the meaning of the whole concept remained somewhat unclear. Although the idea of a “balanced” diet or meal seems to be basic to European-American culture, it does not elicit the same recognition as implying nutritional adequacy or variety among these Hispanic groups. The Puerto Rican group (only) suggested *comida nutritiva* (nutritious food or nutritious meal). Not having the option of removing this question entirely, in the end we adapted our Spanish-language version to recognize the ambiguity of the phrase and provide alternative wording.

Of the final group of 14 respondents who were administered our focus group–derived instruments and the “professional” instrument, in random order, nine preferred the focus group version, two said they were equally good and three preferred the professionally translated version. The reasons given by the majority for preferring the focus group–derived instrument were simplicity, clarity, lack of redundancy and lack of formality. Those who preferred the more formal instrument said it made them feel that the interview was more “official” when this version was used. Back-translations of both instruments reinforced respondents’ opinion of the slight advantage of the simpler instrument, which demonstrated greater integrity to the original version in some respects. No individual was classified differently by the two instruments.

The focus group–derived instrument is presented as the Appendix to this paper; the formal “professional” instrument and back-translations of both are available on request to the authors.

**DISCUSSION**

Adequate translation of an instrument to be widely used is intuitively important, but seldom given the kind of systematic attention it deserves. Behling and Law recently published a brief guide to the subject (16), and they mention that their work was inspired by the lack of guidelines available to help researchers in this essential task. They point out that there are three underlying problems that plague efforts to create mean-
ingful target language equivalents from source language instruments: lack of semantic equivalence across languages; lack of conceptual equivalence across cultures; and lack of normative equivalence across societies. Semantic equivalence is the relatively straightforward identification of optimal words and phrases in the target language that have meanings that match those in the source document. Although straightforward, this task requires a systematic and detailed attention to heterogeneity in the target language group that is seldom undertaken. It is this task of improving semantic equivalence that we have attempted to address in the present work.

Conceptual equivalence across cultures (the degree to which the constructs or concepts operationalized in the source instrument exist in the same form in the thoughts of members of the target culture) and normative equivalence across societies (the degree to which people are willing to and comfortable with discussing specific topics, or the degree to which they are willing to do so with strangers) are more difficult to address. Formal cognitive testing has been conducted with the items in the English version of this instrument (20), and would be a logical next step in validating the instrument presented here. We identified one clear problem of conceptual equivalence, namely, the idea of a “balanced meal.” This particular item has also been noted to be problematic in the adaptation of an instrument in Indonesia (21) and also in Hawaii (22). The term “balance” with regard to meals seems to derive from English roots, and appears to have different meanings in different cultural contexts. As a result of the ambiguity created by translation of this phrase, we have on the accompanying instrument identified two alternative phrasings (comida balanceada and comida nutritiva).

We cannot at this point comment on normative variation in the ease with which the experience of hunger and food insecurity (a relatively private or sensitive topic to some individuals) is discussed because we did not explore the issue with non-Hispanics in the same way. These groups of first-generation Hispanic adults did not hesitate to offer their opinions, suggestions and experiences to us and to each other after becoming familiar and comfortable with the individuals and the concepts, but comparative data are not available.

Further research, on a larger and more quantitative scale, will be required to more fully explore the validity of a Spanish-language food security instrument for the United States, including formal cognitive testing, exploration of appropriateness with still other Hispanic groups residing in different parts of the country, and determination of scaling characteristics and other properties of the instrument.

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LITERATURE CITED

APPENDIX: U.S. HOUSEHOLD FOOD SECURITY INSTRUMENT, SPANISH VERSION

1a. Aquí hay algunas razones por cuál las personas no comen lo suficiente. Para cada una, digame si es una razón por la cual usted no come lo suficiente (MARK ALL THAT APPLY).

SI NO DON'T KNOW
[ ] [ ] [ ] No tengo sufiiciente dinero para comida
[ ] [ ] [ ] Se me hace difícil ir a la tienda
[ ] [ ] [ ] Estoy a dieta
[ ] [ ] [ ] No tengo una estufa que funcione
[ ] [ ] [ ] No puedo cocinar o comer debido a problemas de salud

(CONTINUE TO 2)

1b. Aquí hay algunas razones por las personas no siempre tienen las clases de comida que quieren o necesitan. Para cada una, por favor digame si esa es una razón por que no tiene las clases de comida que usted quiere o necesita. (MARK ALL THAT APPLY).

SI NO DON'T KNOW
[ ] [ ] [ ] No hay suficiente dinero para comida
[ ] [ ] [ ] Muy difícil ir a la tienda
[ ] [ ] [ ] Estoy a dieta
[ ] [ ] [ ] No hay la clase de comida que quiero
[ ] [ ] [ ] No hay buena calidad de comida

Ahora le voy a leer algunas respuestas de la gente sobre su situación de comida. Para cada respuesta, favor de indicarme si ocurre en su casa frecuentemente, a veces, o nunca en los últimos 12 meses, es decir desde el último (display current month).

2. La primera oración es “Me (nos) preocupó que la comida se podía acabar antes de tener dinero para comprar más.” Para (Usted./su casa), ¿Esto fue frecuentemente, a veces, o nunca en los últimos 12 meses?

[ ] Frecuentemente
[ ] A veces
[ ] Nunca
[ ] Don’t Know or Refused

3. La comida que compré (compramos) no duró mucho y no había dinero para comprar más. Para (Usted./su casa), ¿Esto fue frecuentemente, a veces, o nunca en los últimos 12 meses?

[ ] Frecuentemente
[ ] A veces
[ ] Nunca
[ ] Don’t Know or Refused

4. (Yo/Nosotros) no teníamos lo sufiiciente para comer una comida balanceada (nutritiva). Para (Usted./su casa), ¿Esto fue frecuentemente, a veces, o nunca en los últimos 12 meses?

[ ] Frecuentemente
[ ] A veces
[ ] Nunca
[ ] Don’t Know or Refused

5. Dependía (Dependíamos) de unos pocos alimentos de bajo costo para dar comida a los niños por que se nos terminó el dinero disponible para comprar alimentos. Para (Usted./su casa), ¿Esto fue frecuentemente, a veces, o nunca en los últimos 12 meses?

[ ] Frecuentemente
[ ] A veces
[ ] Nunca
[ ] Don’t Know or Refused

6. No teníamos (teníamos) sufiiciente dinero para ofrecer una comida balanceada (nutritiva) a los niños. Para (Usted./su casa), ¿Esto fue frecuentemente, a veces, o nunca en los últimos 12 meses?

[ ] Frecuentemente
[ ] A veces
[ ] Nunca
[ ] Don’t Know or Refused

7. Mi (s)/nuestros hijo(s) no comía(n) lo sufiiciente por que no teníamos(mos) dinero para comprar sufiiciente comida. Para (Usted./su casa), ¿Esto fue frecuentemente, a veces, o nunca en los últimos 12 meses?

[ ] Frecuentemente
[ ] A veces
[ ] Nunca
[ ] Don’t Know or Refused

8. En los últimos 12 meses, desde el último (nombre del mes presente). ¿ Usted o algún miembro de su familia comió menos o dejó de comer por que no había sufiiciente dinero para la comida?

[ ] Sí (GO TO 8A)
[ ] No (SKIP TO 9)
[ ] Don’t Know (SKIP TO 9)

8a. ¿Con qué frecuencia sucedió esto—casi cada mes, algunos meses, o solo en uno o dos meses?

[ ] Casi cada mes
[ ] Algunos meses
[ ] Solo en uno o dos meses
[ ] Don’t Know

9. En los últimos 12 meses, ¿Comió usted menos de lo que pensaba que debía por que no hubo sufiiciente dinero para comida?

[ ] Sí
[ ] No
[ ] Don’t Know
10. En los últimos 12 meses, ¿Alguna vez tuvo hambre pero no comió por que no tuvo suficiente dinero para comida?

[ ] Sí
[ ] No
[ ] Don’t Know

11. En los últimos 12 meses, ¿Perdió usted peso por que no tuvo suficiente dinero para comprar comida?

[ ] Sí
[ ] No
[ ] Don’t Know

12. En los últimos 12 meses, ¿Usted o algún otro adulto de su familia no comió por todo el día por que no hubo suficiente dinero para comida?

[ ] Sí (GO TO 12A)
[ ] No (SKIP TO 13)
[ ] Don’t Know (SKIP TO 13)

12a. ¿Con qué frecuencia sucedió esto—casi cada mes, algunos meses, o solo en uno o dos meses?

[ ] Casi cada mes
[ ] Algunos meses
[ ] Solo en uno o dos meses
[ ] Don’t Know

13. En los últimos 12 meses, ¿Alguna vez le dió menos cantidad de comida a su(s) hijo(s) por que no hubo suficiente dinero para comida?

[ ] Sí
[ ] No
[ ] Don’t Know

14. En los últimos 12 meses, ¿Alguna vez su hijo o cualquiera de sus hijos no comió por que no hubo suficiente dinero para comida?

[ ] Sí (GO TO 12A)
[ ] No (SKIP TO 13)
[ ] Don’t Know (SKIP TO 13)

14a. ¿Con qué frecuencia sucedió esto—casi cada mes, algunos meses, o solo en uno o dos meses?

[ ] Casi cada mes
[ ] Algunos meses
[ ] Solo en uno o dos meses
[ ] Don’t Know

15. En los últimos 12 meses, ¿Alguna vez su hijo o cualquiera de sus hijos tuvo hambre pero no tuvo suficiente dinero para comprar más comida?

[ ] Sí
[ ] No
[ ] Don’t Know

16. En los últimos 12 meses, ¿Alguna vez sus hijos no comieron por todo el día por que no hubo suficiente dinero para comida?

[ ] Sí
[ ] No
[ ] Don’t Know

*Items 1, 1a and 1b are optional and not required to calculate the scale or to classify households. These may be omitted if not needed for analytical purposes or screening.