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Understanding the Measurement of Hunger and Food Insecurity in the Elderly

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Abstract

The elderly are one of the population subgroups at greatest risk for hunger and food insecurity. To date, no accurate measures of this problem have been developed. What is needed are a thorough understanding of the phenomenon, and an assessment of how the elderly perceive and answer items commonly used to measure hunger and food insecurity in other subgroups.

In-depth, open-ended interviews were conducted with forty-one low-income urban black and rural white residents of upstate New York. Results suggest a conceptual framework of food insecurity in the elderly with two significant differences from frameworks proposed for younger families: the major role of health problems and physical disabilities, and the impact of personal history on perceptions of food insecurity. In a telephone follow-up (approximately six months after the initial interviews) twenty-four respondents were asked commonly used food insecurity questionnaire items from six different sources. Results suggest that hunger and food insecurity among the elderly can be measured directly. The commonly used measures tested here will help categorize the stages of food insecurity. However, these direct measures might underestimate the prevalence of food insecurity because of a perceived reluctance to report problems with food.

Understanding the Measurement of Hunger and Food Insecurity in the Elderly

INTRODUCTION

Over the past decade, domestic hunger has reemerged as a social and political problem. The lack of an agreed-upon definition of hunger and the measures with which to estimate its prevalence, however, remain a major difficulty for those concerned with its alleviation. Hunger and food insecurity among the elderly have been little studied, yet given the low incomes, limited mobility, and poor health of many elderly individuals, they are likely to be at greater risk of hunger than the general population. The limited evidence available supports this supposition, yet to determine the exact nature and extent of the problem, we need tools that accurately measure the phenomenon of hunger among the elderly. To do so, we need to understand how hunger is experienced by the elderly, and we need an assessment of how the elderly interpret items commonly used to measure hunger and food insecurity.

In recent years, researchers have been developing definitions of, and ways to measure, hunger and food insecurity in the United States. Americans conceptualize hunger more broadly than in less developed countries, where the most visible consequence of hunger is acute primary malnutrition (Wehler et al. 1992). Hunger is assessed differently in food-rich countries like the United States, where inadequate financial resources for purchasing food and food insufficiency are core components in the assessment of hunger. The term "food insecurity," was derived in part to describe this broader concept of hunger. According to one widely used definition, food security is

> Access by all people at all times to enough food for an active, healthy life. Food security includes at a minimum: (a) the ready availability of nutritionally adequate and safe foods, and (b) an assured ability to acquire acceptable foods in socially acceptable ways (e.g., without resorting to emergency food supplies, scavenging, stealing, or other coping strategies) (Anderson 1990).

Similarly, Radimer et al. (1992), in a qualitative study of low-income mothers and children who had experienced hunger, derived the following definition of food *insecurity*: "The inability to

acquire or consume an adequate quality or sufficient quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so." This study suggested that hunger represents the most extreme consequence of the progression of food insecurity; that food insecurity is experienced differently at the household, adult, and child levels; and that it has four components—a quantitative and a qualitative component related to food, and psychological and social components related to worry about food and how food is acquired. Measures of food insecurity were developed from a series of twenty-seven questions and statements that described, in the women's own words, the experience of food insecurity. Twelve of these measures, which captured most of the components and showed high reliabilities, were later tested in a randomly selected survey of the general population, and were found to correlate significantly with risk factors for hunger and its dietary consequences, such as consumption of fruits and vegetables and the amount of food available in the household (Kendall et al. 1994).

Although several additional instruments have since been developed for measuring hunger in families with children, examining food insecurity in the elderly has only recently been attempted. Frongillo et al. (1992) examined how social, location, health, and food-need characteristics were related to food insecurity (measured as not eating for one or more days) among the elderly. They found that 3.4 percent of Congregate Meal clients and 17.5 percent of clients waiting to begin receiving home-delivered meals did not eat for one or more days. Based on the results of a national mail survey, the Urban Institute estimated that nearly 5 percent of the elderly and 16 percent of the low-income elderly experience food insecurity (see Cohen, Burt, and Schulte 1993 for a description of the survey results). Urban versus rural locale made no difference in the rate of food insecurity, but race did: the highest rate was found among Hispanics and other races (11 percent), followed by blacks (9.5 percent), with whites having the lowest levels (3.6 percent). Food insecurity was associated with low income, restricted mobility, health conditions that interfere with eating, housing costs, and eating alone.

Several other studies have used various methods to determine the prevalence of food insecurity among the elderly. A recent New York State survey of nutrition among the elderly found that 11.4 percent answered positively to at least one of three items measuring food insecurity, with a higher prevalence among the minority elderly (24 percent) and those in poverty (22 percent) (New York State Office for the Aging 1995). The Food Research and Action Center (1992) found, in a 1985 survey of the elderly in twenty-one states, 22 percent to be at nutritional risk, with those living on incomes below the poverty level more likely to be at nutritional risk and to report problems with purchasing needed food. In 1991, the Tufts Center on Hunger, Poverty, and Nutrition Policy estimated that 10.5 percent of elderly Americans experienced hunger (Cook and Brown 1992). Based on a 1993 survey, Second Harvest estimated that, of the twenty-six million Americans seeking emergency food at their facilities, nearly 8 percent were elderly (Van Amberg 1994). A number of states that have used the Nutrition Screening Initiative tools to screen the elderly for nutritional risk have found from 40 to 50 percent of their samples to be at moderate to high nutritional risk (U.S. DHHS 1994). Although one of the screening items specifically addresses food insecurity, this item is not separated out from the overall risk score.

Although these data document the existence of food insecurity among the elderly, the differences in the methods used to estimate its prevalence underline the need to develop an agreed-upon instrument to measure food insecurity in the elderly so that comparisons can be made across populations and settings. Because elderly individuals will be included in federally conducted national surveys, like the Current Population Survey, that will estimate the prevalence of food insecurity, it is important to understand both how the elderly conceptualize hunger and food insecurity *and* how they respond to measures of hunger and food insecurity developed for use in other population groups. Given that elderly individuals experienced the economic deprivation of the Great Depression and food rationing during World War II, their perspective on what constitutes hunger and food insecurity may be

very different from that of the younger adults with children who have been the focus of much of the research in this area to date.

The fundamental principle underlying the development of a good measure for food insecurity is an accurate and thorough understanding of the phenomenon (Kendall et al. 1994). Therefore, the main objective of this study was to understand how the elderly who have experienced hunger and food insecurity conceptualize it. Other objectives were to assess whether items commonly used to measure hunger and food insecurity are (a) answered by the elderly in a manner that is consistent with the concepts underlying the items, and (b) perceived by the elderly as their developers intended.

METHODS

Naturalistic inquiry was used to address the first objective, understanding the experience and conceptualization of food insecurity in an elderly population. In naturalistic inquiry, the researcher does not begin with a specific theory or hypothesis, but rather seeks to develop a conceptualization of a phenomenon from a thorough understanding of its experiential base (Lincoln and Guba 1985). In-depth, open-ended interviews are generally used to obtain this experiential base.

Because the objective of the study was to understand a phenomenon, rather than to test the generalizability of a hypothesis, purposive sampling was used. The main sampling criteria were diversity in terms of rural versus urban locale, age, sex, ethnicity, types of food programs used, and living with or without a spouse. A total of forty-one elderly persons were interviewed. Approximately half of these were blacks living in a large city in upstate New York, while the other half were whites living in a rural county in upstate New York. Survey participants were recruited primarily through subsidized housing programs (in the city), food pantries (in the rural county), and congregate and home-delivered meal programs (in both locations). Program contacts were asked to refer clients who were especially hard off and might be experiencing food problems.

A single personal interview was completed by a trained qualitative researcher with each of the single persons and couples. Interviews were conducted in each participant's home, except for the six inner-city Congregate Meals participants, who were interviewed at the meal program site. At the start of the interview, interviewees signed a consent form that was read to them, explaining the nature of the study, informing them that they would receive ten dollars reimbursement, assuring them of confidentiality, and requesting permission to tape-record the interview. Written notes were also taken during each interview. One elderly couple did not want to be tape-recorded, so the interviewer took extensive notes. Immediately following the interview, the researcher tape-recorded additional information about it.

A semistructured interview guide consisting of open-ended, general questions about the food situation was used in each interview (see Appendix A). The guide was structured to obtain an understanding of the experiences and conceptual framework of each subject (Spradley 1979). Emphasis was placed on learning what was important to the informant, and on gaining the informant's perception of his or her world, including the "language" or terminology they used (Werner and Scheopfle 1987).

Tape-recorded interviews and field notes were transcribed, broken down into coded units of information as small as possible while still remaining meaningful, and then sorted conceptually, using a qualitative data analysis program developed by Wawrzynek and Wolfe (1989). Qualitative analysis strategies based on the constant comparative method, such as diagraming, charting, and writing, were then used to interpret the data, examine themes that emerged, and draw conclusions (Miles and Huberman 1994; Glaser and Strauss 1967).

To address the other objectives—assessing the perceptions of and answers to commonly used items for measuring food insecurity among the elderly—twenty-four of the interviewees responded to items from six different sources about six months after their in-depth interviews. These twenty-four individuals (in twenty-three households) were those who were recontacted and who agreed to the

telephone interview. The twelve elderly households not participating in the telephone interview included three who had moved out of the area, three who were too sick to be interviewed, three who did not want to be recontacted, one who was never reached, and two who were not recontacted because they were not particularly low-income.

The telephone questionnaire (Appendix B) included items taken or adapted from the Cornell-Radimer items (Kendall et al. 1994), the Community Childhood Hunger Identification Project (CCHIP) items (Wehler et al. 1992), the Urban Institute items (Burt 1993), the USDA food sufficiency questions as modified for the Food Security Supplement to the April 1995 Current Population Survey (USDA and U.S. DHHS 1995), one item from another Cornell study by Frongillo et al. (1992), and the Nutrition Screening Initiative checklist items, one of which relates specifically to food insecurity (White et al. 1992). Their responses to each measure were later compared to a food insecurity categorization based on their in-depth interview, in order to examine inconsistencies in the severity of food problems reported across the two interview methods. In addition, comments they made as they answered the items were noted to assess how they perceived the items and to identify any interpretation difficulties.

RESULTS

Sample Characteristics

As shown in Table 1, a majority of the sample were women living alone. In addition, several couples in the rural area, a few men living alone, and a few women living with others were

TABLE 1
Sample Characteristics
(N = 35 households, 41 elderly individuals)

Characteristic	*Rural White* N[a,b]	*Rural White* %	*Urban Black* N[a,b]	*Urban Black* %
Living Situation[a]				
Female living alone	10	53	11	69
Male living alone	1	5	2	12
Couple living together	5	26	0	0
Female living with other(s)	3	16	3	19
Age (years)[b]				
60–69	4	16	6	38
70–79	14	56	8	50
80–89	7	28	2	12
Health Problems[b]				
None	2	8	1	6
One	7	28	6	38
Two	8	32	8	50
Three	8	32	1	6
Restricted Mobility[b]	2	8	4	25
Food Program Participation (regular)[a]				
Food Stamps	6	32	9	56
Congregate Meals	5	26	8	50
Home-Delivered Meals				
Meals: daily hot or weekly frozen	3	16	1	6
Weekly grocery bag	4	21	NA	—
Food Pantry	14	74	0	0
Number of Food Programs Used[a]				
None	1	5	3	19
One	7	37	8	50
Two	8	42	5	31
Three or More	3	16	0	0
Education (last grade completed)[b]				
High school or greater	9	36	1	6
9th–11th grade	6	24	7	44
6th–8th grade	10	40	3	19
5th grade or less	0	0	5	31

(table continues)

TABLE 1, continued

Characteristic	*Rural White* N[a,b]	*Rural White* %	*Urban Black* N[a,b]	*Urban Black* %
Monthly Income[a]				
≤$500 per person	4	29	3	23
$501–$600 per person	6	43	6	46
$601–$700 per person	2	14	1	8
> $700 per person	2	14	3	23
Not ascertained	5	—	3	—

[a]Number of households (of 19 rural white, 16 urban black).
[b]Number of individuals (of 25 rural white, 16 urban black).

interviewed. Of the women living with others, most were living with children or grandchildren, although in one case, two unrelated elderly women were living together. Of those willing to divulge financial information, around a quarter received a monthly income of $500 or less per person, while over 40 percent received between $500 and $600 (not including food stamps or in-kind housing subsidization). Only 6 percent of the urban black sample had completed high school, while nearly a third (many of whom had grown up in the rural South) had not completed sixth grade. In contrast, over a third of the rural white sample had completed high school, and all had completed at least the sixth grade, although 40 percent had not completed ninth grade.

About half of those interviewed in each site were in their seventies. A larger proportion of the rural white than urban black elderly were in their eighties, while a larger proportion of the urban black than rural white elderly were in their sixties. Over half of the elderly in each site had two or more health problems such as diabetes or heart disease, and a quarter of the urban black elderly had restricted mobility (confined to a wheelchair or walker or not able to leave home without help).

When using the Radimer-Cornell definition of food insecurity (the inability to acquire or consume an adequate quality or sufficient quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so), nearly all of the elderly interviewed were experiencing some degree of food insecurity (not shown in the table), and many were using two or three different food programs. Among the rural white sample, most used a food pantry regularly, about a third received Food Stamps, about a quarter ate at Congregate Meals, about one-fifth participated in a special county program that, on a weekly basis, delivers a bag of groceries to the homebound or those with transportation difficulties, and several received home-delivered meals. Among the urban black sample, just over half received Food Stamps, half ate at Congregate Meals, and one received a hot meal daily. None used a food pantry regularly, although several commented that they had used one in an emergency.

Food Insecurity in the Elderly: A Conceptual Framework

Figure 1 illustrates a conceptual framework of food insecurity in the elderly, based on their personal experiences as described in the in-depth interviews. Factors that contribute to food insecurity in the elderly include limited incomes, poor health and physical disabilities, high medical bills and medicine costs, and unexpected expenses such as house repairs and medical emergencies. Food insecurity is reduced by the use of public and private food programs, having savings, the availability of children or other family members, and through various food management strategies, a product of their long and rich lives. Various community characteristics, such as the availability of transportation services and grocery stores, also affected food insecurity. Finally, the interviewees' perception of the severity of their food insecurity depended not only on their actual experiences, but also on their world view, particularly their religious beliefs.

Health Problems and Disabilities. As noted earlier, a majority of the sample had chronic diseases and/or physical disabilities. These contributed to food insecurity by (a) increasing medical costs, (b) limiting access to food and/or ability to prepare food, (c) increasing the need for certain types of foods and meal patterns, leading to anxiety about the ability to obtain them, and (d) limiting the use of previously used food management strategies.

Poor health, particularly chronic diseases, contributed to food insecurity through high medical bills and high medicine costs, especially when these were unexpected. When asked specifically whether they ever had to choose between buying food and buying medicine, few answered positively, but responses varied among those who did. Some perceived the need for medicine and/or medical insurance to be greater than their need for food. For example, one couple said they would buy the medicine first, because he had a heart condition and had to have medicine to live. If they couldn't afford enough food after buying the urgent medicine, they would "generally cut down on our eating." In turn, choosing medicine over food often affected health.

Figure 1 here

> It cost me more than I have money to afford to pay medical and I don't get the right food because I can't pay the medical and get the right foods to eat. . . . This past year in June, I just didn't have the money [so] I didn't have the food to eat. I eat a little, but it wasn't enough. Then I had a lot of low blood sugar spells. They had to take me to the emergency room.

Others, however, feeling that food was more urgent, would choose food over medicine when there was not enough money for both. Many of these individuals would pay their medical bills late or pay only part of them. One woman refused a recommended medical procedure because she felt she and her husband could not afford it and still be able to pay for enough food and other bills. Some did not take prescribed medication, such as high blood pressure pills, or did not buy "extras" such as painkillers, because they could not afford them. Others had gotten samples from their doctors, but would take the medicine only until the samples ran out. Still others, particularly in the rural areas, bought their medicine on credit, sometimes with no interest charged, because they knew the pharmacist. This often meant using a more expensive local pharmacy in order to have the security of using credit when necessary, but it also meant they had money on hand to buy food.

Physical disabilities and poor health that restricted mobility contributed to food insecurity by interfering with the ability both to obtain and to prepare food. Some elderly were unable to shop because they could not drive or were unable to stand or walk for very long. One woman was half-paralyzed and unable to open a can. Several survey participants described times when they felt especially poorly or had "low sugar," and therefore were not able to fix themselves a meal from scratch, which, because of their limited incomes, were the only foodstuffs they had available. One woman, confined to a wheelchair, sometimes had such low blood sugar from not eating (often because no one had fixed her a meal), that she lacked the strength to get to the kitchen for crackers and peanut butter. Physical disabilities caused heavy dependence on others, increased anxiety, and even periods without food. Some of the participants paid more for food than they could afford because they had to rely on others—who were less willing to use money-stretching shopping practices—to food-shop for

them, contributing to compromised diet quality and food anxiety. Not eating right or not enough also made them more anxious about their health and their food situation because they knew they should be eating better, which often caused a deterioration in their health status.

Poor health and restricted mobility also increased the need for specific foods and meal patterns, leading to food insecurity in the form of anxiety about getting the right foods at the right times. For example, taking insulin appeared to make those with diabetes more anxious toward the end of the month when their food ran low, because of the importance of eating regular meals, particularly right after taking insulin. Several commented that they ate whatever they could "scrape up" at that point, in order to "keep the insulin fed" and to "keep me from being sick." For others, the inability to afford low-sodium or other medically recommended foods appeared to contribute to feeling food insecure.

Previous Experience, World View, and Religion. The long, rich life experiences of the elderly contribute to their *perceived* food insecurity, tempering their impressions of the severity of their present situation. One rural white man said that he and his wife were more used to cutting back on food or going without than younger people because they had done so during the Depression. He implied that these practices might not be seen as symptoms of food insecurity by his peers. Similarly, many of the interviewees in both sites appeared extremely accepting of their current situation, even though it was less than desirable.

> [Meals] don't be what I want all the time, but I go ahead and eat it 'cause I know I got nothing else. . . . As long as my stomach's full, what's the difference. . . . As long as I can keep the insulin fed, that's all that matters.

In the words of another interviewee:

> When I went on public assistance I just made up my mind that if that's how much money I had, that's how much I had to live on, live on a lower budget. When you're on a limited budget you just have to do what you can do.

This acceptance may relate to having experienced much worse situations in the past. Several noted that life was much harder when they had young children to feed:

> If you can manage through raising the six kids, . . . I figured you can always get enough food, you know, 'cause many times we lived on just potatoes. . . . That's why I say it's never hard now when you think back to what you did have to go through when you had little ones.

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> Sometimes he was sick or out of work or something and we didn't have much money. . . . For quite a few years now we've been able to have food on the table and get along. It was harder when the kids were little.

For some, the bad experiences of the past helped them not only accept their situation but also not to worry about it. For others, however, previous bad experiences caused them to worry and take action early. One 79-year-old rural white woman commented: "If I have so much a month left over, that's what I spend [for food]. If I don't, I just go with what I've got, and I've got a cupboard full. Because people like me went through the Depression, they're always afraid they're going to go hungry sometime."

For many, previous experience and world view also affected their attitudes toward and willingness to use government food programs. Although for those who had had bad experiences or had negative attitudes toward government programs, this tended to reduce the availability of food, previous experience also helped to buffer the present experience of food insecurity through their extensive food management skills.

For some, perceived food insecurity was also affected by religious beliefs. Several in both the rural and urban areas said they never worried about their food situation because they believed in the Lord, or had faith that He would take care of them. Some gave specific examples of times when their food was low and the Lord helped them by sending an unknowing person over with food.

A related finding, with implications for measurement, was that a number of the elderly "prayed" but didn't "worry" about their food situation. When asked specifically if they ever worry about having enough food, four of the rural white elderly and three of the urban black elderly said that they never worry about their food situation, but they almost immediately said that they prayed about

their food situation. The way they talked about praying suggested that they had food anxiety, but they did not use the term "worry" nor did they admit to "worrying" as such. Two urban black women said:

> [I pray] when I ain't got nothing. God said He wouldn't let his people go hungry. . . . No [I don't worry], 'cause there's always something, always somebody, see, to help give you a hand.

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> I'm gonna talk to the Lord before I start worrying about anything, 'cause there's no need to worry, 'cause when you worry about you ain't got nothing to eat, and no money to buy nothing to eat, you go in there and you maybe go to sleep, you can wake up, that same thing is on your mind. So it don't do no good to worry about it. . . . I'm not gonna worry, 'cause I believe if there's anything that's gonna happen, by me worrying about it, it ain't gonna stop it, but maybe by me praying to the Lord about it, maybe He might have it come to pass. So there's two or three ways to look at them things.

Use of and Dependence on Food Programs. The use of both public and private food programs appeared to contribute greatly to food security in the elderly. Many of those interviewed felt fairly secure and did not worry about their food situation because they relied heavily on one or more food programs. The major food programs used by those interviewed were Food Stamps, food pantries (in the rural area), and the two senior nutrition programs, congregate meals and home-delivered meals (see Table 1). Without these programs, most would be experiencing more severe food insecurity, and some even hunger, due to their limited resources. As one rural white man explained, "As far as food, we never have a shortage of food. . . . What we have a shortage of is money."

Food Stamps. Food Stamps were used by about a third of the rural white and over half of the urban black elderly. Many of the rural white and several of the urban black elderly, including some who were at least somewhat food insecure, chose not to apply for Food Stamps even though they were eligible. The reasons for this varied between rural and urban residents.

Many rural whites were not willing to use Food Stamps because they associated them with "welfare," which was highly stigmatized. As one 73-year-old woman put it, "I can remember years ago that going on welfare was the worst thing that could happen to anyone on earth." Many grew up with

the attitude that helping oneself and not being dependent on government programs was extremely important. One 76-year-old woman said, “I kind of like to be independent. . . . If I can get along without them, I do.” One couple said that if things got bad, they would ask for help with heat and rent before they asked for Food Stamps, implying that the former was more acceptable.

Comments about Food Stamps by the urban black elderly, both those who received them and those who did not, were quite different. Unlike the rural white recipients, who (except for one) received from $44 to $115 per month, nine of the ten urban black elderly received Food Stamps of only $10 a month, probably because they also received rent subsidies. Although a few seemed very appreciative of the ten dollars, several said it was unfair because it was not enough, and one man said that Puerto Ricans got more than blacks. One 80-year-old woman commented, “The younger people are getting more. . . . When my husband was alive we weren’t getting but ten dollars worth of food stamps, and I’m still getting ten dollars worth of food stamps, which isn’t enough to buy nothing with. By the time you go down there and get two or three packages of meat, you don’t have nothing left to buy your staple food with.”

Of the urban black interviewees who did not receive Food Stamps, most had used them in the past but had decided that ten dollars’ worth was not worth the effort. One man, who used a cane and was not able to stand for long, complained about the repeated trips he had had to make to the Food Stamp office with further documentation, and the long lines he had had to stand in. A woman who was told she was not eligible thought it was because she lived in her own home with her grandson; another woman, a diabetic, was not getting them because she had moved: “I moved three or four times so I didn’t get no Food Stamps—I hope to be getting some next month. The ten dollars could get me some fruit. . . . The main thing I don’t have and can’t get is fruit. That’s what I really need and I can’t get it.” In stark contrast to those in the rural area, no urban resident mentioned the stigma of Food Stamps as a

reason they were not using them. Rather, some felt that they deserved more and that it was not fair they got so little. One 77-year-old woman commented:

> I just told them I don't have to have them . . . because you don't give enough. Ten dollars ain't enough to give nobody . . . food is too high. . . . They're mistreating older people and we're the ones that have worked all these years, 'cause they took money out of our paycheck and I think we're entitled to those Food Stamps or more to spend. . . . I used to pay taxes out of my check, and so the young folks is getting it, and we're not getting it. It's not fair to us. 'Cause we worked hard for that money.

Food Pantries. None of the urban black elderly were using food pantries on a regular basis, although several used them in emergencies. In contrast, many of the rural white elderly, including many who chose not to receive Food Stamps, used a food pantry monthly. Food pantries appeared to be much more accepted by the rural whites and to carry much less stigma than government programs such as Food Stamps, which are seen as using taxpayer money. Most of the rural elderly did not know that the volunteer-run food pantries are quite dependent on federal funds. Several commented that food pantries were more like the traditional and more acceptable concept of neighbors helping neighbors than were Food Stamps. When asked whether she had ever thought about getting Food Stamps, one woman, who had some food anxiety and got food regularly from a food pantry, said no, explaining, "This [pantry] is more friends and neighbors are helping you out, up there, but when you go to the, you know, you've got to go to the government, and ask for help—I don't want to owe them anything."

Senior Nutrition Programs. A number of the elderly in both sites regularly used either Congregate Meals or Home-Delivered Meals, and they seemed to rely on these senior nutrition programs to buffer their food insecurity. Again in contrast to Food Stamps, the senior nutrition programs were more acceptable to the rural whites, seemingly because these programs were targeted specifically to the elderly, which created a greater sense of entitlement. Elderly in both sites appreciated the voluntary and confidential nature of payment for the meals, saying that they paid the suggested amount when they could but paid less or nothing when they couldn't, having been told that

that was okay. Some paid back for these times later when they had the money. Several commented that they ate better than they would at home, and that they enjoyed the social aspect of eating with others:

> We just can't afford to get the real things that we really need and this way we know we've got at least one balanced meal . . . you not only get a good meal, but you have the company and see different people, and you get a lift. It makes me feel better. . . . There's so many of us that depend on that, you know.

Other Food Management Strategies. Many elderly used the term "manage" in describing how they made it on their limited incomes, and they described a number of management strategies that helped to buffer their food insecurity. In addition to using food programs, these strategies included budgeting, shopping practices (using coupons and sales and not buying on credit), food stretching, stocking up, and, in the rural area, home food production and preservation. Many appeared to be very proud of these skills, and talked about experiences in the past and more recently when these skills helped them get through a particularly difficult financial time.

Most of the elderly seemed to have well-developed budgeting skills and were able to state exactly how much their income was and how much their bills were. Most said they paid their bills at the beginning of the month when their Social Security check came, then determined how much they had left for food. As one rural white woman said, "Sometimes when there's five weeks in a month, you've got to think. . . . I try to put twenty dollars away for each Friday so I can at least get that much food." Another said, "I have enough for groceries every—I figure it out, you know, divide up what I have for the whole four or five weeks, whichever comes in the month. At the beginning of the month I know what I've got so it has to [stretch]."

Many of the interviewees spoke of "stretching" food. For example, one rural white woman said, "I just try to stretch what I have 'cause I know that the third of the month my security check will come," and an urban black woman said, "I've always managed to have food, plenty of food. It ain't what you make, it's what you try to stretch. See, I came from a poor family, raised in the country on a farm, and I know how to stretch from one time to another." Many mentioned "stretching" a small piece

of meat or a few chicken wings by making them into some kind of stew. One rural white woman was particularly proud of her food stretching skills, and frequently shared her ideas with the food pantry volunteers.

Many elderly stocked up with canned goods and sometimes frozen foods so that they at least had something for times when their money was "short." Some said they stocked up particularly in winter, when money was tighter because of fuel bills or when it was more difficult to get out to shop. One rural white couple would stock up in the fall when produce was cheaper, saving their Food Stamps over two months and buying eight 50-pound bags of potatoes. Not being able to stock up contributed to feelings of food insecurity and anxiety. One of the most food insecure of those interviewed, a homebound urban black woman whose family was not able to help her, told the interviewer, "I can't stock up." Even if the food they had stocked up might not be what they wanted or might not make a meal, at least they knew they had food in the house.

In the rural area, many of the elderly talked about gardening, canning and freezing, hunting, and raising small animals as food management strategies they had used in the past. Some still used these strategies. One couple commented, "We have eggs, we've got hogs, and a few chickens, and our son keeps us in fish, deer meat." Another couple kept chickens, which seemed to provide their major source of meat, along with what two food programs supplied. Some used to garden, but were physically no longer able to. One woman noted, "I like fresh fruit and vegetables, I miss them. Of course I always had a garden—this is what I miss." Some who could no longer garden received garden produce, either fresh or already canned, from friends or neighbors, or bought it cheaply and canned it themselves if they were still able to do so. One couple had frozen two bushels of string beans given to them by a neighbor.

Another strategy mentioned by several elderly was receiving food or meals as compensation for volunteer or low-pay work. Food obtained in this way seemed to be perceived as a benefit rather than a

handout, and thus was more acceptable to many. For example, several of the urban black elderly were "senior companions" to more aged or disabled elderly at Congregate Meals, helping them get and eat their meals. They received free meals and a small stipend in exchange for this service. One woman volunteered at a soup kitchen, from which she got most of her fruit and bread, although she could not eat full meals since they didn't conform to her diabetic diet. Another, who cared for the infants of teen mothers while they were in school, received lunch. One rural white man volunteered at a food pantry and sometimes brought food home.

Other strategies included getting extra food from Congregate Meals. For example, one said she was able to buy soup for a quarter to take home for the weekend and that when she was out of milk and couldn't get to the store she purchased half-pints of milk from the program. When food problems became more severe, respondents resorted to less acceptable food management strategies, such as borrowing money from children or other relatives, and in one case, from a pastor. Food pantries were used by some of the urban black elderly only when food and money got extremely low.

Availability of Family

The availability of family members was extremely important in preventing or minimizing food insecurity. This was particularly true when unexpected expenses arose, since family members could be called on for emergency help with food or money. Many elderly relied on family members to take them shopping or to do their shopping for them, to bring them food or meals periodically, and for some, to cook for them. The few elderly who had no children or none living nearby or available appeared to feel greater food anxiety. A wheelchair-bound urban black woman who was unable to prepare her own meals and had an aide only first thing in the morning, described how none of her family were able to come and fix her a meal in the evening, which sometimes meant she went without supper:

> [My granddaughter's now] working and she'll work at night, 2:30 till 10:00. She can't do it no more. . . . I don't have nobody. My older daughter—she can't come because she's on oxygen and she's in a badder fix than I is 'cause they only give her from May

> till six months to live. . . . And my baby daughter, she can't do nothing 'cause she has to work. She works and my other daughter lives way on the west side and she don't have no car, and she babysits to try to help herself. So I don't have no help. . . . I don't have nobody else I could call. My daughter-in-law, my oldest son's wife, she in the hospital. She's so sick—and he worries about his son—they give him six months to live. . . . We all just a whole family damned. It's a rough time for us. We can't help each other. . . . I have been hungry for a day or two, not just regular, but I have [been] when I just didn't have nothing to eat, you know, back—some days I don't have nothing and can't get nothing till somebody comes get me something or buys me. I be hungry for about a day or a half a day, but I be all right. I don't be hungry just all the time—sometimes I get hungry though. . . . It just makes you weaker, and sick. I just get sick. I just sit down somewhere, lay down in my chair.

Community Characteristics

The characteristics of the community in which the interviewees lived also contributed to their degree of food security. Neighbors are an important resource for many. Neighbors often checked in on those interviewed, provided transportation for them to go shopping or picked up items for them, took them to church (a potential source of emergency food or money), and sometimes volunteered at local food programs, making these more "friendly." Sometimes such neighbors were also elderly: in some of the urban apartment buildings for seniors where residents shared food or exchanged meals, and in the rural area, where one elderly woman who still drove regularly took an elderly neighbor with her when she went grocery shopping.

Since many of the elderly did not drive or could no longer afford a car, yet preferred to be independent and not face the uncertainty of relying on others, the availability of transportation services was critical to minimizing food insecurity. Limited transportation services specifically for the elderly were available in both sites. In the urban area, some used public buses. Proximity to low-priced grocery stores, a factor related to transportation, also affected food insecurity. Many of the elderly who did not drive or own a car would have preferred to walk to the grocery store rather than depending on others, but felt they had to depend on others in order to get to the larger, cheaper, but more distant stores.

Another community characteristic that affected food insecurity was the availability and specific characteristics of public and private local food programs. For example, in the rural county, a special program run by the Office for the Aging each week delivered a bag of groceries to the homebound elderly, rather than either frozen or hot prepared meals. Those who were homebound but could still cook (those homebound because of transportation constraints), seemed to much prefer receiving the groceries, perhaps because it increased their feeling of independence (some also said their cooking tasted better than the prepared meals).

The Nature of the Progression of Food Insecurity in the Elderly

A framework for the progression of food insecurity in the elderly was also derived, based on the descriptions of their experiences (see Figure 2). The majority, although not all of the elderly interviewed, perceived food insecurity as diagramed. Many said that they always had enough food and did not worry about their food situation, yet other statements suggested they were experiencing *some* degree of food insecurity, particularly in terms of inadequate diet quality and uncertainty of resources.

The progression begins with inadequate usual means of food acquisition (i.e., not having enough money for groceries), a risk factor that often leads to food insecurity. Food insecurity in turn is characterized by four increasingly severe stages: (a) compromised diet quality and variety, and a limited ability to obtain foods recommended for health problems, (b) anxiety or uncertainty about food resources and food management strategies, (c) having to eat meals that are not socially acceptable or

Figure 2 here

eating less, and (d) having to use emergency food management strategies such as borrowing money. If severe enough, this “food insecurity,” particularly the later stages, can lead to actual “hunger.”

Inadequate Usual Means. The inadequacy of the usual means of food acquisition appeared to be a major risk factor preceding food insecurity and was experienced by nearly all of the elderly interviewed. Many commented that once they stopped working (generally in low-wage jobs with no pension plans) and went onto Social Security, they lacked the money to meet their food needs. Many enrolled in food programs to help out and adopted other food management strategies. Some noted that they could no longer afford foods they could before, and some ran out of certain foods near the end of the month when their “money gets short.” Inadequate usual means of food acquisition included having less adequate means than what was perceived to be the norm, or having less than what they perceived as necessary. Sometimes this situation was due not just to limited resources but also to physical disabilities or transportation limitations. Whether this risk factor progressed to one or more of the stages of food insecurity depended in part on their use of usual management strategies. The following case study exemplifies a couple for whom the usual means of food acquisition is inadequate, yet they are food secure because of participation in food programs and home production of food.

Case Study: Food Secure, But Inadequate Usual Means of Food Acquisition

Frank, aged 86, lives with his 72-year-old wife, Myrtle, in a small run-down house on a dirt road in a very rural area. Money is very tight. Although their income, from Social Security and a small pension, is slightly too high for them to be eligible for Medicaid or Food Stamps, they do not have enough money for food because of all their bills and debts, primarily medical expenses they are still paying off from a car accident a year ago and two recent operations. Both have high blood pressure but they are not taking their medication because they have run out of the free samples from their doctor and they cannot afford to buy it themselves. Their roof leaks badly and their septic system is broken, and they are trying to get financial help from a local foundation to fix those. Some of their children live nearby, but none are able to help financially as they are often unemployed and are trying to take care of their own families.

Nonetheless, Frank and Myrtle do not appear to feel food insecure. They receive a weekly bag of groceries from the Office for the Aging's special Home-Delivered Meals grocery bag program, and they get food from the food pantry once a month. They still have an extensive garden and can and freeze a lot of produce. Frank still hunts and fishes with his sons, although not as much as he used to. These various programs and activities all help them to feel food secure, even though their usual means of food acquisition is inadequate. As Frank comments, "As far as food, we never have a shortage of food. We have canned goods. We have frozen stuff in the freezer. . . . So as far as food—we got enough food. . . . That's one thing. What we have a shortage of is money."

Compromised Quality. Within the experience of food insecurity itself, compromised diet quality generally appeared to be the earliest and, as perceived by the elderly, least severe stage of food insecurity. Many elderly said that they always had enough food to eat, but that they could not afford the quality or variety that they might like. Some did without foods such as meat when they could not afford them, as two urban black women commented:

> When you're used to it you just go ahead, and if you don't have it, the first thing is you say, well I don't have it, and I'll do without it . . . like meats—when I run out of meat. I just do without it.
>
> ***
>
> Sometimes I don't have no kind of meat. That's when I get sick 'cause they say diabetics should eat a portion of meat, and sometimes I don't eat nothing but just eat me some rice, put butter in it.

A number of the elderly commented that they could afford none or only a limited amount of the food items they were supposed to eat for a health condition, such as low-sodium foods for hypertension or fruits for diabetes. For some of the elderly, compromised diet quality included having to eat the same thing several days in a row, especially at the end of the month when their food was running low. Others, however, seemed to consider eating the same thing several days in a row normal for an elderly person living alone.

Food Anxiety. For many of the elderly, the inadequacy of their usual means of food acquisition and their resulting compromises in diet quality led to uncertainty or feelings of anxiety about their food resources and/or food management strategies. This appeared to be especially true for those who could not afford medically recommended foods and were concerned about the effect on their health, for those who took insulin and were concerned about needing to eat a meal soon after each shot, and for those who were physically disabled and dependent on others for food shopping and preparation. For example, one elderly black woman living alone and confined to a wheelchair had an aide only first thing each morning. At suppertime,

> I have to wait till some of my children come by and feed me. Sometimes they don't come by till eight or nine and I just be there. . . . Sometimes I get sick 'cause I take insulin. I have to take insulin in the morning and in the afternoon. . . . Last week it was after seven that I eat some days 'cause I didn't have nobody to cook me nothing to eat. My granddaughter can't do it no more. So I just don't know . . . I don't have nobody.

Even those who were not physically disabled were often anxious about their food situation because they were dependent on others (family, friends, neighbors, or home health aide) to take them shopping. In this stage, the interviewees continue to use their usual management strategies (budgeting, food stretching, gardening/canning), but they were uncertain if these would be adequate.

Socially Unacceptable Meals. The third stage, having to eat socially acceptable "meals," which might be thought of as an intrahousehold coping tactic, was experienced in recent years by only a handful of those interviewed. This stage includes eating cereals (oatmeal, cornmeal mush, pancakes)

for dinner because one is out of the foods and money to make a more balanced meal. This stage was sometimes caused by high or unexpected expenses, but some experienced it at the end of most months. This stage also includes having to cut down on how much is eaten, although only two of the respondents mentioned this. Although this stage appeared to be less acceptable and thus more severe for some respondents than the earlier stages, others accepted this management strategy. One urban

Case Study: Compromised Diet Quality and Food Anxiety

Essie Mae, a black woman in her mid-sixties, lives in subsidized family housing in the inner city. Her 22-year-old granddaughter and teenage grandson stay with her frequently, and shop for her. She has diabetes, for which she takes insulin, and had a stroke some years ago that left her partially disabled. Her money often runs short at the end of the month, and then she has to do without various fresh foods and meat, and eat whatever canned goods she has. At these times, she does not eat as well as she feels she should, although she does not go hungry. Both her diabetes and her disability contribute to her feelings of food anxiety.

Although she has a home health aide who comes twice a day and prepares her meals, being dependent on others for food acquisition and preparation makes her anxious that her money will not go as far as it would if she were still able to shop with coupons and go to the food pantry. Having diabetes makes her anxious about not eating the way she should, while taking insulin makes her especially concerned about making sure she always has enough to eat: “The end of the month, I start getting out of food . . . but I have to eat something, ’cause if I don’t eat behind my [insulin] shot, that shot will make you so sick, I just eat anything I can find during that time just to keep me from being sick.”

black woman said, “I buy grits, oatmeal, things like that. I can make a meal out of that, you know, as long as my stomach gets full, I just go on and don’t worry about it.” Nonetheless, this stage was classified as more severe than the earlier stages of compromised quality and anxiety because most who experienced it characterized it as more extreme.

Use of Emergency Strategies. The next stage of food insecurity involved asking for help and having to admit to others that one had a food problem. This involved using emergency food management strategies beyond one’s usual means. Such “out-of-household coping tactics” generally appeared to be less acceptable and to be used only when intrahousehold strategies were no longer

adequate. These emergency strategies included asking for money or food from children or other relatives (or in one case from a pastor) and, for those in the inner city, getting emergency food from a food pantry (in the rural county, use of food pantries appeared to be seen as a usual, not an emergency, management strategy). As one urban black woman noted:

> Sometimes I don't have the food in the house, really don't. When I get down that bad, I ask them [food pantry] for something. . . . They give me something to help me. . . . Senior Citizens can't get it but once every three months. . . . I come up here one time and didn't get it, but I made it. . . . I eat rice. I love rice, and I'll eat rice. . . .

Case Study: Socially Unacceptable Meals and Use of Emergency Strategies

Ravina is a 71-year-old black woman who lives alone in an inner-city apartment. Although she eats lunch at a Congregate Meals program two or three times a week (and gets paid $6.40 every two weeks for cleaning tables there), she has chosen to no longer receive the $10.00 of Food Stamps she used to because it's not worth it. Her son takes her shopping but expects her to share some of her money with him. She often runs short on various food items at the end of the month, exacerbating her already compromised diet quality. Although she insists that she does not worry about her food situation, she does pray "when I ain't got nothing," and her diabetes seems to make her especially concerned about not having enough food: "I have to eat because I got sugar . . . 'cause the nurse said today, you gotta drink juice and stuff, if you don't you'll fall out."

If her food is running low just before her Social Security check is due, she tries to get by on her own by drinking water and juice or eating bread and milk or a peanut butter sandwich until her check comes. Although she does not like to ask for help, if these intrahousehold strategies are not enough, she has several emergency strategies: eating at a friend's house and/or using the food pantry. Running out of food "just makes me feel lost, that's all, just lost . . . lost and all alone by yourself and you ain't got nothing, so who you gonna ask. . . . But I got friends . . . I don't [like to ask], oh no. If I'm hungry I'll have to ask them. . . . I don't bother if I can get by—and my check is close—I don't bother."

Actual Hunger. The last stage was actual hunger, which was described as having no food at all in the house and included having hunger pangs. Only one interviewee admitted to actually "going hungry" in recent years, although another said at the end of the month she often got "not starving hungry, but I would get a little hungry." When asked what "hunger" meant in relation to the idea of hunger in America, most talked about small children and homeless people having no food; they did not

appear to believe that their food problems were severe enough to be considered "hunger." It was clearly a distinct stage, however, which quite a few had experienced in the past, when they were children during the Depression or when they had children at home and obtaining enough food was more difficult. Several discussed their past experiences, such as the following:

> There were times when we didn't have food in the house, even peanut butter, you know for the kids. That was bad. . . . Many times we lived on just potatoes. . . . It was hard. We went without then. [Would you say at that time you were hungry?] Yeah, we were at that time. It was hard because it was hard for me to. . . . find enough in the house to make up [a meal?] to keep food for the kids. . . . They were little and they lived on oatmeal and things like that that stretched.

Categorization of the Sample by Food Insecurity Stage

To further examine this conceptualization of the progression of hunger and food insecurity, the thirty-five elderly participants were categorized into one of the stages in Figure 2, based on their in-depth interviews. Approximately half were deemed food secure (with three-quarters of these being rural). Many relied heavily on food programs, which was what made them food secure. Nearly all the others (N = 12) experienced compromised diet quality, and anxiety or uncertainty about their food resources and food management strategies. Finally, almost half of those experiencing food anxiety (N = 8) also experienced at least one of the more severe stages—socially unacceptable meals, use of emergency strategies, and/or actual hunger—with smaller numbers (N = 4) in the most severe of these stages. Most of these were urban black elderly, and only two, both urban black, were experiencing actual hunger. With few exceptions, those in the more severe stages were also experiencing all of the less severe stages.

Commonly Used Measures of Food Insecurity: Consistency with Conceptualization

The follow-up telephone interviews with twenty-four elderly were intended to examine whether food insecurity in the elderly could be assessed directly, and specifically, whether commonly used measures were perceived by the elderly in a manner consistent with the underlying conceptualizations

and whether they were perceived as intended. The in-depth interviews suggested that direct assessment of food insecurity in the elderly might not be possible, because they might be unwilling to admit directly to having food problems or might use other terminology, such as praying, rather than admit to worrying about food. However, many of the elderly did answer the food insecurity items positively in the telephone interviews, suggesting that researchers can use these items to assess food insecurity directly in the elderly, although some wording issues remain.

The number of positive responses to each of the items commonly used to measure hunger and food insecurity are shown in Table 2. Although the numbers are small, in general the items appeared to be answered in a manner consistent with the elderly respondents' conceptualization of hunger and food insecurity and its progression.

For the Cornell-Radimer items, more answered positively to the diet quality items (both the household and individual levels) and the household-level food anxiety and quantitative items than answered positively to the individual-level quantitative items. Thus, it seems that food and diet quality issues are a major component of food insecurity in the elderly. In addition, in the Cornell-Radimer measure, there appears to be less of a difference between household- and individual-level items pertaining to diet quality among the elderly than among younger women with children, suggesting that this distinction is less relevant for the elderly. However, in regard to quantity of food, this distinction between household and individual levels was still prominent, with only a small number of elderly reporting not eating because of lack of food. Approximately half of those reporting problems with amount of food at the household level reported eating less than they thought they should because of lack of money for food.

The Urban Institute items were answered positively by many fewer than the Cornell-Radimer or CCHIP items, while the Nutrition Screening Initiative's food insecurity item was answered positively

TABLE 2
Positive Responses to Telephone Survey of Commonly Used Hunger and Food Insecurity Items

	Rural White (n=12)	Urban Black (n=12)	Total (n=24)
Cornell-Radimer Items			
Household Level—Food Anxiety Component			
I worry whether my food will run out before I get money to buy more.	2	6	8
I worry about whether the food that I can afford to buy for my household will be enough.	1	9	10
Household Level—Qualitative Component			
We eat the same thing for several days in a row because we only have a few different kinds of food on hand and don't have money to buy more.	2	8	10
Household Level—Quantitative Component			
The food that I bought didn't last and I didn't have money to buy more.	0	9	9
I ran out of the foods that I needed to put together a meal and I didn't have money to get more.	2	7	9
Individual Level—Qualitative Component			
I can't afford to eat properly.	2	9	11
Individual Level—Quantitative Component			
I am often hungry but I don't eat because I can't afford enough food.	0	1	1
I eat less than I think I should because I don't have enough money for food.	0	4	4
In the past year, did you lose weight because there wasn't enough food?	0	0	0
In the past year, have you had hunger pangs but couldn't eat because you couldn't afford food?	0	0	0

(table continues)

TABLE 2, continued

	Rural White (n=12)	Urban Black (n=12)	Total (n=24)
Cornell-Frongillo Item			
Did you ever not eat for a whole day because you had no food or money to buy food?	0	0	0
NSI Food Insecurity Item			
I don't always have enough money to buy the food I need.	3	10	13
CCHIP Items			
Household Level			
Thinking about the past year, did you and your household ever run out of money to buy food?	4	8	12
Did you ever rely on a limited number of foods to eat because you were running out of money to buy food?	3	5	8
Individual Level			
Did you ever cut the size of meals because there was not enough food in the house?	2	6	8
Did you ever skip meals because there was not enough food in the house?	0	3	3
Did you ever eat less than you felt you should because there was not enough money for food?	0	7	7
Urban Institute Items			
In the past year, have you had to choose between buying food and paying rent or utility bills?	1	2	3
In the past year, have you had to choose between buying food and buying medications?	1	1	2

(table continues)

TABLE 2, continued

	Rural White (n=12)	Urban Black (n=12)	Total (n=24)
In the past year, have there been days when you had no food in the house and no money or Food Stamps to buy food?	0	4	4
In the past year, have you skipped meals because you had no food in the house and no money or Food Stamps to buy food?	0	2	2
USDA Items			
Thinking about the past year, which of the following statements best describes the *amount* of food eaten in your household:			
Enough food to eat	11	5	16
Sometimes not enough to eat	1	6	7
Often not enough to eat	0	1	1
(If enough) Over the past year, did you have:			
Enough and the kind of food you wanted to eat	7	2	9
Enough but not always the kind of food you wanted to eat	4	3	7

Note: Results based on telephone interview with twenty-four low-income elderly.

by slightly more. None answered positively to the Cornell-Frongillo item of not eating for a whole day. As far as the USDA questions, one-third of the sample said they sometimes or often did not have enough food to eat, while two-thirds said they had enough. Of those who had enough, about half said they did not always have the kind of food they wanted. Across all of the measures, many fewer rural white than urban black answered the food insecurity items positively. This is consistent with the categorization based on their in-depth interviews, and may reflect the greater use of food programs by the rural white elderly in this sample compared to the urban black elderly.

Commonly Used Measures: Consistency with In-Depth Interviews and Interpretation Difficulties

Food insecurity scores for each of the commonly used measures tested were compared to each interviewee's categorized stage of food insecurity based on their in-depth interview. The results are shown in Table 3.

The majority of those who, on the basis of their in-depth interviews, were deemed food secure were also deemed food secure based on each of the tested measures. However, there were a number of inconsistencies, in both directions. A review of the categorization decisions made from the in-depth interviews for cases that were inconsistent with the Cornell-Radimer or CCHIP measures explains some of the inconsistencies. For example, one urban black man was categorized as food secure based on his in-depth interview because he said he never worried about his food situation and because he did not talk about having to compromise his diet quality. However, his management strategies included borrowing money from his children and buying food on credit, both of which would have put him into the category "use of emergency strategies." He was not put into this category because he did not seem to have the earlier stages and because these latter strategies did not appear stressful to him. However, he answered the Cornell-Radimer and CCHIP items as being food insecure, so perhaps these strategies should have been used to categorize him as food insecure. Interestingly, he answered the

TABLE 3
Participants' Food Insecurity Score

Food Insecurity Score, Stages based on:	*Food Insecurity Stage Based on In-Depth Interview* Food Secure (n = 12)	Food Insecure: Less Severe Stages (Quality, Anxiety) (n = 8)	Food Insecure: More Severe (n = 4)
Cornell-Radimer[a]			
Secure	9	1	0
Household insecure	2	6	1
Individual insecure	1	1	3
CCHIP[b]			
Secure	9	2	0
Insecure	3	6	4
Urban Institute[b]			
Secure	11	6	1
Insecure	1	2	3
USDA			
Enough and kind	6	3	0
Enough, not kind	4	3	0
Not always enough	2	2	4
NSI-money for food			
Enough	8	2	0
Not always enough	4	6	3

Note: Results based on a comparison of food insecurity assessed by an in-depth interview and several quantitative measures assessed in a followup telephone survey.

[a]Secure: answered "not true" to all items. Household Insecure: answered sometimes or often true to one or more household items or to the individual qualitative item. Individual Insecure: answered sometimes or often true to one or more individual items.

[b]Secure: answered "no" to all items. Insecure: answered "yes" to one or more items.

Cornell-Radimer “worry” questions positively, even though in the in-depth interview he said he did not worry.

Similarly, two urban black women were categorized as food secure based on their in-depth interviews but as food insecure based on their responses to the Cornell-Radimer items. One woman lived with her daughter and son-in-law, which made her relatively food secure; but she may have felt food insecure because, when they were gone during the day, she was not allowed to cook (she had fallen asleep several times while using the stove). The other woman seemed food secure given her statement that she never worried about her food situation because she relied on the Lord. Yet she had no children and relied on friends for food shopping and sometimes for a monetary loan, which suggests some food insecurity.

A case inconsistent in the opposite direction was an urban black woman who was half-paralyzed and therefore very dependent on others both for food acquisition and preparation. She expressed compromised diet quality and food anxiety in her in-depth interview, yet neither the Cornell-Radimer nor the CCHIP items (which she answered negatively) appeared to pick up her specific feelings of food insecurity.

Other comments made during the telephone interviews also suggested some interpretation problems. (A summary of the interpretation problems for each measure follows.)

In general, the Cornell-Radimer statements appeared to be well understood. Although the qualitative study suggested that some respondents who appeared to have food anxiety would not answer positively to a “worry” statement because they “prayed” but did not worry, this did not turn out to be the case. One woman, for example, answered the first worry item as sometimes true, but then added “but mostly I don’t let that worry me because I pray.”

Likewise, the CCHIP questions appeared to be generally well understood. The first item, running out of money to buy food, was interpreted by most to mean not having food as well as not

having money to buy food, but a few interpreted it as not having any money left to buy food (e.g., at the end of the month), even though they still had some food in the house. This may explain some of the inconsistencies shown in Table 3. In addition, some respondents seemed to be thinking about the distant past, not just the past year, when they answered the questions, even though "in the past year" was emphasized.

The USDA question regarding not always having the kind of food wanted was interpreted somewhat differently by different respondents. Although most did not include luxury foods, a few spoke of not having the "taste they felt like" or not the exact types of food they wanted all the time. One said she always has the kind of food she wants because she is not picky—she makes herself want whatever she has. Responding to the checklist of five possible reasons why people don't always have enough food (not shown in Table 2) was difficult for many. The items sometimes had to be reread as questions in order to be understood. "No working stove" and "no working refrigerator" were especially difficult to comprehend.

The four Urban Institute questions generally appeared to be clearly understood by respondents, although there were a few difficulties. A few of the urban blacks had difficulty with the term or concept "choose." In addition, several (both urban and rural respondents) gave answers somewhat inconsistent with statements they had made in their in-depth interviews. For example, several who said "no" to whether they had to choose between buying food and buying medications had said in their in-depth interviews that they often did not take prescribed medication because they could not afford it. Perhaps they felt the choice they were making was between these medicines and other bills, not between medicine and food. Sometimes this may have been due to obtaining many foodstuffs through nonmonetary means, such as food programs.

Other difficulties with the Urban Institute questions included: (a) "paying rent" did not apply to rural white elderly who owned their own homes (perhaps rephrasing this as "paying rent or mortgage"

or “paying rent or property taxes” would be better), (b) many were on Medicaid so they did not pay for their medications or had most of their medical expenses paid by Medicare, by EPIC (a special state program to supplement prescription medicines for the low-income), or by other health insurance, and (c) some commented that they were not on Food Stamps when asked the third question, although most were able to answer the question after it was repeated.

Overall, misinterpretations of the various items in the telephone questionnaire suggest that (a) the elderly have difficulty with statements or questions that contain a number of different concepts or phrases, especially if they are lengthy; (b) statements seem more difficult to answer than questions when read over the telephone, at least until the method is understood; (c) some of the words or phrases were not those used by respondents, particularly the black elderly; and (d) response fatigue, which created a pattern of responses unrelated to the questions, may be a special problem for some of the less-educated elderly who might not be able to concentrate on listening and responding to a lengthy series of similar questions.

CONCLUSIONS

The conceptual framework of food insecurity that emerged from the descriptions of hunger and food insecurity by the elderly is similar to those, proposed by others, that focused on families with children (Radimer et al. 1992; Wehler et al. 1992), except that certain aspects are more prominent or specific to the elderly. In particular, two features distinguished the experience of food insecurity in the elderly from that of other groups: the major role of health problems and physical disabilities as factors leading to food insecurity, and their larger accumulation of life experiences, which affected their perception of their food insecurity status. In addition, religion appeared to play a more prominent role in the lives of the elderly, and they appeared to have a greater network of services and support (home

health aides, elderly meal programs, family, etc.) than younger women. Many of the elderly interviewees depended heavily on government food programs.

Among the elderly, the nature of the experience of food insecurity varied, but the dominant components were compromised diet quality and anxiety or uncertainty about food resources. About half of those experiencing these less severe stages of food insecurity were also experiencing the more severe stages of eating socially unacceptable meals (including eating less) and using emergency food management strategies such as borrowing money for food.

The results of the telephone follow-up survey with commonly used items to measure hunger and food insecurity generally supported this conceptualization of the progression of hunger and food insecurity in the elderly. In general, elderly who answered positively to items indicative of more severe food insecurity also answered positively to items representing less severe food insecurity.

Although the qualitative nature of this study was a strength given its purpose, the study was limited by having only one in-depth interview per household, particularly given the challenges of building rapport, the difficult subject matter of hunger, and the difficulties some respondents had with hearing and understanding the questions. However, only some of these difficulties would have been overcome with a second in-depth interview, and the follow-up telephone interview with most of the respondents did serve as an opportunity to check on the validity of earlier information.

In terms of generalizability, most of the results probably apply to those elderly with severely limited resources, like those who made up the study sample. However, such individuals constitute a smaller proportion of the elderly population than they did ten or twenty years ago. In 1990, 12.2 percent of the elderly were below the poverty threshold, compared to around 27 percent in 1970 (Rendall 1994). While the numbers of “near-poor” elderly are large (26.3 percent of elderly were below 150 percent of poverty in 1990, and it has been suggested that the poverty level for the elderly, which is 8

percent lower than that for the nonelderly, is too low), it is not clear whether the results of this study apply to “near-poor” elderly. However, these results do seem applicable to the poorest of the elderly.

Implications for Measurement and Policy

Several findings may be pertinent to the development or use of quantitative survey instruments to measure hunger and food insecurity in the elderly. First, hunger and food insecurity can be measured directly in the elderly. The commonly used measures tested here should work fairly well in distinguishing those who are food secure, those who are experiencing less severe food insecurity, and those experiencing more severe food insecurity. However, the interviewer perceived a reluctance by many survey participants, particularly those in the rural area, to report problems with food. Therefore, the prevalence of food insecurity may be underestimated by using the direct measures of hunger that have been used in other population groups. The methods used in this study do not allow us to determine the extent of possible underestimation.

Second, it is important to assess participation in food assistance programs in order to understand the meaning of responses to items for measuring food insecurity, and for determining the impact of cuts or changes in such programs on the prevalence of food insecurity. These programs allowed many elderly who would otherwise have been food insecure to be food secure.

Furthermore, while it may not be necessary to measure health problems and disability among the elderly to directly measure and estimate the prevalence of hunger and food insecurity, it is absolutely necessary to do so to develop programs and policies that will address these issues. This study uncovered four distinct ways in which health problems and disability may contribute to hunger and food insecurity in the elderly.

Appendix A
Interview Guide: Elderly Food Situations

1. Can you tell me about how you usually eat on a typical day, and when you eat?

   Let's start with when you first get up. . . . Weekends different?

2. What would you say having a balanced meal is for you?

   How often are you able to get a balanced meal?

   Can you tell me about a time when you were not able to get a balanced meal?

3. How do you generally get the food you eat? (e.g., shopping, HDM, Congregate)

   Does anyone help you get your food (either regularly or occasionally)? (e.g., transportation, money, just in winter?, only if a problem?. . . .)

4. Do you usually prepare your own meals? Does anyone help you?

5. Does anyone else ever eat with you, such as a child or grandchild?

   Do you ever eat at someone else's house?

In many people's lives, there are times when they have difficulty getting enough food. For example, money is tight, or they have a health problem, or they can't get to the store.

6. Can you tell me about a time when you had difficulty getting enough food? Please tell me about that situation (see prompts below).

   How did your meals or the way you ate change during that time?

   During that time, did you ever not have enough to eat?

   Did you ever go a whole day without eating?

   Did you ever come close to not having enough to eat?

7a. Can you tell me about some of the things going on at that time, when you had difficulty getting enough food?

- what led to it, how did it begin? (resource-related? health-related? both?)

Probe: Do you always have enough money to buy the food you need, or do you sometimes have difficulty being able to afford enough food?

- health (physical impairment, financial burden, absence of spouse)
- family situation (e.g., loss of spouse, adult child moved away)
- employment (e.g., loss of wages by retirement or other)
- housing (e.g., moved, rental increase)

- eating (what/how did you eat, how differed from usual)
- were you able to get a balanced meal?
- how were your meals different than when you have plenty to eat?

- emotional **(how did you feel about the situation)**

- physical (how did you feel physically, did it affect you physically?)
- did you lose weight? have hunger pangs?

- what did you do? (family, friends, church, HDM, CM, food pantry. . . .)
- social/private services sought/used (DSS, SSI, food pantry, other)
- why tried/not tried? why use/don't use now?

7b. What words would you have used to describe yourself during that time?

Would you have described yourself as being "hungry" or "going hungry"?

When you hear the term "going hungry," what comes to your mind?

8. (If discussed the past) Can you tell me about a time *in more recent years* when you had difficulty getting enough food? (use prompts above, 7a & 7b)

How did your meals or the way you ate change during that time?

During that time, did you ever not have enough to eat?

Did you ever go a whole day without eating?

Did you ever come close to not having enough to eat?

9. When you think about those times when food was short, do you ever think that could happen again? What do you feel when you think about that?

10. What are some of the things you do to make sure you always have enough food to eat?

11. [You said sometimes money is short.] Can you tell me about a time when you did not have enough money to pay for everything you needed? What did you do? Did you buy different foods than usual? How did your meals change?

    Have you ever had to choose between buying food and paying your bills, because you didn't have enough money for both? (If yes) What did you do?

    Have you ever had to choose between buying food and buying medications?
    (If yes) What did you do?

12. Reports show that there are many hungry people in the U.S., even right around here. What do you think that means? Do hungry people have a hard time getting enough food, or no food at all, or what?

    Have you ever known someone who's gone hungry? Please tell me about them. What did they do? How did you feel about that?

    When people don't have enough to eat, what should they do? When do you think people should ask for help?

13. When you think about the kinds of things that worry you, what kinds of things come to mind?

    How does getting enough food compare to these?

    If you could do one thing to make your life easier right now, what would it be?

Appendix B

Elderly Food Insecurity Telephone Questionnaire

ID No. _____ 1st Name _____ Date _____

Introduction: This is Wendy Wolfe from Cornell University in Ithaca. I visited you back in _____ to talk about your food situation. How are you doing? The reason I'm calling is I'm wondering if I could ask you a few more questions, just over the phone. Am I calling at a good time? Actually—I have a questionnaire that we have developed with a series of short questions to find out about people's food situations. We'd like to use the questionnaire to talk to older people in general, so first we'd like to make sure that the questions make sense to people like yourself. The questions mostly have yes or no responses and your answers will be kept completely confidential like before. We just want to see if the questionnaire makes sense to you. It only takes about ten minutes to do. So I'm wondering if you'd be willing to let me ask you the questions, and if so, whether I can do it now or whether I should call back another time. Before I start, I should tell you that some of the questions may seem similar to each other, but I really need you to try to answer every question, even if you feel it does not apply to you. If you're not sure how to answer a question, please answer it as best you can. I'll begin now.

NSI "Determine Your Nutritional Health" Checklist for Older Adults

First I'm going to read you a series of statements. Please tell me whether each statement is true for you or not true for you—Answer "yes" if it is true for you, "no" if it is not true for you.

1. I have an illness or condition that made me change the kind and/or amount of food I eat.
   [ ] Yes
   [ ] No
   [ ] DK

2. I eat fewer than 2 meals per day.
   [ ] Yes
   [ ] No
   [ ] DK

3. I eat few fruits or vegetables.
   [ ] Yes
   [ ] No
   [ ] DK

4. I eat few milk products.
   [ ] Yes
   [ ] No
   [ ] DK

5. I have 3 or more drinks of beer, liquor, or wine almost every day.
   [ ] Yes
   [ ] No
   [ ] DK

6. I have tooth or mouth problems that make it hard for me to eat.
   [ ] Yes
   [ ] No
   [ ] DK

7. I don't always have enough money to buy the food I need.
   [ ] Yes
   [ ] No
   [ ] DK

8. I eat alone most of the time.
   [ ] Yes
   [ ] No
   [ ] DK

9. I take 3 or more different prescribed or over-the-counter drugs a day.
   [ ] Yes
   [ ] No
   [ ] DK

10. Without wanting to, I have lost or gained 10 pounds in the last 6 months.
    [ ] Yes
    [ ] No
    [ ] DK

    (If yes) Was that a gain or a loss? ____ Gain ____ Loss

11. I am not always physically able to shop, cook, and/or feed myself.
    [ ] Yes
    [ ] No
    [ ] DK

Now I'm going to ask you a few questions.

12. How many meals do you usually eat each day?

    Number of Meals _____

Urban Inst. Questions

13. In the past year, have you had to choose between buying food and paying rent or utility bills?
[ ] Yes
[ ] No
[ ] DK

14. In the past year, have you had to choose between buying food and buying medications?
[ ] Yes
[ ] No
[ ] DK

15. In the past year, have there been days when you had no food in the house and no money or Food Stamps to buy food?
[ ] Yes
[ ] No
[ ] DK

16. In the past year, have you skipped meals because you had no food in the house and no money or Food Stamps to buy food?
[ ] Yes
[ ] No
[ ] DK

Cornell/Radimer Items

Now I'm going to read you a series of statements that people have made about their food situations. As I read each statement, please tell me whether the statement is often true, sometimes true, or not true for you and your household, *thinking about the past year*.

17. I worry whether my food will run out before I get money to buy more.
[ ] Often true
[ ] Sometimes true
[ ] Not true

18. I worry about whether the food that I can afford to buy for my household will be enough.
[ ] Often true
[ ] Sometimes true
[ ] Not true

19. The food that I bought just didn't last, and I didn't have money to get more.
[ ] Often true
[ ] Sometimes true
[ ] Not true

20. I can't afford to eat properly.
[ ] Often true
[ ] Sometimes true
[ ] Not true

21. I ran out of the foods that I needed to put together a meal and I didn't have money to get more food.
[ ] Often true
[ ] Sometimes true
[ ] Not true

22. I/we eat the same thing for several days in a row because I/we only have a few different kinds of food on hand and don't have money to buy more.
[ ] Often true
[ ] Sometimes true
[ ] Not true

23. I am often hungry, but I don't eat because I can't afford enough food.
[ ] Often true
[ ] Sometimes true
[ ] Not true

24. I eat less than I think I should because I just can't afford enough food.
[ ] Often true
[ ] Sometimes true
[ ] Not true

USDA Food Sufficiency Questions

25. Thinking about the past year, which of the following statements best describes the *amount* of food eaten in your household—enough to eat, sometimes not enough to eat, or often not enough to eat?
[ ] Enough food to eat [TO 25A]
[ ] Sometimes not enough to eat [TO 25B]
[ ] Often not enough to eat [TO 25B]
[ ] DK

25a. (If enough food) Over the past year, did you have enough AND the kind of food you wanted to eat, or did you have enough BUT NOT ALWAYS THE KIND of food you wanted to eat?
[ ] Enough and the kind you wanted
[ ] Enough but not always the kind you wanted [**TO 25B**]
[ ] DK

25b. (If sometimes/often not enough food or if enough but not the kind they want) I'm going to read you some reasons why people don't always have enough to eat or don't always have the kind of food they want. For each item, please tell me whether or not it is true for your household.

	YES	NO	DK
Not enough money for food	[ ]	[ ]	[ ]
Too hard to get to the store	[ ]	[ ]	[ ]
No working stove	[ ]	[ ]	[ ]
No working refrigerator	[ ]	[ ]	[ ]
Not able to cook because of health problems	[ ]	[ ]	[ ]

CCHIP Items

The next questions just have yes or no answers. Please answer yes or no to each, again *thinking about the past year*.

26. Thinking about the past year, did you and your household ever run out of money to buy food?
[ ] Yes
[ ] No
[ ] DK

26a. In how many months in the past year did this happen?

Number of months _____

26b. In how many days in the past month did this happen?

Number of days _____

27. Did you ever cut the size of meals because there was not enough food in the house?
[ ] Yes
[ ] No
[ ] DK

28. Did you ever skip meals because there was not enough food in the house?
[ ] Yes
[ ] No
[ ] DK

29. Did you ever rely on a limited number of foods to eat because you were running out of money to buy food?
[ ] Yes
[ ] No
[ ] DK

30. Did you ever eat less than you felt you should because there was not enough money for food?
[ ] Yes
[ ] No
[ ] DK

31. Did you ever not eat for a whole day because you had no food or money to buy food?
[ ] Yes
[ ] No
[ ] DK

(If yes) For about how many days did you not eat for a whole day? ____

32. Sometimes people lose weight because they don't have enough to eat. In the past year, did you lose weight because there wasn't enough food?
[ ] Yes
[ ] No
[ ] DK

33. In the past year, have you had hunger pangs but couldn't eat because you couldn't afford food?
[ ] Yes
[ ] No
[ ] DK

Okay, those are all the questions—thank you.

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