

Chapter One

Introduction

This report describes the nutrition and health characteristics of participants and nonparticipants in the Food Stamp Program (FSP) using data from the Third National Health and Nutrition Examination Survey (NHANES-III).¹ The NHANES survey is the primary source of information used in monitoring the Nation's nutrition and health status. NHANES-III was completed between 1988 and 1994 and provides data for a large nationally representative sample of individuals.²

The report compares and contrasts characteristics of FSP participants and two groups of nonparticipants: low-income individuals who were income-eligible for the FSP (household income at or below 130 percent of the Federal poverty guideline) and higher-income individuals who were not income-eligible for the FSP (household income above 130 percent of poverty).

A broad array of measures is used to describe the nutrition and health characteristics of FSP participants and nonparticipants. Nutritional status is examined through measures of dietary intake, body weight, selected nutritional biochemistries, and bone density. Important health-related behaviors are also examined, including breastfeeding and other infant feeding practices, physical activity, children's television viewing

habits, and alcohol and tobacco consumption. Health status is assessed on the basis of self-reported and physician-assessed general health status, the prevalence of chronic disease, risk of coronary heart disease, pregnancy and childbirth history, birth characteristics, other measures of child health, and dental health. Finally, data on health insurance coverage and use of regular health care providers are used to assess access to health care services.

This research was not designed to assess program impacts or in any way attribute differences observed between FSP participants and either group of nonparticipants to an effect of the program. Rather, it was designed to establish a baseline from which to monitor the nutrition and health characteristics of FSP participants and nonparticipants over time and to generate questions and hypotheses for future research. The data presented in this report provide useful background information for researchers interested in studying the nutrition and health characteristics of low-income populations and/or the impact of participation in food assistance programs, or other variables, on nutrition and health characteristics. The data also provide important insights for individuals who plan and implement nutrition or health programs for low-income individuals.

This introductory chapter provides an overview of the FSP as well as a brief description of the NHANES-III data and the general approach to the analysis. The six chapters that follow present findings on the nutrition and health characteristics listed above. Details on data and methodology may be found in appendices referenced throughout the report.

¹Similar reports have been prepared for WIC participants and nonparticipants (Cole and Fox, 2004a), school-age children (Fox and Cole, 2004), and older adults (Cole and Fox, 2004b).

²Beginning in 1999, NHANES became a continuing survey, without breaks between data collection cycles. Similar sampling and data collection procedures are used, although at least two years of data are necessary to have adequate sample sizes for subgroup analyses (Flegal et al., 2002). Data for the first two continuous years of the ongoing NHANES (1999-2000) have been released since the time the tabulations presented in this report were prepared. Data for subsequent years are expected in mid-2005.

The Food Stamp Program

The FSP is the cornerstone of the Nation's nutrition safety net. In FY 2002, the FSP accounted for about 54 percent of the \$38 billion Federal expenditure for food assistance and nutrition programs (FANPs) and served more than 19 million participants per month (USDA/FNS, 2003a). The FSP differs from other FANPs in its universality—it is an entitlement program that bases eligibility solely on financial need. All other FANPs base eligibility at least in part on membership in a specific demographic group. (For example, participation in the National School Lunch Program is limited to school-age children and participation in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is limited to infants, children under 5 years of age, and pregnant and postpartum women). As a result, the FSP is available to essentially all financially needy individuals and serves a diverse array of low-income citizens.

The goal of the FSP is to increase a household's food purchasing power by providing coupons or electronic benefits that can be used at most retail grocery stores.³ Unlike the other major FANPs, the household rather than the individual is the recipient and is the unit considered in determining eligibility and benefit amounts. The household includes all persons living together in a dwelling who normally purchase food and prepare meals as a unit. Eligibility is determined on the basis of the pooled income, resources, and expenditures of all members of the household. Elderly and disabled individuals who cannot prepare and purchase food because of a substantial disability may apply as a separate household, as long as the pooled income of the remainder of the household is less than 165 percent of poverty. Monthly benefit levels

increase with the number of people in the household, but not at a flat rate per person.

Program Eligibility

To be eligible for the FSP, a household must meet certain financial, work-related, and categorical requirements. Financial requirements include a *gross income limit* of 130 percent of poverty, a *net income limit* (gross income less allowable deductions) of 100 percent of poverty, and a *countable assets limit* of \$2,000. Households with elderly or disabled members are not subject to the gross income limit, are eligible for increased deductions for medical expenses and shelter costs, and have a countable assets limit of \$3,000.

Recipients of Temporary Assistance for Needy Families (TANF), Supplemental Security Income (SSI), and general assistance are deemed to be income-eligible regardless of income and assets. Work-related eligibility conditions require certain household members to register for work, accept suitable job offers, and comply with State welfare agencies' work or training programs. Finally, a few groups are categorically ineligible for the FSP. These include strikers, most persons who are not citizens or permanent residents, postsecondary students, and people living in institutional settings.

Program Participation

Because the FSP is available to most people who meet income and resource standards, the households that participate in the program are quite diverse and represent a broad spectrum of the needy population (Rosso, 2003). In FY 2001, almost all FSP participants lived in poverty. The gross monthly income of 89 percent of FSP households was less than or equal to 100 percent of the poverty guideline. More than half of all FSP households had incomes that were less than or equal to 75 percent of the poverty guideline and one-third had incomes that were less than or

³FSP benefits can be used only to purchase food or seeds and plants used to produce food.

equal to 50 percent of the poverty guideline (Rosso, 2003).

Administrative data for FY 2001 (Rosso, 2003 and Tuttle, 2002) indicate that the vast majority (88%) of FSP households contained either a child, an elderly person (60 or older), or a disabled person. More than half (54%) of all FSP households had children. Of these, more than two-thirds (67%) were single parent households. Twenty percent of FSP households included one or more elderly individuals. The majority (80%) of these households were elderly individuals living alone. More than a quarter (28%) of all FSP households included a disabled individual, and 58 percent of these households were disabled persons living alone. Overall, 51 percent of all FSP participants in FY 2001 were children, 10 percent were elderly, and 13 percent were disabled.

FSP participation levels have changed dramatically in recent years. The number of participants grew by 47 percent between 1988 and 1994—the time period when NHANES-III data were collected—then fell back below the 1988 levels by early 1999. Between 1994 and 2000, the number of FSP participants decreased from 28.0 million to 16.9 million, a decrease of 40 percent (Tuttle, 2002). Between 2000 and 2001, the number of participants increased for the first time in 5 years, by roughly 1 million or 6 percent.

A number of investigators have studied the shifts in FSP participation, particularly the unprecedented decline noted in the mid- to late-1990s. (See, for example, Figlio et al., 2000, USDA/FNS, 2001, Jacobsen et al., 2001, Wallace and Blank, 1999, and Wilde et al., 2000a and 2000b). There is strong evidence that economic conditions played a role in the shifts seen in FSP participation levels over the past 10 to 15 years. The dramatic increase in participation in the early 1990s tracked with a declining

economy (Tuttle, 2002). Similarly, the drop in participation between 1994 and 2000 was consistent with an improving economy, and the increase in participation between 2000 and 2001 may be associated with the most recent economic downturn.

The relationship between FSP participation and economic indicators doesn't tell the whole story, however. FSP participation and unemployment rates diverge at some points in time, indicating that factors other than the economy have been in play (Wilde, 2001). Key changes in program policies and regulations may also have contributed to fluctuating FSP rolls, although it is generally believed that the relative impact of program policies was substantially less than the impact of economic conditions. The most notable changes in program policy in recent years include reforms enacted in 1996 as part of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA). These changes restricted program participation for resident aliens and other subgroups and placed strict limits on participation for "able-bodied adults without dependents" (ABAWDS). (Eligibility restrictions for resident aliens and several other groups were rescinded in 1998). Since the PRWORA reforms of 1996, participation in the Aid to Families With Dependent Children (AFDC)/TANF programs⁴ shrank by 64 percent, and TANF recipient households fell from 38 percent to 26 percent of all FSP households (Cunningham, 2001).

While economic factors and program policies explain a substantial portion of the decline in FSP participation, it is clear that other factors were also involved. Since the mid-1990s, FSP participation has declined not only because fewer individuals were eligible for the program but also because there has been a noteworthy drop in the percentage of eligible individuals

⁴Under PRWORA, the AFDC Program was replaced by TANF.

who actually elect to participate in the program. Indeed, the rate of FSP participation among income-eligible persons declined from 74 percent in 1994 to 57 percent in 1999 (the most recent year for which data are available) (Rosso, 2001). Factors that may have contributed to this decline include recipient confusion about eligibility, erroneous termination of FSP benefits when TANF cases were terminated, effects of TANF diversion programs on the FSP application process, and shortening of FSP certification periods (Kornfeld, 2002).

Nutrition Education

Nutrition education is a relatively recent, though growing, emphasis in the FSP. In FY 1998, USDA's Food and Nutrition Service (FNS) made a "renewed commitment to nutrition education" in the FSP (and all FANPs) and established a special staff within the agency to "refocus efforts toward nutrition and nutrition education" (USDA/FNS, 2003b). The increased focus on nutrition education as an adjunct to the economic benefits provided by the FSP reflects an important shift in the overarching mission and objectives of the programs. As stated in FNS's strategic plan for 2000-2005, there is a "growing awareness that making sure people have enough food is not enough; people must have the knowledge and motivation to make food choices that promote health and prevent disease" (USDA, 2000).

This "growing awareness" is based on accumulated scientific evidence that dietary patterns are associated with 4 of the 10 leading causes of death—coronary heart disease, certain types of cancer, stroke, and diabetes—and with the development of obesity and hypertension (both of which contribute to these and other chronic diseases) (Frazao, 1999). In addition, diet plays an important role in several other health conditions, including osteoporosis, iron-deficiency anemia, and neural-tube birth defects. Most

importantly, low-income individuals, the target population for the FANPs, are at increased risk of developing almost all of these health problems (U.S. Department of Health and Human Services (U.S. DHHS), 2000a).

The goal of food stamp nutrition education is to promote healthy food choices and active lifestyles among FSP participants. Four core elements have been defined for nutrition education efforts: dietary quality, food security, food safety, and shopping behavior/food resource management. Although nutrition education is still a very small part of the overall program (less than 1 percent of total program expenditures in FY 2002), efforts in this area have increased substantially in the past decade. In FY 1992, only five States applied for and received optional funding for nutrition education activities in the FSP, and the Federal share expenditure for these activities was \$661,000. In FY 2002, the number of States with approved nutrition education plans was 48 and Federal expenditures for FSP nutrition education exceeded \$174 million (USDA/FNS, 2003b). Most of this increase occurred after FY 1998, when FNS renewed its commitment to nutrition education in the FSP.

The Third National Health and Nutrition Examination Survey

NHANES-III was conducted by the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC) between 1988 and 1994. The survey included interviews and physical examinations and was designed to provide national estimates of the health and nutrition status of the civilian, noninstitutionalized population in the 50 United States.

NHANES-III was based on a complex multi-stage probability sample design (NCHS, 1994). Persons were selected on the basis of sex, age, and race or ethnicity. Children under 6 years of

age, adults over 60 years of age, and black and Mexican American persons were oversampled. NHANES-III collected data from 33,994 persons 2 months of age and older. Response rates were 85.6 percent for the household interview and 78.8 percent for the physical examination (NCHS, 1996).

Interviews were conducted in respondents' homes and physical examinations and measurements were completed in a Mobile Exam Center (MEC). The MEC examination included a physical exam, dietary interview, health interview, blood tests, body measurements, and a dental exam. To increase response rates, a home examination was offered as an alternative to the MEC exam for infants 2-11 months of age, adults 60 and over who were in a wheelchair, or anyone who was primarily bedridden. The home examination included a subset of the measures collected in the MEC.

The dietary interview included a single 24-hour recall that collected quantitative data on foods and beverages consumed during the preceding 24 hours.⁵ NCHS staff used these data to calculate nutrient intakes, using food composition data from the Survey Nutrient Database maintained by USDA's Agricultural Research Service (ARS).

Analytic Approach

FSP participants and nonparticipants in the NHANES-III sample were identified by response to a question that asked about current FSP participation: "(Are you/Is your family) receiving food stamps at the present time?" Those who reported current receipt of food stamps were considered FSP participants. Those

who did not report food stamp receipt were considered nonparticipants. Nonparticipants were further subdivided into those who were income-eligible for the FSP (household income at or below the FSP cutoff of 130 percent of poverty) and those whose income exceeded the eligibility standard (income above 130 percent of poverty).⁶ These three groups (FSP participants, income-eligible nonparticipants, and higher-income nonparticipants) were further divided on the basis of gender and age into a total of 72 subgroups. (A smaller number of subgroups was used for the analysis of dietary intake data and related variables. The reason for this variation is discussed in Chapter Two.)

For each variable examined, detailed tables were produced showing estimates for each of the 72 subgroups. Separate estimates were also produced for the total population, for each age group (both genders combined), and for each gender (all ages combined). Table 1 illustrates the format used in the detailed tabulations. Columns show data for all persons as well as for FSP participants and each of the nonparticipant groups. Rows show data for the age-specific subgroups, overall and by gender. Table 1 also shows the maximum sample size for each table cell. In each of the four panels, three columns show cell sizes for the three NHANES-III samples (Household Interview, MEC Examined, and Home + MEC Examined). The Household Interview sample contains all respondents. The MEC Examined sample contains the subsample of all respondents examined in the MEC, and

⁵For adults (17 years and older), NHANES-III also included a food frequency questionnaire, administered as part of the household interview. The food frequency had a 1-month reference period and was designed to collect qualitative information about dietary patterns (the data cannot be quantified because portion sizes were not collected). Data from the food frequency were not analyzed for this report.

⁶NHANES-III data include individuals who reported participation in the FSP and reported household income above the 130 percent of poverty cutoff used to define income eligibility for the FSP. This was true for 12.6 percent of those reporting FSP participation. Several factors may contribute to conflicting data on income and program participation. For example, NHANES-III measures income as a range rather than as an exact value and uses the midpoint of the range to compare household income to the poverty line; FSP eligibility is based on contemporaneous measures of household income, while NHANES-III measured income retrospectively (over the past 12 months); and NHANES-III interviewers and FSP eligibility workers may have used different probes or techniques to ascertain household income.

Table 1—Number of NHANES-III respondents: FSP participants and nonparticipants

	Total Persons			Currently Receiving Food Stamps			Income-eligible Nonparticipants			Higher-income Nonparticipants		
	Household Interview	MEC Examined	MEC+Home Examined	Household Interview	MEC Examined	MEC+Home Examined	Household Interview	MEC Examined	MEC+Home Examined	Household Interview	MEC Examined	MEC+Home Examined
Both sexes												
Under 1 year	2,107	1,961	1,996	502	487	489	340	327	328	1,131	1,033	1,061
1-2 years	2,689	2,527	2,528	851	829	830	510	482	482	1,134	1,049	1,049
3-5 years	3,465	3,260	3,260	1,083	1,047	1,047	720	694	694	1,462	1,350	1,350
6-11 years	3,467	3,286	3,286	992	968	968	708	681	681	1,540	1,440	1,440
12-19 years	3,441	3,211	3,211	828	794	794	761	725	725	1,568	1,446	1,446
20-29 years	3,783	3,508	3,516	676	659	660	874	819	821	1,931	1,765	1,768
30-39 years	3,594	3,328	3,333	578	547	547	623	597	599	2,165	1,991	1,992
40-49 years	2,794	2,582	2,588	372	357	357	416	393	395	1,796	1,652	1,656
50-59 years	2,058	1,853	1,869	219	204	208	279	259	260	1,386	1,246	1,255
60-69 years	2,608	2,309	2,366	306	273	281	497	442	455	1,540	1,373	1,404
70-79 years	2,156	1,751	1,866	197	161	172	452	365	393	1,268	1,058	1,117
80 + years	1,832	1,242	1,492	151	114	131	447	297	368	918	670	781
Total	33,994	30,818	31,311	6,755	6,440	6,484	6,627	6,081	6,201	17,839	16,073	16,319
Male												
Under 1 year	1,067	982	1,005	241	233	235	163	157	158	589	531	549
1-2 years	1,347	1,273	1,274	457	446	447	239	226	226	556	517	517
3-5 years	1,675	1,579	1,579	523	504	504	342	334	334	708	654	654
6-11 years	1,768	1,665	1,665	484	472	472	352	339	339	812	753	753
12-19 years	1,622	1,510	1,510	373	356	356	374	359	359	725	665	665
20-29 years	1,801	1,643	1,644	225	214	214	437	407	407	971	877	877
30-39 years	1,620	1,468	1,470	190	176	176	276	260	261	1,047	945	945
40-49 years	1,325	1,222	1,224	139	131	131	211	202	202	878	805	807
50-59 years	953	852	859	82	77	77	131	118	119	667	596	601
60-69 years	1,298	1,166	1,185	130	117	118	236	214	221	813	732	743
70-79 years	993	823	872	81	73	76	184	153	165	632	528	558
80 + years	826	598	699	57	49	54	169	115	142	483	367	420
Total	16,295	14,781	14,986	2,982	2,848	2,860	3,114	2,884	2,933	8,881	7,970	8,089
Female												
Under 1 year	1,040	979	991	261	254	254	177	170	170	542	502	512
1-2 years	1,342	1,254	1,254	394	383	383	271	256	256	578	532	532
3-5 years	1,790	1,681	1,681	560	543	543	378	360	360	754	696	696
6-11 years	1,699	1,621	1,621	508	496	496	356	342	342	728	687	687
12-19 years	1,819	1,701	1,701	455	438	438	387	366	366	843	781	781
20-29 years	1,982	1,865	1,872	451	445	446	437	412	414	960	888	891
30-39 years	1,974	1,860	1,863	388	371	371	347	337	338	1,118	1,046	1,047
40-49 years	1,469	1,360	1,364	233	226	226	205	191	193	918	847	849
50-59 years	1,105	1,001	1,010	137	127	131	148	141	141	719	650	654
60-69 years	1,310	1,143	1,181	176	156	163	261	228	234	727	641	661
70-79 years	1,163	928	994	116	88	96	268	212	228	636	530	559
80 + years	1,006	644	793	94	65	77	278	182	226	435	303	361
Total	17,699	16,037	16,325	3,773	3,592	3,624	3,513	3,197	3,268	8,958	8,103	8,230

Source: NHANES-III, 1988-94.

the Home Examined sample is a supplement to the MEC sample for a limited number of data items.

Tables include footnotes that clearly identify data source(s). Brief descriptions of the various NHANES-III data files used in the analysis are provided in appendix A. Tables also include footnotes, as appropriate, that identify reference standards used in interpreting NHANES-III data. Reference standards are described in appendix B. To the extent possible, standards are based on those used in the *Healthy People 2010* objectives (U.S. DHHS, 2000a).

Age Adjustment

Data shown in the “total” rows of all detailed tables are age-adjusted, or standardized according to the age distribution of the U.S. population in the year 2000. Age-adjustment is important for comparisons between subgroups and for trend analyses between NHANES surveys. When comparing subgroups such as FSP participants and income-eligible nonparticipants at a point in time, age-adjustment eliminates between-group differences that are due solely to differences in the age distributions of the groups (U.S. DHHS, 2000b).

It is important to understand that age-adjusted estimates do not represent the *true* or raw estimates for a given population or subgroup. Rather, the age-adjusted estimates should be viewed as constructs or indices that provide information on the relative comparability of two or more populations (in this case, FSP participants and two different groups of nonparticipants) on a particular measure (U.S. DHHS, 2000b).⁷

The choice of a standard population for age-adjusted estimates is somewhat arbitrary. For this report, adjustments are based on year 2000 Census estimates. Use of year 2000 population estimates facilitates comparison of NHANES-III estimates with estimates from NHANES 1999–2000. Population estimates are shown in table 2. The year 2000 age distribution shown in column 1 of table 2 was applied to FSP participants and to each group of nonparticipants.

Statistical Tests

The statistical significance of differences between FSP participants and each group of nonparticipants was tested using t-tests. When multiple outcome categories were examined simultaneously, the Bonferroni adjustment was used to adjust for multiplicity (Lohr, 1999). Nonetheless, because of the large number of t-tests conducted, caution must be exercised in interpreting results. In general, findings discussed in the text are limited to those with strong statistical significance (1 percent level or better) or those that are part of an obvious trend or pattern in the data.

Text discussions generally focus on differences between FSP participants and one or both groups of nonparticipants. Reference may be made to other between-group differences—most often males vs. females—when the differences are noteworthy. The statistical significance of these secondary comparisons has not been tested, however, and this fact is noted in the text. Statistical tests were not performed on these second-level differences because of the expansive number of statistical tests performed in the main analysis and because these comparisons are not the focus of the report.

Additional information about the analytic approach, including use of NHANES-III sampling weights, calculation of standard errors, age standardization, and guidelines used to flag

⁷Estimates for gender-and-age-specific subgroups are not adjusted and do represent *true* or raw estimates for the specific subgroup.

Table 2—Age distribution of FSP participants and nonparticipants in NHANES-III sample frame and year 2000 population

	Year 2000 population distribution		NHANES-III sample frame							
	Total Persons		Total Persons ¹		Currently Receiving Food Stamps		Income-eligible Nonparticipants		Higher-income Nonparticipants	
	Population (thousands)	Percent	Population (thousands)	Percent	Population (thousands)	Percent	Population (thousands)	Percent	Population (thousands)	Percent
Both sexes										
Under 1 year	3,815	1.4	3,174	1.4	748	2.9	475	1.5	1,950	1.1
1-2 years	7,546	2.8	7,515	3.2	1,784	6.9	1,069	3.3	4,661	2.6
3-5 years	11,433	4.2	11,110	4.7	2,565	9.9	1,689	5.3	6,855	3.9
6-11 years	24,090	8.8	21,624	9.2	3,998	15.4	3,243	10.1	14,383	8.1
12-19 years	31,535	11.5	26,274	11.2	3,817	14.7	4,590	14.3	17,868	10.1
20-29 years	36,262	13.2	37,111	15.8	4,310	16.6	6,096	19.0	26,705	15.1
30-39 years	41,901	15.3	40,551	17.2	3,269	12.6	4,386	13.7	32,895	18.6
40-49 years	42,284	15.4	31,324	13.3	2,032	7.8	2,555	8.0	26,736	15.1
50-59 years	30,302	11.0	20,490	8.7	1,249	4.8	2,002	6.3	17,239	9.7
60-69 years	20,047	7.3	18,410	7.8	1,127	4.3	2,248	7.0	15,035	8.5
70-79 years	16,154	5.9	12,413	5.3	672	2.6	2,242	7.0	9,499	5.4
80 + years	9,152	3.3	5,031	2.1	446	1.7	1,404	4.4	3,182	1.8
Total	274,520	100.0	235,027	100.0	26,017	100.0	32,000	100.0	177,010	100.0
Male										
Under 1 year	—	1.4	1,642	1.4	358	3.3	247	1.7	1,037	1.2
1-2 years	—	2.8	3,844	3.4	998	9.3	491	3.4	2,355	2.6
3-5 years	—	4.2	5,660	5.0	1,243	11.6	901	6.2	3,516	4.0
6-11 years	—	8.8	11,029	9.6	1,874	17.4	1,514	10.4	7,641	8.6
12-19 years	—	11.5	13,104	11.5	1,677	15.6	2,225	15.3	9,202	10.3
20-29 years	—	13.2	18,242	16.0	1,447	13.5	3,010	20.7	13,785	15.5
30-39 years	—	15.3	19,792	17.3	1,221	11.4	1,928	13.3	16,643	18.7
40-49 years	—	15.4	15,354	13.4	790	7.4	1,221	8.4	13,343	15.0
50-59 years	—	11.0	9,982	8.7	478	4.4	981	6.8	8,523	9.6
60-69 years	—	7.3	8,565	7.5	327	3.0	972	6.7	7,266	8.2
70-79 years	—	5.9	5,341	4.7	220	2.0	663	4.6	4,459	5.0
80 + years	—	3.3	1,797	1.6	110	1.0	385	2.6	1,302	1.5
Total	—	100.0	114,352	100.0	10,744	100.0	14,537	100.0	89,071	100.0
Female										
Under 1 year	—	1.4	1,532	1.3	390	2.6	229	1.3	913	1.0
1-2 years	—	2.8	3,670	3.0	786	5.2	577	3.3	2,307	2.6
3-5 years	—	4.2	5,449	4.5	1,322	8.7	788	4.5	3,339	3.8
6-11 years	—	8.8	10,595	8.8	2,124	13.9	1,729	9.9	6,741	7.7
12-19 years	—	11.5	13,170	10.9	2,140	14.0	2,364	13.5	8,666	9.8
20-29 years	—	13.2	18,869	15.6	2,862	18.7	3,087	17.7	12,921	14.7
30-39 years	—	15.3	20,759	17.2	2,048	13.4	2,459	14.1	16,252	18.5
40-49 years	—	15.4	15,970	13.2	1,242	8.1	1,335	7.6	13,394	15.2
50-59 years	—	11.0	10,508	8.7	771	5.0	1,021	5.8	8,716	9.9
60-69 years	—	7.3	9,845	8.2	800	5.2	1,276	7.3	7,769	8.8
70-79 years	—	5.9	7,072	5.9	452	3.0	1,580	9.0	5,041	5.7
80 + years	—	3.3	3,234	2.7	335	2.2	1,019	5.8	1,880	2.1
Total	—	100.0	120,675	100.0	15,273	100.0	17,463	100.0	87,939	100.0

¹ Total includes persons with missing food stamp participation or income.

— Population by gender not available. Overall age distribution was used to adjust both male and female totals.

Source: NHANES-III, 1988-94. Year 2000 population from U.S. Census Bureau, *Monthly Estimates of the United States Population*, April 2000.

point estimates deemed to be statistically unreliable, is provided in appendix C. Individual point estimates may be deemed statistically unreliable because of small sample size or a large coefficient of variation. In keeping with NHANES-III reporting guidelines, such estimates are reported in detailed tables and are clearly flagged.

The chapters that follow summarize key findings. Graphics are used to illustrate observed differences between FSP participants and nonparticipants. Differences that are statistically significant at the 5 percent level or better are highlighted. Detailed tables provided in appendix D differentiate three levels of statistical significance ($p < .001$, $.01$, and $.05$). It is important to note that differences between FSP participants and nonparticipants may be statistically significant even if point estimates are unreliable. When this occurs, the text describes the existence and direction of the significant difference and identifies the group(s) for which point estimates are unreliable.

Comparisons between FSP participants and income-eligible nonparticipants are of primary interest. However, comparisons between FSP participants and higher-income nonparticipants are also of interest. These comparisons provide information on nutrition- and health-related disparities between FSP participants and individuals who are not constrained by low incomes.

As noted previously, this research was not designed to measure program impacts. Thus, significant differences that do appear between FSP participants and nonparticipants cannot be attributed to participation in the FSP. At the same time, the absence of a significant difference cannot be interpreted as evidence that participation in the FSP has no effect. Accurate assessment of FSP impacts requires specially designed studies or, at a minimum, complex

analytical models that require a variety of measures that are not available in the NHANES-III dataset.