Chapter Six

Health Status, Conditions, and Risks

This chapter describes the health status of FSP participants and nonparticipants. The discussion is divided into six main topic areas: general health status, health conditions and risks of adults, pregnancy and childbirth, birth characteristics of infants and children, measures of childhood health, and dental health. The chapter includes both self-reported data and data from physical and dental exams. Self-reported data for infants and children were provided by parents or other caregivers. For some measures—specifically, ratings of general health status and reported prevalence of high blood pressure—both self-reported and physician-reported data are presented.

General Health Status

NHANES-III collected information on general health status through self-reports as well as physician assessments. In both cases, response options were: excellent, very good, good, fair, and poor.

Fifty-seven percent of all persons rated their health status as very good or excellent and 14 percent rated their health as fair or poor (tables D-177 and D-178). In general, as age increased, the percentage of individuals reporting very good or excellent health decreased and the percentage reporting fair or poor health increased (statistical significance of age-based differences not tested). The pattern was similar for males and females.

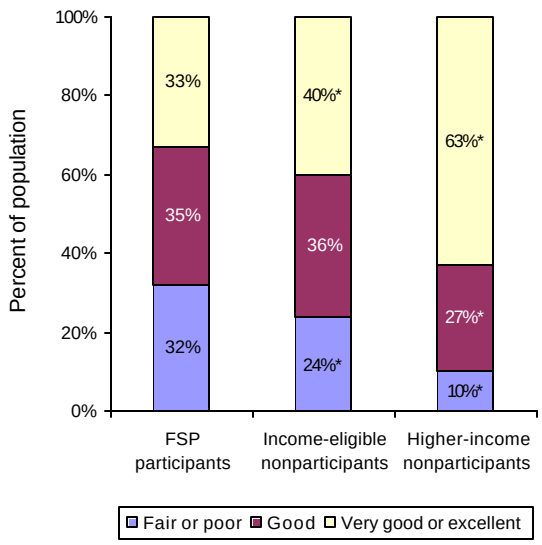
FSP participants had a more negative perception of their health status than either income-eligible or higher-income nonparticipants. FSP participants were *less* likely than either group of nonparticipants to rate their health status as being very good or excellent and *more* likely to rate their health status as fair or poor (figure 52). About a third of FSP participants rated their health status as very good or excellent. This compares with 40 percent of income-eligible nonparticipants and 63 percent of higher-income nonparticipants. Almost a third of FSP participants reported that their health status was fair or poor. The same was true of 24 percent of income-eligible nonparticipants and only 10 percent of higher-income nonparticipants. Comparable patterns were observed for both males and females.

The difference between FSP participants and income-eligible nonparticipants was concentrated among adults 50 years and older (tables D-177 and D-178). In contrast, differences between FSP participants and higher-income nonparticipants were noted for all age groups.

Physician assessments of general health status were consistently more positive than self-assessments; however, the general trends were largely consistent with those observed in the self-reported data. For example, the physician-assessment data confirm that, in comparison with both groups of nonparticipants, FSP participants were *less* likely to be in excellent or very good health and *more* likely to be in fair or poor health (figure 53 and tables D-179 and D-180).

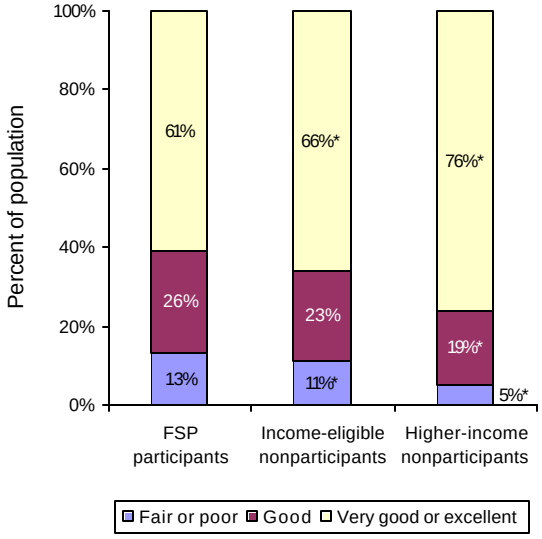
Physicians rated 61 percent of FSP participants as being in excellent or very good health, compared with 66 percent of income-eligible nonparticipants and 76 percent of higher-income nonparticipants. Thirteen percent of FSP participants were described as being in fair or poor

Figure 52—Self-reported general health status



*Statistically significant difference from FSP participants at the .05 level or better.
Source: NHANES-III, 1988-94.

Figure 53—Physician-assessed general health status



*Statistically significant difference from FSP participants at the .05 level or better.
Source: NHANES-III, 1988-94.1

health. Comparable figures for income-eligible nonparticipants and higher-income nonparticipants were 11 percent and 5 percent, respectively.

Health Conditions and Risks of Adults

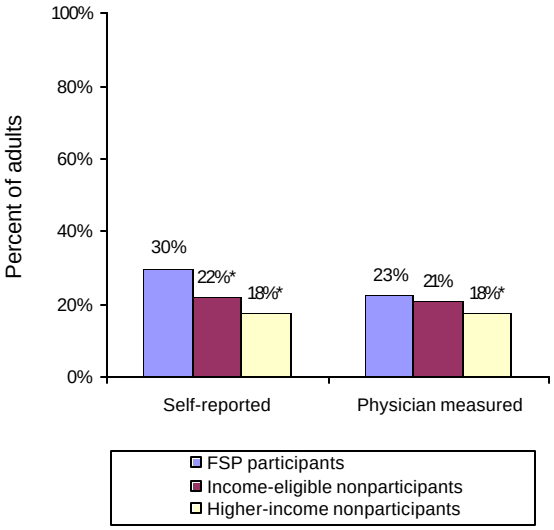
High Blood Pressure

The leading chronic health problem reported by adults in all three groups was high blood pressure. FSP participants were more likely than either income-eligible nonparticipants or higher-income nonparticipants to report having high blood pressure (figure 54 and table D-181). Thirty percent of FSP participants reported high blood pressure, compared with 22 percent of income-eligible nonparticipants and 18 percent of higher-income nonparticipants. This pattern was noted for both males and females (table D-181).

For the population as a whole, statistically significant differences between FSP participants and income-eligible nonparticipants were concentrated among adults between 40 and 69 years of age. Significant differences between FSP participants and higher-income nonparticipants were noted for all but the two oldest age groups (70-79 years and 80 and older).

The actual prevalence of high blood pressure, as measured in physical exams, was consistent with self-reported data for income-eligible nonparticipants and higher-income nonparticipants, but

Figure 54—Self-reported high blood pressure vs. physician-assessed high blood pressure



*Statistically significant difference from FSP participants at the .05 level or better.
Source: NHANES-III, 1988-94.

was somewhat lower than the self-reported prevalence for FSP participants (23% vs. 30%) (figure 54 and table D-182) (statistical significance of difference between two data sources not tested). Based on physician assessment, there was no significant difference between FSP participants and income-eligible nonparticipants in the prevalence of high blood pressure. In comparison with higher-income nonparticipants, however, FSP participants were more likely to have high blood pressure (23% vs. 18%). This difference was largely attributable to a difference among females (23% vs.16%) (table D-182).

Other Chronic Conditions

Adult NHANES-III respondents were asked if a physician had ever told them that they had specific types of health conditions (other than high blood pressure). Queried conditions include diabetes, heart attack, stroke, emphysema, congestive heart failure, and cancer other than skin cancer.

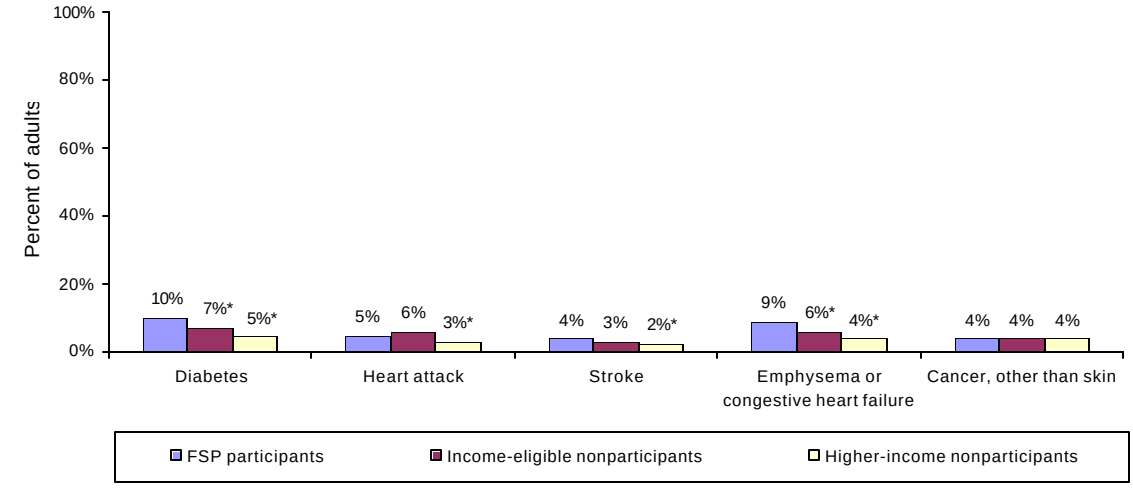
Overall, none of these specific health conditions was reported by more than 5 percent of adults 17 and older (tables D-183 and D-184 and D-186 to D-188). The reported prevalence of all conditions generally increased with age. There was some variation by gender, with the prevalence of heart attack and emphysema or congestive heart failure[1] being somewhat greater for males than for females. The opposite was true of cancers other than skin cancer (statistical significance of age- and gender-based differences not tested).

In comparison with income-eligible nonparticipants, FSP participants were more likely to report diabetes and emphysema or congestive heart failure (figure 55). Disparities between FSP participants and higher-income nonparticipants were more widespread. For all conditions except cancer, the self-reported prevalence was significantly greater for FSP participants than for higher-income nonparticipants.

Between-group differences varied somewhat by gender. Differences between FSP participants and income-eligible nonparticipants in the prevalence of diabetes and congestive heart

[1]Congestive heart failure and emphysema were combined because the prevalence of each condition was so low that most point estimates in the individual tabulations were statistically unreliable.

Figure 55—Percent of adults reporting chronic health conditions



*Statistically significant difference from FSP participants at the .05 level or better.
Source: NHANES-III, 1988-94.

failure or emphysema were observed for females but not for males (tables D-183 and D-187). With the exception of the difference in the prevalence of heart attack, differences between FSP participants and higher-income nonparticipants were observed for both males and females. The difference between the two groups in the reported prevalence of heart attack was significant for females but not for males (table D-184).

Risk of Coronary Heart Disease

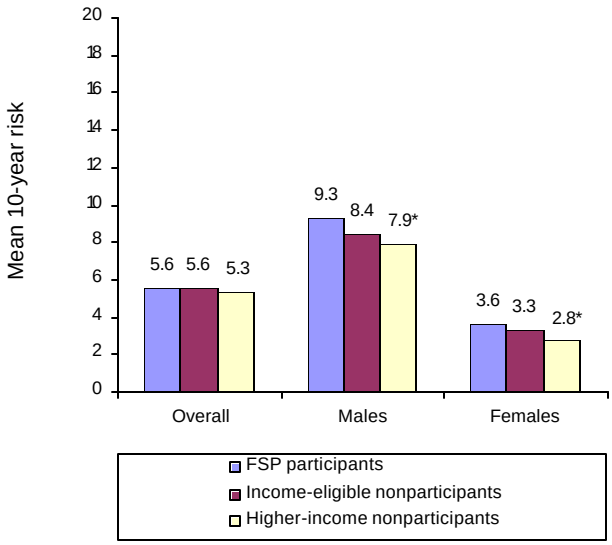
The 10-year risk of coronary heart disease was computed for adults between the ages of 20 and 79, using guidelines developed by the National Cholesterol Education Program (NCEP) (NIH, 2001).[2] An individual's 10-year risk is determined on the basis of age, gender, total cholesterol level, smoking status, level of HDL cholesterol, and systolic blood pressure. Potential levels of risk range from a low of less than 1 percent to a high of more than 30 percent.

Overall, the mean 10-year risk of coronary heart disease for adults 20 and older was 5.3 percent (table D-189). Mean 10-year risks were higher for males than for females (8% vs. 3%) and increased with age (statistical significance of gender- and age-based differences not tested). The age-related increase in risk is at least partially attributable to the scoring algorithm used in assigning risk "points" (NIH, 2001).

As a group, adult FSP participants were at no greater risk of coronary heart disease over the next 10 years than income-eligible adults or higher-income adults (figure 56 and table D-189). On average, adults in all three groups had a 10-year risk of 5 to 6 percent. When the data were examined by gender, however, differences between FSP participants and higher-income nonparticipants emerged. Both FSP males and

[2]The NCEP guidelines define risk only for individuals up to the age of 79.

Figure 56—Mean 10-year risk of coronary heart disease



*Statistically significant difference from FSP participants at the .05 level or better.
Source: NHANES-III, 1988-94.

FSP females had significantly greater 10-year risks, on average, than their counterparts in the higher-income nonparticipant group.

There were no significant differences between FSP participants and nonpartipants, overall or among females, in the percentage of individuals with a greater than 10 percent risk of coronary heart disease (table D-190). Among males, however, FSP participants were significantly more likely than higher-income nonparticipants to have a 10-year-risk that exceeded 10 percent (35% vs. 30%).

Pregnancy and Childbirth History

NHANES-III collected a detailed reproductive history for all female respondents 12 and older. Because the prevalence of pregnancy was low among females under the age of 17, tabulations prepared for this report were limited to females 17 and older. Variables analyzed include the percentage ever pregnant, the mean number of pregnancies (among those who had been pregnant), and, among those who had given birth, the mean number of live births, the mean

age at the time of the first live birth, and the percentage who were teenagers or over age 35 at the time of the first live birth.

FSP females were significantly more likely than either income-eligible or higher-income females to have been pregnant one or more times (93% vs. 84% and 78%) (table D-191). Differences were largely concentrated among females between the ages of 17 and 39.

Among females who had ever been pregnant, FSP participants had significantly more pregnancies and more live births than either group of nonparticipants (figure 57 and tables D-192 and D-193). On average, FSP participants had 4.4 pregnancies and 3.4 live births, compared with 3.5 pregnancies and 2.8 live births for income-eligible nonparticipants, and 2.9 pregnancies and 2.1 live births for higher-income nonparticipants.

Female FSP participants were also significantly younger at the time of their first live birth than either income-eligible nonparticipant females or higher-income nonparticipant females (table D-194). FSP females were 19.8 years old, on average, when they gave birth to their first child. Income-eligible nonparticipants were 21.0 years old and higher-income nonparticipants were 22.4 years old.

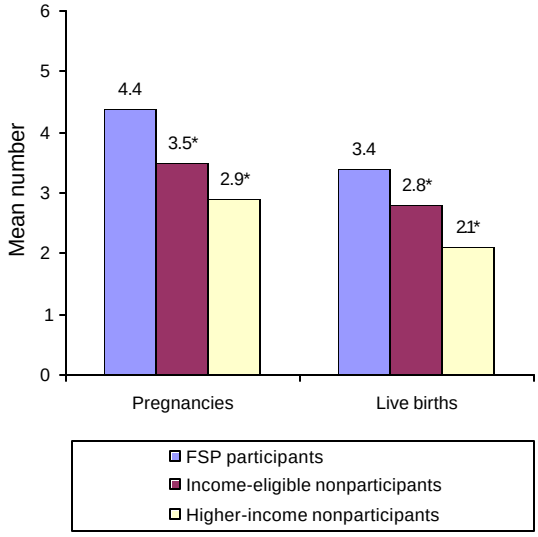
Moreover, the percent of females who were teenagers (19 years or less) at the time of their first live birth was significantly greater for FSP participants than for either group of nonparticipants (figure 58 and table D-195). Fifty-nine percent of FSP participants were teenagers at the time of their first live birth, compared with 47 percent of income-eligible nonparticipants and 30 percent of higher-income nonparticipants.

Overall, only 1 percent of females were 35 or older at the time of their first live birth (table D-196). There were no significant differences between FSP participants and either group of nonparticipants on this measure.

Birth Characteristics of Infants and Children

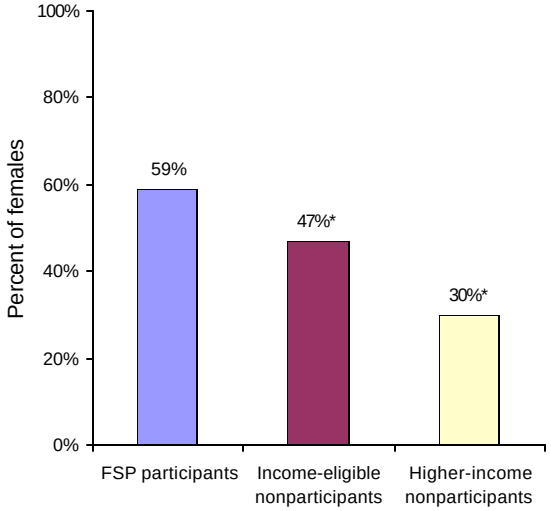
For infants and children under the age of 12, NHANES-III collected data on a number of

Figure 57—Mean number of pregnancies and mean number of live births among females who were ever pregnant



*Statistically significant difference from FSP participants at the .05 level or better.
Source: NHANES-III, 1988-94.

Figure 58—Percent of females who were teens at the time of their first live birth



*Statistically significant difference from FSP participants at the .05 level or better.
Source: NHANES-III, 1988-94.

characteristics of both mother and child at the time of birth. This includes information on maternal age, maternal smoking during pregnancy, the child's birthweight (reported by parent or other caregiver), and receipt of neonatal intensive care services.

Maternal Age

Infants and children in FSP households were born to younger mothers, on average, than infants and children in either income-eligible or higher-income nonparticipant households (23.7 years vs. 24.7 years and 27.0 years) (table D-197). FSP infants and children were also more likely than infants and children in either of the nonparticipant groups to have been born to a teen mother (table D-198). More than a quarter (26%) of infants and children in FSP households were born to teen mothers, compared with 17 percent of infants and children in income-eligible households and 8 percent of infants and children in higher-income households. In addition, FSP infants and children were less likely than higher-income nonparticipant infants and children to have been born to mothers over the age of 35 (4% vs. 6%) (table D-199).

Maternal Smoking During Pregnancy

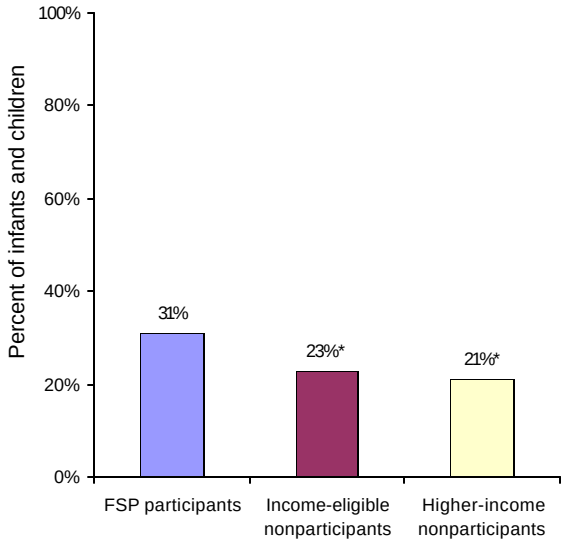
Infants and children participating in the FSP were more likely than either income-eligible or higher-income infants and children to have been born to women who smoked during the pregnancy (figure 59 and table D-200). Thirty-one percent of infants and children in FSP households were born to women who smoked during the pregnancy, compared with 23 percent of income-eligible infants and children and 21 percent of higher-income infants and children.

Birthweight (Self-Report)

Based on self-reported data, infants and children participating in the FSP had significantly lower birthweights, on average, than either income-eligible nonparticipants or higher-income nonparticipants (figure 60 and table D-201). Overall, the mean birthweight for FSP infants and children was 3,179 gm. (7.0 pounds), compared with 3,312 gm. (7.3 pounds) for income-eligible infants and children, and 3,433 gm. (7.6 pounds) for higher-income nonparticipants. The difference between FSP participants and income-eligible nonparticipants was due primarily to a difference in the oldest group of children (6-11-year-olds). Differences between FSP participants and higher-income nonparticipants were noted for all age groups.

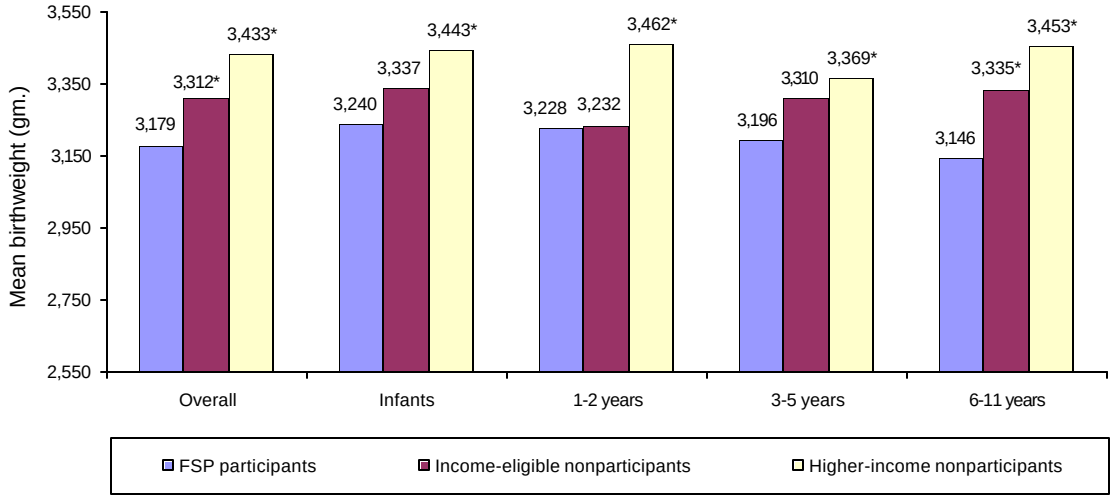
Self-reported data on birthweight also indicate that infants and children in FSP households were more likely than infants and children in either of the two nonparticipant groups to have been low birthweight (less than 2,500 gm. or 5.5 pounds) (figure 61 and table D-202). The reported prevalence of low birthweight among FSP participants (13%) was 63 percent higher than the prevalence among income-eligible nonparticipants (8%) and more than 2.5 times that of higher-income nonparticipants (5%). Again, the

Figure 59—Percent of infants and children whose mothers smoked during pregnancy



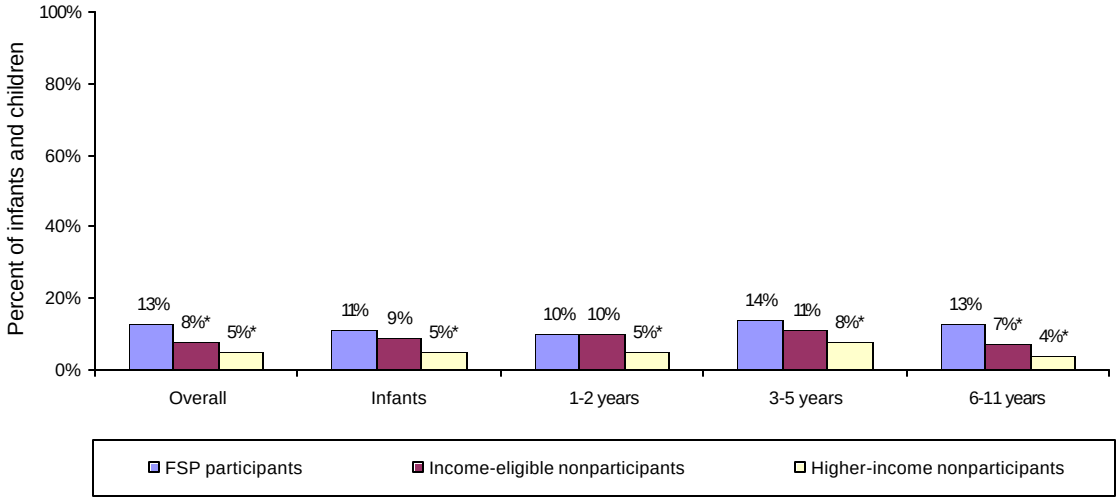
*Statistically significant difference from FSP participants at the .05 level or better.
Source: NHANES-III, 1988-94.

Figure 60—Reported mean birthweight of infants and children



*Statistically significant difference from FSP participants at the .05 level or better.
Source: NHANES-III, 1988-94.

Figure 61—Percent of infants and children born low birthweight, based on reported birthweight



*Statistically significant difference from FSP participants at the .05 level or better.
Source: NHANES-III, 1988-94.

difference between FSP participants and income-eligible nonparticipants was concentrated in the 6-11-year-old age group, while significant differences between FSP participants and higher-income nonparticipants were noted for all age groups.

Overall, there were no statistically significant between-group differences in the prevalence of very-low birthweight (less than 1,500 gm. or 3.3 pounds) (table D-203).

Neonatal Intensive Care Stays

Eleven percent of all infants and children under age 12 were reportedly hospitalized in neonatal intensive care units (NICUs) at the time of their birth (table D-204). FSP infants and children were more likely than higher-income infants and children to have received NICU care (14% vs. 11%). This difference was concentrated among 6-11-year-olds.

Measures of Childhood Health

This section presents data on a variety of measures related to childhood health. Topics include hospitalizations since birth, accidents, injuries, and poisonings requiring medical attention, chronic respiratory conditions, and lead poisoning.[3] Data on lead poisoning include parent/caregiver reports on prior lead screening and measured levels of blood lead. All other data are self-reported.

Hospitalizations Since Birth

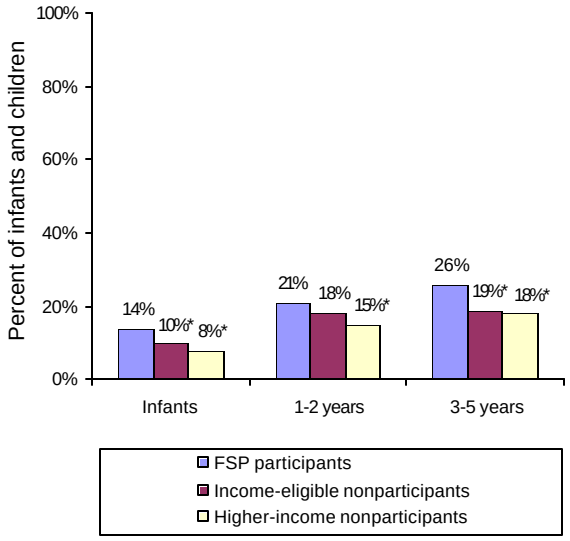
About a quarter (26%) of infants and children up to age 16 had been hospitalized at least once since birth (table D-205). The percentage of children with hospitalizations since birth is a cumulative measure that increases with age. Between-group differences were concentrated among infants and children under 6. Among infants and 3-5-year-olds, the percentage of FSP participants who had been hospitalized at least once was significantly greater than the percentage for either income-eligible or higher-income nonparticipants (figure 62). Among older children, the gaps between FSP participants and the two groups of nonparticipants were considerably narrowed and, consequently, there were no significant between-group differences (table D-205).

Accidents, Injuries, and Poisonings Requiring Medical Attention

Parents and caregivers were asked whether infants or children had experienced an accident, injury, or poisoning, anytime during the preceding 12 months, that was serious enough to require medical attention. Overall, 14 percent of infants and children under 16 had at least one such experience (table D-206).

There was no significant difference between FSP participants and income-eligible nonparticipants on this measure. However, in comparison

Figure 62—Percent of infants and children with at least one hospitalization since birth



*Statistically significant difference from FSP participants at the .05 level or better.
Source: NHANES-III, 1988-94.

[3]Caregivers were also asked whether children had several other health conditions, including high cholesterol, diabetes, and high blood pressure. However, because the percentages of children reported to have any of these conditions were very low, the data were not tabulated for this report.

with higher-income nonparticipants, infants and children participating in the FSP were significantly less likely to have experienced such medical emergencies (9% vs. 16%). This difference, which may reflect parental response as well as relative severity of a child's condition, was concentrated in the two oldest age groups (6-11-year-olds and 12-16-year-olds).

Chronic Respiratory Conditions

Parents and caregivers were asked whether a health professional had ever told them that their infant or child had asthma, chronic bronchitis, or hay fever. The reported prevalence of all of these conditions was relatively low, overall, with asthma being the most common (10%) (table D-207) and chronic bronchitis being the least common (4%) (table D-208).

The prevalence of all three respiratory conditions was essentially equivalent for FSP participants and income-eligible nonparticipants (tables D-207 to D-209). Compared with higher-income nonparticipants, however, FSP infants and children under the age of 6 were more likely to have both asthma and chronic bronchitis. In addition, FSP children between 3 and 16 were significantly *less* likely to have hay fever than comparably aged higher-income children.

Lead Poisoning

Parents and caregivers were asked whether children had been screened for lead poisoning. Caregivers of children who had been screened were asked whether the results indicated that the child had "high lead or lead poisoning."

Overall, about 9 percent of infants and children 16 and under had been screened for lead poisoning (table D-210). Infants and children participating in the FSP were significantly more likely than infants and children in either group of nonparticipants to have been screened. Seventeen percent of FSP infants and children had been tested for lead poisoning, compared with 10 percent of income-eligible nonparticipant infants and children and 6 percent of higher-income nonparticipant infants and children.

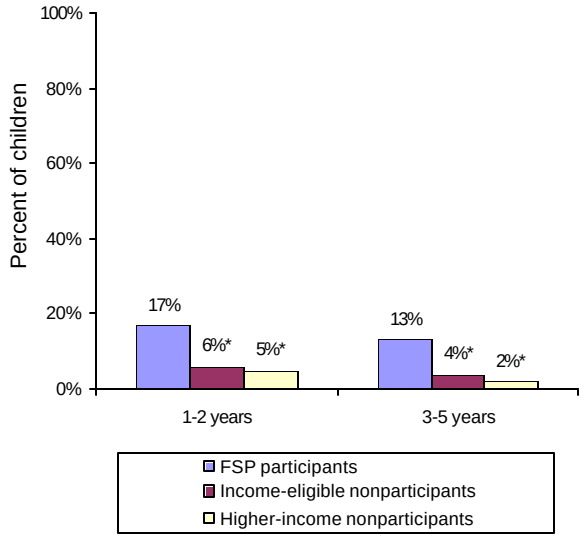
According to caregiver reports, the percentage of infants and children found to have lead poisoning was very low, less than 1 percent overall (table D-211). Nonetheless, the percentage of FSP participants reportedly diagnosed with lead poisoning was significantly greater than the percentage of higher-income nonparticipants (the point estimate for higher-income nonparticipants is statistically unreliable).

Based on NHANES-III laboratory tests and CDC-defined standards for elevated levels of blood lead, the actual prevalence of lead poisoning was substantially greater than reported by caregivers.[4] Overall, 3 percent of children between 1 and 16 were found to have high levels of blood lead, indicative of lead poisoning (table D-212). Prevalence was highest among the youngest age groups. Overall, 8 percent of 1-2-year-olds and 5 percent of 3-5-year-olds had high levels of blood lead.

FSP children were significantly more likely than children in either of the nonparticipant groups to have high levels of blood lead. Seventeen percent of 1-2-year-old FSP participants and 13 percent of 3-5-year-old FSP participants had abnormally high levels of lead in their blood (figure 63). Comparable statistics for nonparticipants were 6 percent and 4 percent, respectively, for income-eligible nonparticipants, and 5 percent and 2 percent, respectively, for higher-income nonparticipants. A similar pattern of differences was observed for 6-11-year-olds and 12-16-year-olds; however, most of the point

[4]The two measures are not directly comparable because (a) not all children had been screened for lead poisoning prior to NHANES-III, (b) screenings that were reported could have taken place anytime in the past, and (c) tabulations of self-reported data include infants, while data on lab values are limited to children 1 year and older.

Figure 63—Percent of children with high blood lead levels



*Statistically significant difference from FSP participants at the .05 level or better.
Source: NHANES-III, 1988-94.

estimates for these age groups are statistically unreliable (table D-212).

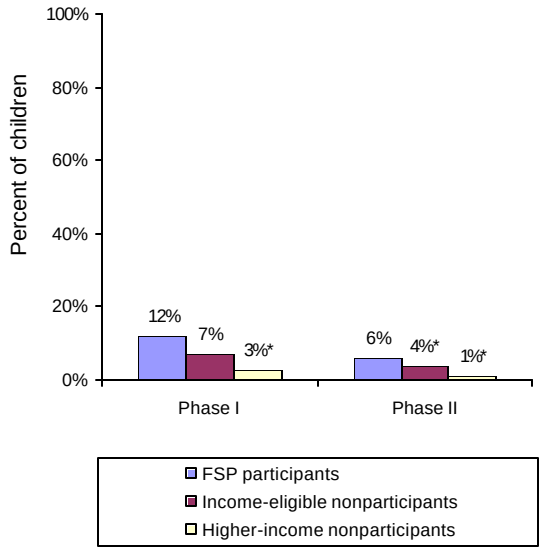
In recent years, the prevalence of lead poisoning has been declining sharply in the U.S. Between NHANES-II (1976-80) and the first phase of NHANES-III (1988-91), the overall prevalence of lead poisoning in the population as a whole decreased from 77.8 percent to 4.4 percent (CDC, 1997). Moreover, between Phase I (1988-91) and Phase II (1991-94) of NHANES-III, the overall prevalence of high blood lead levels continued to decline, with percentage point decreases generally being greater among groups with the highest prevalence of elevated lead levels during Phase I (CDC, 1997).

Tables D-213 and D-214 present data on the prevalence of elevated blood lead levels among children ages 1 to 16 in Phase I and Phase II of the NHANES-III data collection. (The data reported in table D-212 reflect the complete NHANES-III sample). The overall prevalence of elevated blood lead levels decreased by 51 percent between Phase I and Phase II (4.5% vs. 2.2%).

Figure 64 illustrates the decrease in the prevalence of high blood lead levels over the period of the NHANES-III data collection for FSP participants and both groups of nonparticipants. The decrease for FSP participants was approximately 47 percent, from a prevalence of 11.7 percent in Phase I to 6.2 percent in Phase II. The decrease for income-eligible nonparticipants was comparable percentage-wise, going from 6.7 percent in Phase I to 3.5 percent in Phase II. The decrease for higher-income nonparticipants was greater than for either of the other groups, moving from 3.3 percent in Phase I to 1.3 percent in Phase II (a decrease of about 61 percent).

Because of the declining prevalence of high blood lead levels over time, Phase II data provide the most accurate assessment of the prevalence of lead poisoning available from NHANES-III. These data indicate that, in 1991-94, FSP children were significantly more likely than either group of nonparticipating children to have levels of blood lead (6% vs. 4% and 1%).

Figure 64—Percent of children with high blood lead levels: NHANES-III, Phase I and Phase II



*Statistically significant difference from FSP participants at the .05 level or better.
Source: NHANES-III, 1988-94.

This pattern was noted for all but the oldest children (table D-214).

Dental Health

All NHANES-III respondents 2 years and older received a dental exam as part of the physical examination component. In this exam, all decayed, missing, and filled teeth were charted.

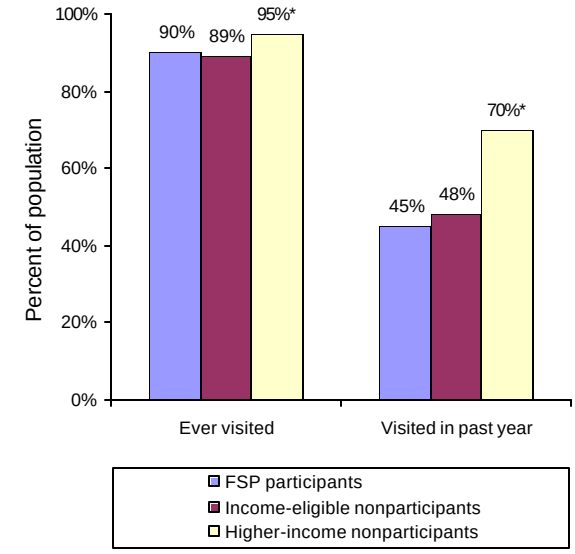
The average number of missing, decayed, and filled teeth for the population overall was 11.8 (table D-215). Means were comparable for males and females and, as expected, the number of missing, decayed, and filled teeth increased with age (statistical significance of gender- and age-based differences not tested).

Overall, the mean number of missing, decayed, and filled teeth was comparable for FSP participants and each group of nonparticipants. However, there was some variation in between-group differences by age and, to a lesser extent, gender. Specifically, among adults 80 and older, the mean number of missing, decayed, and filled teeth was significantly higher for FSP participants than for either group of nonparticipants (26 vs. 24 vs. 23). In addition, among children 2–11 years and adults 60-69 years, FSP participants had more missing, decayed, or filled teeth than higher-income nonparticipants. The between-group difference for 60-69-year-olds was concentrated among females. Finally, among females 40-49 years, the trend was reversed. In this cohort, FSP participants had significantly fewer decayed, missing, or filled teeth than either group of nonparticipants (14 vs. 17 and 16).

Visits to a Dentist or Dental Hygienist

FSP participants and income-eligible nonparticipants visited dentists and/or dental hygienists at roughly the same rate (figure 65 and tables D-216 and D-217). However, FSP participants were significantly less likely than higher-income nonparticipants to have visited a dental health professional. Overall, 90 percent of FSP participants had visited a dental health professional at least once, compared with 95 percent of higher-income nonparticipants. Only 45 percent of FSP participants reported having seen a dentist or hygienist within the past year, compared with 70 percent of higher-income nonparticipants. For recent dental visits, differences between FSP participants and higher-income nonparticipants were statistically significant for virtually all age and gender groups.

Figure 65—Percent of persons who have visited a dentist or dental hygienist



*Statistically significant difference from FSP participants at the .05 level or better.
Source: NHANES-III, 1988-94.