Chapter Five

Health-Related Behaviors

This chapter presents information on health-related behaviors of adults 60 years and older. Topics include physical activity, consumption of alcohol and tobacco, and social interaction. Among older adults, lack of social interaction has been linked to increased age-related declines in mental functioning (Bassuk et al., 1999). Such declines can lead to diminished functional capacity and increased health concerns.

Physical Activity

Increasing leisure-time physical activity among adults is one of the *Healthy People 2010* goals in the area of physical activity (U.S. DHHS, 2000a). Specific goals call for decreasing the percentage of adults who engage in no leisure-time activity and increasing the percentage who participate in moderate and vigorous physical activity. As discussed in more detail below, NHANES-III data lack sufficient information about levels of exertion to evaluate compliance with *Healthy People 2010* goals for vigorous and moderate activity.[1] However, the available data provide some information about the extent to which adults participated in specific types of physical activity.

Adult NHANES-III respondents were asked to report whether they participated in a number of different physical activities during the preceding month and, if so, how often they engaged in the activity. The specific activities included in the query were walking a mile or more without stopping, jogging or running, riding a bike or an exercise bike, swimming, aerobics or aerobic dance, other types of dancing, calisthenics, gardening or yard work, and weight lifting. Respondents were also asked to identify any other type of physical activity they engaged in during the preceding month.

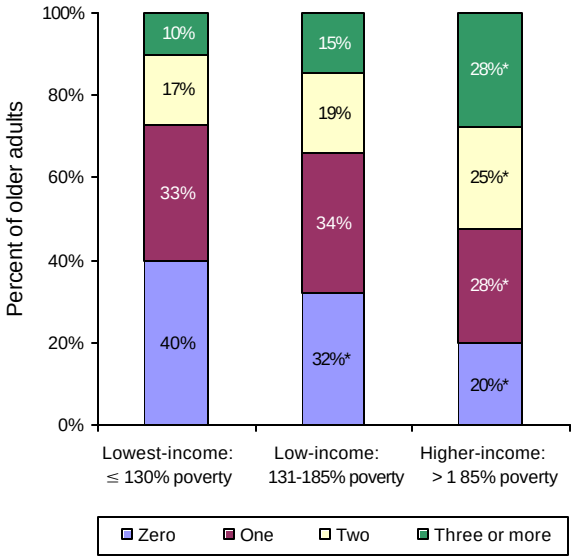
Number of Physical Activities in the Past Month

Overall, 27 percent of all older adults reported participating in *no* physical activity during the preceding month—that is, they responded negatively to all the queried activities and didn't report any other type of physical activity (table D-111). Twenty-nine percent reported participating in one activity and 22 percent reported two activities. The remaining 22 percent reported three or more activities. A greater percentage of males than females reported engaging in three or more activities (27% vs. 18%) (tables D-113 and D-115) (statistical significance of gender-based difference not tested).

Older adults in the lowest-income group were significantly more likely than older adults in either of the other income groups to report engaging in *no* physical activity during the preceding month (figure 38). Forty percent of the lowest-income group reported no physical activities for the preceding month, compared with 32 percent of the low-income group and 20 percent of the higher-income group. The difference between the lowest-income group and the higher-income group was observed for both males and females; however, the difference between the lowest-income group and the low-income group was significant only in the overall analysis (tables D-111, D-113, and D-115).

[1] *Healthy People 2010* used data from the National Health Interview Survey (NHIS), rather than NHANES-III, to establish baselines for goals related to physical activity among adults, and will use NHIS data to monitor trends in this area over time. (U.S. DHHS, 2000b).

Figure 38—Distribution of older adults by number of different physical activities in the past month



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

There were no significant differences between the lowest-income group and the low-income group, overall, in the percentage of older adults who reported engaging in 1, 2, or 3 or more different physical activities during the past month (figure 38). In comparison with the higher-income group, however, older adults in the lowest-income group engaged in fewer activities. Only 10 percent of the lowest-income older adults reported participating in three or more physical activities during the preceding month, compared with 28 percent of higher-income older adults. Similarly, 17 percent of the lowest income group reported engaging in two activities, compared with 25 percent of the higher-income group. And, in the opposite direction, 33 percent of the lowest-income group reported one activity, compared with 28 percent of the higher-income group. This general pattern of between-group differences was noted for both males and females (tables D-113 and D-115).

When data were examined separately for healthy weight persons and overweight/obese persons, there were no significant differences between the lowest-income and low-income groups in the proportions reporting different numbers of physical activities. Differences between the lowest-income group and the higher-income group were observed, however, and they were generally consistent with those observed in the population as a whole (differences between groups were not always statistically significant for the percentage reporting one activity or two activities). Thus, regardless of weight status, older adults in the lowest-income group, whether male or female, were *more* likely than their counterparts in the higher-income group to engage in no physical activity and *less* likely to engage in 3 or more physical activities.

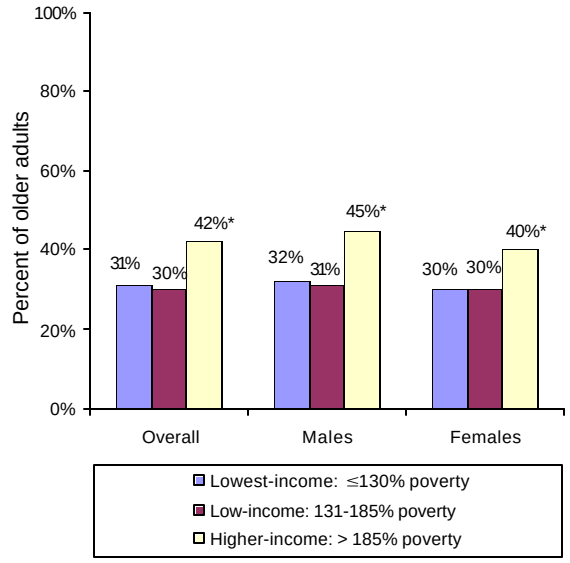
Walking

Data were tabulated separately for the item that asked respondents whether they had walked a mile or more without stopping at least once during the past month. For this specific activity, reported by more older adults than any other item on the list of queried activities (data not shown), there were no statistically significant differences between the lowest-income group and the low-income group. However, older adults in the lowest-income group were less likely than those in the higher-income group to have walked a mile or more without stopping at least once during the past month (figure 39 and table D-117). Thirty-one percent of older adults in the lowest-income group reported doing this, compared with 42 percent of older adults in the higher-income group This pattern was observed for both males and females, regardless of weight status (tables D-118 and D-119).

Weekly Frequency of Physical Activity

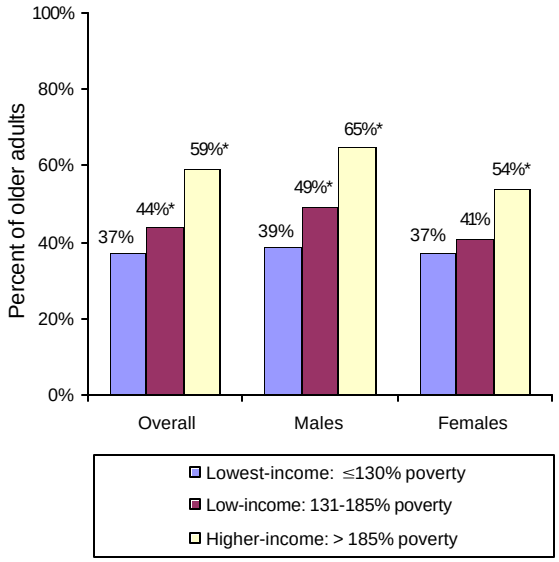
Healthy People 2010 objectives include specific goals for adults regarding frequency of vigorous and moderate activity. The goals call for regular, preferably daily, moderate activity (30 minutes per time) and vigorous activity at least three times per week (20 minutes per time).

Figure 39—Percent of older adults who walked a mile or more without stopping in the past month



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

Figure 40—Percent of older adults who engaged in physical activity at least three per week



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

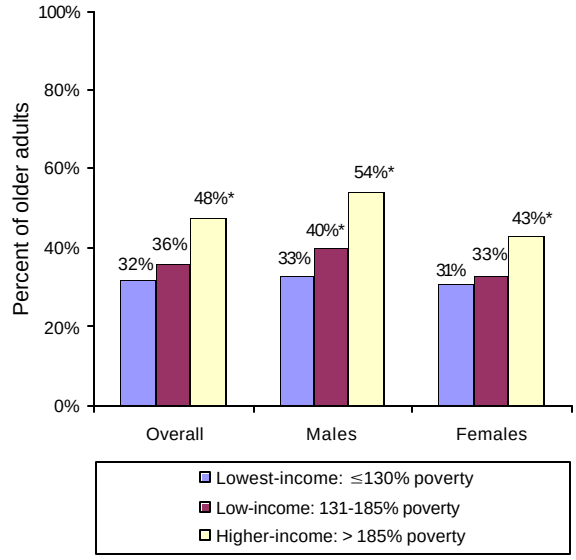
As noted in the introduction to this section, NHANES-III data cannot be used to examine compliance with *Healthy People 2010* goals for frequency of vigorous and moderate activity because NHANES-III lacks information on the intensity and duration of bouts of physical activity.[2] Instead, available data on the reported frequency of physical activity were used to assess the proportion of older adults who engaged in physical activity three or more times per week and the proportion who engaged in physical activity five or more times per week. All reported activities were included in these tabulations.

The data indicate that older adults in the lowest-income group were less likely than older adults in either of the other income groups to be physically active at least three times per week (figure 40 and tables D-120 to D-122). Overall, 37 percent of older adults in the lowest-income group engaged in some type of physical activity three or more times per week, compared with 44 percent of older adults in the low-income group and 59 percent of older adults in the higher-income group. The difference between the lowest-income group and the low-income group was attributable to a difference among males. The difference between the lowest-income group and the higher-income group was observed for both males and females. When data were examined separately by weight status, findings were comparable, and it was clear that the difference between the lowest- and low-income groups was concentrated among overweight/obese males.

These findings were largely replicated in analyses that compared the percentage of older adults reporting physical activity at least five times per week (figure 41 and tables D-123 to D-125). In this analysis, however, the difference between the lowest- and low-income groups was even more concentrated among overweight/obese males.

[2]NHANES-III physical activity data include intensity codes that were assigned to all queried activities and to all additional ("other") activities reported by respondents. However, because all queried activities received the same intensity rating, these data could not be used to identify individuals who engaged in specific activities at greater and lesser levels of intensity.

Figure 41—Percent of older adults who engaged in physical activity at least five times per week



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

Change in Level of Physical Activity Over Time

Respondents were asked how their level of physical activity during the preceding month compared with their level of activity 10 years before. Two-thirds of all seniors reported that their activity level had decreased over the past 10 years (table D-126). Twenty-seven percent said there had been no change in their level of activity, and 7 percent said they were more active now than they had been 10 years ago. The pattern was similar for males and females, regardless of weight status (tables D-128 and D-130).

There were no significant differences between the lowest-income group and the low-income group in reported change in physical activity habits over the past 10 years, regardless of gender or weight status (tables D-126, D-128, and D-130). In comparison with the higher-income group, however, older adults in the lowest-income group were more likely to report that their activity level had stayed the same (20% vs. 29%) (table D-126). This pattern was observed for both healthy weight and overweight/obese older adults, and was largely due to differences among females (tables D-126 and D-130).

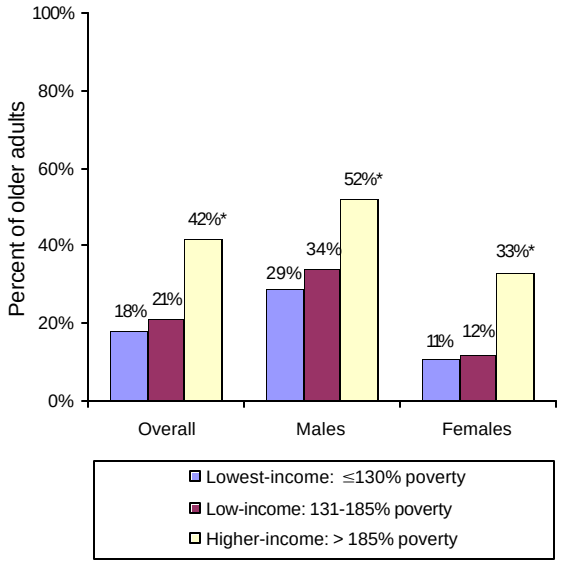
Alcohol Consumption

Respondents were asked whether they had consumed at least 12 alcoholic beverages, not counting small sips, over their lifetime and during the past 12 months. A majority of older adults (79%) reported consuming this amount of alcohol during their lifetime (table D-132). The percentage reporting this level of alcohol consumption was greater for males than for females (90% vs. 71%) and generally decreased with age (statistical significance of gender- and age-based differences not tested).

Older adults in the lowest-income group were significantly less likely than older adults in either of the other income groups to have consumed 12 or more alcoholic beverages during their lifetime (67% vs. 74% and 85%). The difference between the lowest- and low-income groups was significant only for the population as a whole. The difference between the lowest-income group and the higher-income group was also observed separately for both males and females. The difference was most pronounced for females (59% vs. 79%).

Only a third of all older adults reported consuming 12 or more alcoholic beverages during the past year (table D-133). Again, the percentage reporting this level of alcohol consumption was greater for males than for females, and generally decreased with age (statistical significance of gender- and age-based differences not tested). There were no significant differences between the lowest-income group and the low-income group in the percentage reporting 12 or more alcoholic beverages in the past year (figure 42). However, older adults in the lowest-income group were significantly less likely than

Figure 42—Percent of older adults who consumed 12 or more alcoholic beverages in the past year



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

older adults in the higher-income group to report this level of alcohol consumption (18% vs. 42%). This pattern was noted for both males and females. Again, the difference between the lowest-income group and the higher-income group was most dramatic for females (11% vs. 33%).

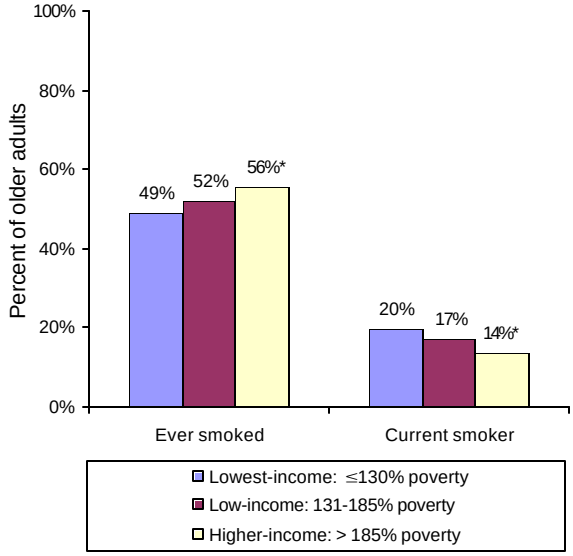
Overall, among older adults who consumed at least 12 alcoholic beverages during the past year, there were no statistically significant differences between income groups in the mean number of drinks consumed on an average drinking day (table D-134). A significant difference was observed, however, among females. When consuming alcohol, females in the lowest-income group consumed more drinks, on average, than females in the higher-income group (the point estimate for the lowest-income group is statistically unreliable).

Tobacco Consumption

More than half (53%) of all adults 60 years and older reported that they had been (or were) smokers (table D-135). This includes all persons who reported having smoked at least 100 cigarettes (5 packs) in their lifetime. The proportion of males who reported that they had ever smoked was greater than the proportion of females (71% vs. 41%) (statistical significance of gender-based difference not tested). A substantially smaller proportion of older adults—15 percent overall—reported that they were current smokers (defined as having smoked any cigarettes in the past 5 days, regardless of whether 100 or more cigarettes had been smoked over a lifetime) (table D-136). Comparable percentages of males and females reported current cigarette use.

There was no significant difference between the lowest-income group and the low-income group in the percentage of older adults who ever smoked (consumed at least 100 cigarettes in their lifetime) (figure 43). However, older adults in the lowest-income group were less likely than older adults in the higher-income group to have ever smoked (49% vs. 56%). This difference was concentrated among 70-84-year-olds and was not observed in either of the gender-specific analyses (table D-135).

Figure 43—Percent of older adults who were or are smokers



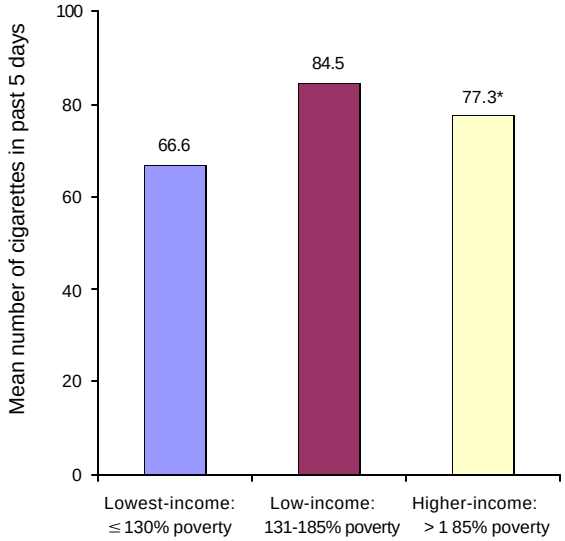
*Statistically significant difference from lowest-income group at the .05 level or better.
Source: NHANES-III, 1988-94.

The direction of the significant between-group difference was reversed for current smoking status. For this measure, there continued to be no significant difference between the lowest-income and low-income groups. However, older adults in the lowest-income group were *more* likely than older adults in the higher-income group to report current cigarette use (20% vs. 17% vs. 14%) (figure 43 and table D-136). This pattern was observed for both males and females.

Current use of pipes, cigars, and chewing tobacco, although less common than cigarettes, was also greater in the lowest-income group than in the higher-income group (table D-137). This difference was noted for both males and females. Among females, the difference between the lowest-income and low-income groups was also statistically significant, although point estimates for both low-income and higher-income females are statistically unreliable.

Among current smokers, those in the lowest-income group smoked significantly fewer cigarettes than those in the higher-income group (figure 44 and table D-138). Smokers in the lowest-income group averaged 66.6 cigarettes during the preceding 5-day period, or about two-thirds of a pack per day. This compares with an average of 77.3 cigarettes (about three-quarters of a pack per day) for the higher-income group. Smokers in the low-income group smoked the most cigarettes (84.5 cigarettes over 5 days); however, because of large standard errors, the difference between means for the lowest-income and low-income groups was not statistically significant at the population level. When the data were examined by gender, the difference between these two groups was statistically significant for males (68.5 cigarettes over 5 days for the lowest-income males, compared with an average of 100.7 cigarettes over 5 days for the low-income males) (table D-138).

Figure 44—Mean number of cigarettes smoked by older adult smokers in the past 5 days



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

Mean Age Began Smoking

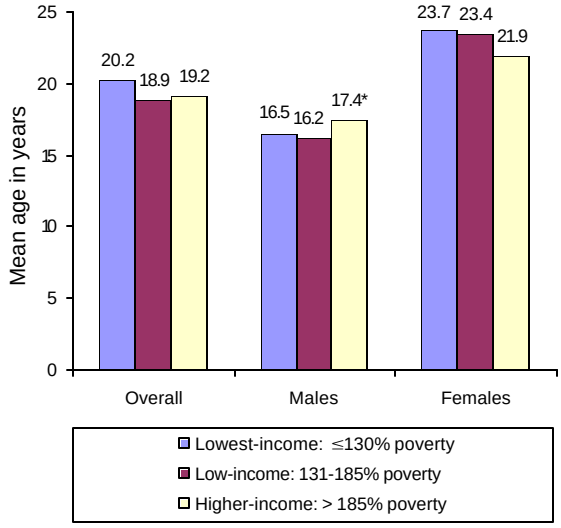
On average, older adult smokers were 19.4 years old when they started smoking (table D-139). Males tended to start smoking at an earlier age than females (17.1 years vs. 22.7 years), and those in the youngest age groups generally started smoking at an earlier age than those in the oldest age groups (statistical significance of gender- and age-based differences not tested).

Overall, there were no significant differences between income groups in the mean age at which smokers began smoking (figure 45). Among males, however, the lowest-income group started smoking about a year earlier than the higher-income group (16.5 years vs. 17.4 years).

Exposure to Second-hand Smoke

NHANES-III collected information on the number of smokers living in each household and the number of cigarettes smoked by those individuals. These data indicate that there was no difference between the lowest-income group and the low-income group in the extent to which

Figure 45—Mean age when older adults became regular smokers



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

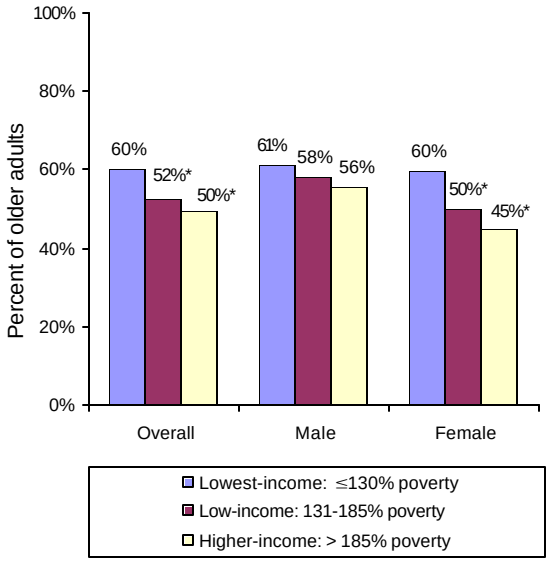
nonsmoking older adults were exposed to tobacco smoke produced by other household members (table D-140). On the other hand, nonsmoking older adults in the lowest-income group were significantly more likely to be exposed to second-hand smoke than nonsmoking older adults in the higher-income group. Fourteen percent of nonsmokers in the lowest-income group lived with at least one smoker. The comparable figure for nonsmokers in the higher-income group was 7 percent. This difference was also noted separately for females but not for males. The difference for females was concentrated among 60-64-year-olds.

Among nonsmoking older adults residing with at least one smoker, there were no between-group differences, overall, in the "dose" of second-hand smoke exposure, based on the mean number of cigarettes smoked per day by resident smokers (table D-141). When the data were examined separately be gender, however, differences between the lowest-income group and the higher-income group were observed for both males and females. For both genders, older adults in the lowest-income group were exposed to significantly more smoke than older adults in the higher-income group. There were also scattered differences between income groups for specific gender-and-age subgroups.

NHANES-III measured serum cotinine in all respondents 4 years of age and older. Cotinine is a breakdown product of nicotine, and is used as a biological marker for tobacco use and exposure to environmental tobacco smoke. Results of the serum cotinine tests were generally consistent with the preceding findings about the likelihood of second-hand smoke exposure. They suggest, however, that statistically insignificant differences between the lowest- and low-income groups in this regard may have substantive importance.

The percentage of nonsmoking older adults with high serum cotinine levels was significantly greater for the lowest-income group than for either of the other income groups (60% vs. 52% and 50%) (figure 46 and table D-142). These differences were concentrated among females.

Figure 46—Percent of older adult nonsmokers with high serum cotinine levels



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

Social Interaction

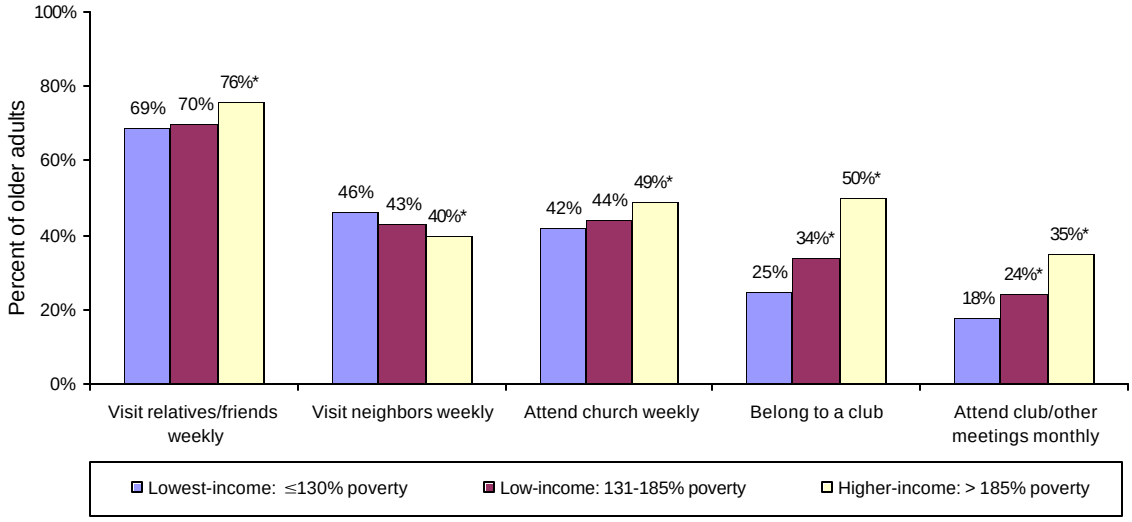
As noted in the introduction to this chapter, social interaction is a crucial part of healthy aging. NHANES-III assessed socialization among older adults through a series of questions that asked respondents how often they had specific types of social interaction: telephone conversations with family, friends, or neighbors, in-person visits with friends or relatives, in-person visits with neighbors, church attendance, membership in clubs or other organizations, and attendance at club or organizational meetings. Responses were tabulated to show the percentage of older adults who (a) talked on the phone at least daily, (b) had in-person visits with friends or relatives at least weekly, (c) had in-person visits with neighbors at least weekly, (d) attended church at least weekly, (e) belonged to a club or other social organization, and (f) attended meetings of clubs or other organizations at least once per month.

Overall, more than half (55%) of older adults talked on the phone an average of once per day with friends, relatives, or neighbors (table D-143). More women tended to have daily telephone conversations than men (67% vs. 39%) (statistical significance of gender-based difference not tested). There were only two isolated significant differences between income groups on this measure.

Data for other types of social interactions are summarized in figure 47 and tables D-144 to D-148. For most of these social interactions, there were no overall differences between the lowest-income group and the low-income group. Exceptions included (a) belonging to a club or other social organization and (b) attending meetings of clubs or other organizations at least monthly. Older adults in the lowest-income group were significantly less likely than older adults in the low-income group to engage in these related types of social interaction.

In comparison with older adults in the higher-income group, older adults in the lowest-income group were less likely to participate in four of the five types of social interaction examined in this analysis. This included visiting friends or relatives at least weekly (69% vs. 76%), attending church at least weekly (42% vs. 49%), belonging to a club or organization (25% vs. 50%), and attending meetings of a club or organization at least monthly (18% vs. 35%).

Figure 47—Percent of older adults who engaged in different types of social interaction



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

The one type of interaction for which the trend was reversed was visiting neighbors at least weekly. Older adults in the lowest-income group were *more* likely than older adults in the higher-income group to have this level of interaction with neighbors (46% vs. 40%).

There was some variation in these patterns by gender and age. Although there were isolated differences for specific age-and-gender subgroups that did not conform to the pattern observed for the population as a whole, the between-group differences described for church attendance, belonging to a club or other organization, and attending meetings of a club or other organization were generally true for both males and females (tables D-146 to D-148). The difference between the lowest-income and higher-income groups related to visiting relatives and friends at least weekly was concentrated among 60-69-year-olds, especially females, and 75-79-year-olds, especially males (table D-144). Finally, the difference between the lowest-income group and the higher-income group in the percentage of older adults who visited at least weekly with neighbors was concentrated among 60-64-year-olds and 70-74-year-olds, especially females (table D-145).

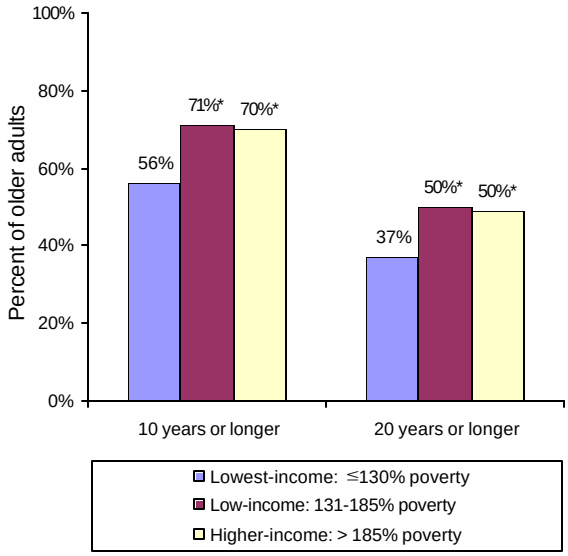
Long-term Home Addresses

Stability of the home environment may also influence social interaction. Individuals who have lived for a long period of time at the same address may be more likely than those with less established roots to feel a part of a community and to have a network of friends and acquaintances. To assess the relative stability of older adults' living situations, survey responses about the length of time spent at the current address were used to determine the percentage of older adults who lived at the same address for 10 or more years and the percentage who lived at the same address for 20 or more years.

Overall, 67 percent of older adults lived at their current address for 10 or more years and 47 percent lived at their current address for 20 or more years (tables D-149 and D-150). Results were similar for males and females.

Older adults in the lowest-income group had less stable housing over the past two decades than older adults in the other two income groups (figure 48). Fifty-six percent of older adults in the lowest-income group lived at the same address for 10 or more years. In both the low-income and higher-income groups, approximately 70 percent of older adults lived at the same address for a decade or more. Similarly, 37 percent of older adults in the lowest-income group lived at the same address for 20 years or more, compared with 50 percent of older adults in each of the other income groups. These patterns were observed for both males and females.

Figure 48—Percent of older adults with long-term home addresses



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