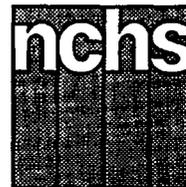


Advance Data



From Vital and Health Statistics of the CENTERS FOR DISEASE CONTROL AND PREVENTION/National Center for Health Statistics

Injury Prevention Measures in Households With Children in the United States, 1990

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Introduction

As the leading cause of death among children, injuries claim more children's lives annually than the next six causes of childhood death combined (1,2). Motor vehicle accidents are the major cause of deaths due to injury in childhood. In 1991, the motor vehicle fatality rate for children ages 5–14 was 5.6 per 100,000 persons. In the same year, the death rate for the same age group from other accidents and adverse effects—which includes deaths from fires, drownings, poisonings, suffocation, firearms, and falls—was 4.6 persons per 100,000 persons (2). Injuries lead not only to excess mortality but also to permanent and temporary disability and substantial economic costs. Each year, the consequences of childhood injuries include 30,000 permanent disabilities, 600,000 hospitalizations, and 16 million emergency room visits (3).

Healthy People 2000, the health-related goals set by the U.S. Department of Health and Human Services, acknowledges and addresses the need for childhood injury prevention in the United States (4). *Healthy People 2000* targets reductions in injury-related

death rates and increases in individual use of preventive devices, such as car restraints and smoke detectors, and expansions of injury prevention education in schools and primary care sites. In addition, *Healthy People 2000* highlights the importance of targeting interventions for achieving these goals at high-risk populations. Children are among the high-risk populations identified for injury-related deaths due to motor vehicle crashes, drownings, poisonings, and residential fires.

Subgroups within each target population at greatest risk for suffering injuries must be identified. By doing so, interventions specifically designed to increase the awareness and utilization of injury prevention techniques within these subgroups may be developed and implemented. This process allows resources to be devoted to decreasing risk among those individuals, families, and communities most vulnerable and enhances the potential of these programs to meet the *Healthy People 2000* goals.

To target high-risk populations, the sociodemographic correlates of injury prevention behaviors must be identified. Past efforts to describe the

sociodemographic characteristics associated with increased childhood injury risk have highlighted related factors; however, findings vary across studies, are not consistently significant, and are not often generalizable to the nation as a whole. Factors such as family income; mother's marital and employment status; educational attainment; age, race, number of children in the household; and child's personality characteristics have been found to be associated with childhood injury experience (5–10).

The literature on parental knowledge and utilization of injury prevention techniques suggests that parents underestimate the threat posed by childhood injuries (11–12). While the majority of parents claim to use prevention control measures, the usefulness of the measures employed, such as "being careful," remains questionable at best. Of those precautions mentioned, only the parental assessment of child safety restraints was consistent with the true efficacy of the approach. Evidence suggests that parents of higher socioeconomic status were more likely to use effective injury



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prevention measures than their low income counterparts (12).

The current literature offers limited information on the correlates of parental knowledge and utilization of injury prevention measures. This analysis uses data from the National Health Interview Survey (NHIS) on Injury Control and Child Health to describe the knowledge and use of injury prevention techniques in households with children by selected sociodemographic and geographic characteristics. With these estimates, the progress toward the *Healthy People 2000* goals can be tracked as well as aided by the identification of population groups at high risk of injury.

Methods

This report uses data from the 1990 NHIS. The survey, performed each year since 1957, collects demographic and health data on the noninstitutionalized, civilian population of the United States from which national estimates of household and individual characteristics, disease incidence and prevalence, general health status measures, and health services utilization can be estimated. The interview contains two portions each year: the basic questionnaire, which collects similar information each year, and topic-specific annual questionnaires. In 1990, the Injury Control and Child Safety and Health questionnaire collected data on the household characteristics of all children from the household. Data on 33,243 children were collected from the respondent adult in the household.

Using SUDAAN, a SAS-based statistical package, the injury prevention knowledge and behavior patterns of the household in which the sample child resides are presented by various sociodemographic characteristics. The SUDAAN package estimates standard errors, which account for the effect of a complex, multistage sampling design such as the one used for the NHIS (13). The prevention measures of interest include the utilization of restraint devices in motor vehicles, possession of a functional smoke detector, awareness of poisoning-related interventions, and use of appropriate scald prevention techniques. Child characteristics

explored include age, gender, race, and Hispanic origin. Children are also classified by the attributes of their household—including family structure, the educational attainment of the responsible adult in the household, household income, and number of household members—as well as by geographic characteristics of their household—including region of the country, residential setting, and housing type.

The Injury Control and Child Health Supplement questionnaire contains data regarding the knowledge and use of measures aimed at the prevention of injuries due to residential fires, scalds, unintentional poisonings, and motor vehicle accidents. For a number of measures, data collection targeted only children in those age groups for which the information was appropriate. Poisoning prevention data were collected for children under the age of 10. Safety restraint includes the use of car safety seats for those children under 5 and seat belt use for those children ages 5–17. All other estimates refer to all children 17 years of age and under.

The Technical notes portion of this report details information regarding the survey design, sampling procedure, and the NHIS questionnaire document. It also describes the weighting procedures, the establishment of the reliability of estimates, and the adjustment of the standard errors required by the sampling design. The means of determining statistical significance are also included. All comparisons reported in the text are statistically significant at the 0.05 level unless otherwise noted.

Tables 1–5 contain national estimates of the number and percentage of children living in households in which various injury prevention techniques are known and employed. In addition to the overall estimates, the percentage of children in these households are shown by selected demographic characteristics. These percentages allow for the comparison of injury prevention behaviors across various groups and identify those groups less likely to know about and use preventive measures. Interventions targeted for and tailored to these groups

may enhance progress toward the year 2000 objectives.

Results

Use of the household injury prevention measures varies considerably across measures and among various sociodemographic groups. In general, the use of smoke detectors and car safety restraints exceeds the use of scald and poison prevention measures. The use of prevention measures varies consistently across race and ethnic groups, educational level of the responsible adult, and household income and poverty status. For certain measures, differences in use also exist by family types, housing types, residential area, and region.

Fire prevention

As shown in table 1, approximately 66.6 percent of respondents in households with a child under the age of 17 claimed to have at least one functional smoke detector in the residence. Respondents were also asked to identify appropriate means for testing the smoke detector. Accurate means include testing, going off due to smoke and/or cooking, changing batteries, checking the light indicator, or listening for the low battery warning beep. Among children under 17 years of age, 64.7 percent lived in households where the smoke detector had been tested appropriately. Respondents were also asked the proximity of the detector to the sleeping quarters. Smoke detectors located near sleeping areas are more likely to wake household members during a fire. Smoke detectors were located near sleeping areas in households of 62.7 percent of children.

White and non-Hispanic persons were more likely than their black and Hispanic counterparts to have a functional smoke detector, test it appropriately, and have one located near to a sleeping area. Children living in households where the educational level of the responsible adult was below 12 years were less likely to indicate use of these measures than those residing in households in which the responsible adult had 12 or more years of education. Likewise, household use of these

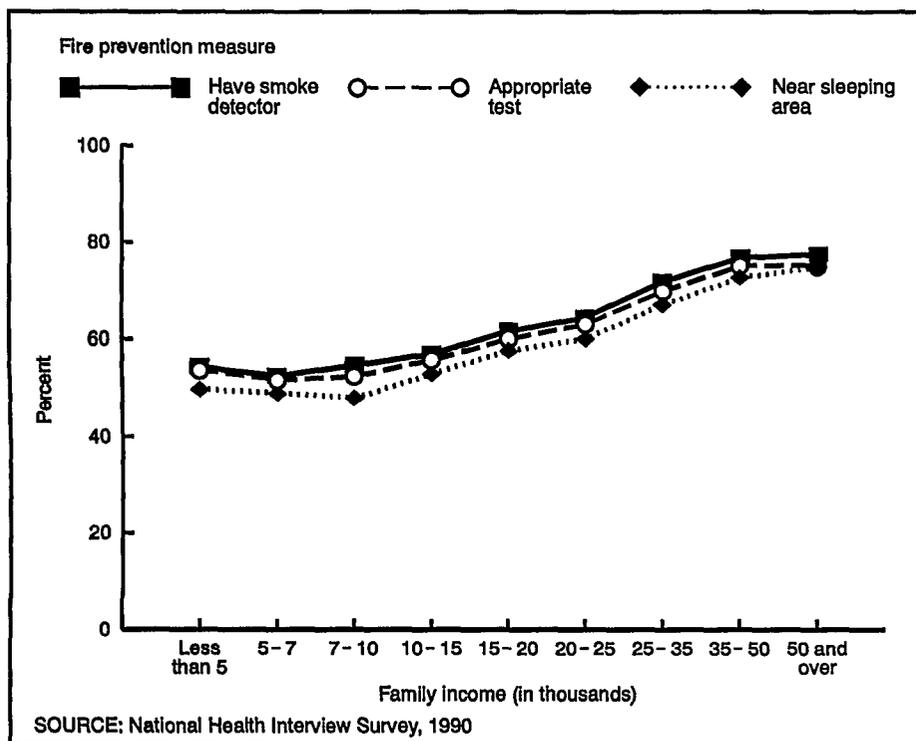


Figure 1. Percent of children in households using fire prevention measures: United States, 1990

measures increased with the income level of the household (see figure 1). Compared with children living with both biological parents, children living with their biological mother only or in some other type of family household were less likely to reside in households participating in the fire prevention measures previously described. Children residing in households with six or more members were less likely than those in households with three to five members or two or fewer members to be protected by household use of fire prevention measures.

The geographic variables examined include housing type, residential area, and region of the country. Housing type was not significantly related to use of smoke detectors. However, children living in metropolitan statistical areas (MSA), non-central city, were more likely than those living in central cities or non-metropolitan areas to live in households taking fire prevention measures. Likewise, those living in the Midwest were more likely to use these measures than those living in the Northeastern, Southern, and Western regions of the United States.

Scald prevention

Table 2 shows the prevalence of scald prevention measures usage to be much lower than that of fire prevention measures. The scald prevention measures examined are household hot water temperature known, household hot water temperature set below 125 degrees Fahrenheit, hot water temperature tested appropriately, thermometer used to test the water temperature in the last 12 months, and safe water temperature known. Overall, 23.1 percent of children under 17 live in households where the water temperature is known. Only 9.2 percent of children live in households where the water temperature is known to be below 125 degrees; yet, 21.5 percent of respondents cited the scalding temperature of water to be at or above 125 degrees. There is a discrepancy between knowledge and action in the adoption of scald prevention measures. Appropriate means of testing water temperature include using a thermometer and checking the hot water tank setting. Only members of the households of 17.3 percent of U.S. children know and use these means to

test their water temperature. Only 3.2 percent of children reside in households where the water temperature has been tested by a thermometer in the last 12 months.

White persons were more likely than non-white persons to use all scald prevention measures examined, except knowing safe water temperature. Non-Hispanic persons were more likely to participate in these practices than Hispanic persons. As with fire prevention measures, the use of scald prevention measures increases with level of education and income. Those with 12 or more years of education were significantly more likely to employ these techniques than those with less than 12 years of education. Children living in households below the Federal poverty level are less likely than those living at or above this level to participate in these preventive measures. Figure 2 depicts the relationship between income level and use of scald prevention measures. Children living with their biological parents were more likely than those living with their biological mother only or in other family types to be in a household where the water temperature is known, below 125 degrees, and tested appropriately. Those households with two or fewer members were less likely than those with three to five members to use these methods.

As with fire prevention measures, use of scald prevention measures does not seem to vary by housing type. Those children living in mobile homes or other residence types were equally likely as those in houses, apartments, or flats to be in a household utilizing these measures. Only those living in MSA-central cities were less likely than those living in MSA-non-central cities to be in households where the water temperature was known, below 125 degrees, and tested appropriately. Those living in the Midwest are more likely than those living in the Northeast, South, and West to reside in households where the water temperature is known. Children living in the West were less likely than those in the Midwest to be in households where the water temperature was known to be below 125 and tested appropriately.

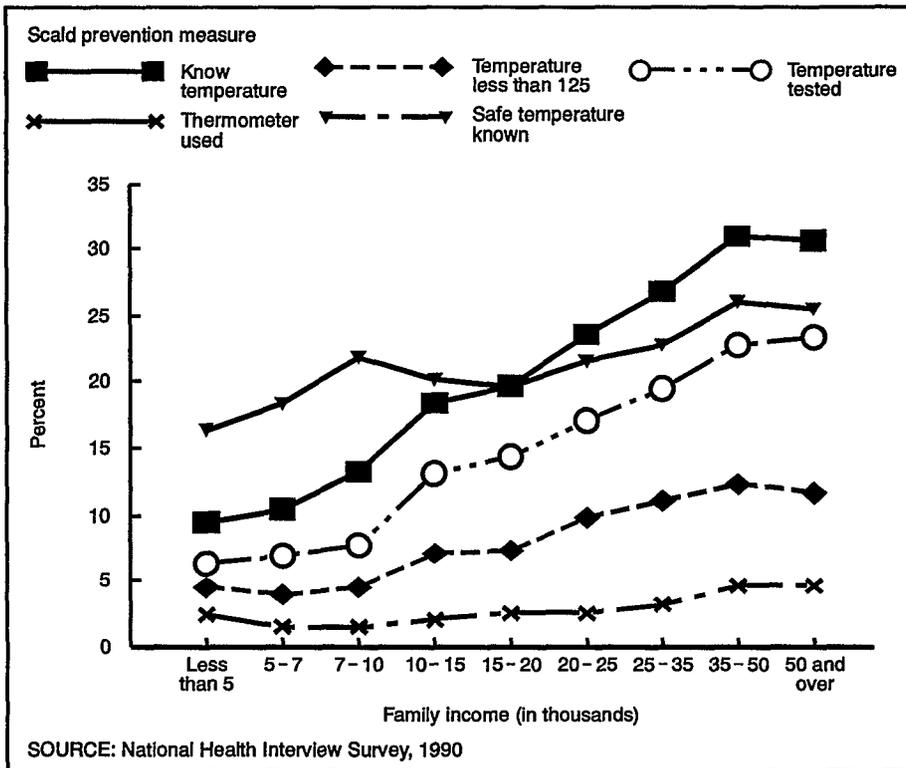


Figure 2. Percent of children in households using scald prevention methods: United States, 1990

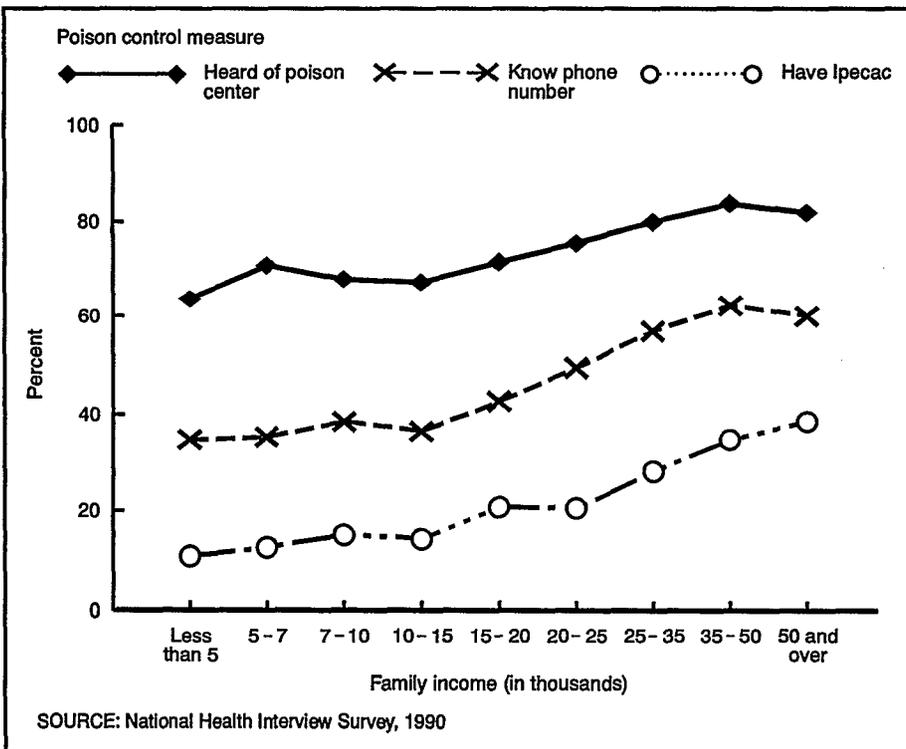


Figure 3. Percent of children in households using poison control measures: United States, 1990

Poison control

As previously stated, the poison control questions were asked of

respondents only in households where the sample child was below the age of 10. The poison control measures examined include familiarity with the

Poison Control Center, having the telephone number of the local Poison Control Center, and availability of ipecac syrup in the household. These findings are presented in table 3. While the majority of children (74.4 percent) lived in households in which the respondent had heard of the Poison Control Center, only 49.7 and 25.6 percent of children lived in households where the number of the Poison Control Center was known or had ipecac on hand, respectively.

The differential use of poison control measures among various sociodemographic groups follows trends similar to those identified in the analysis of fire and scald prevention measures. White persons and non-Hispanic persons are more likely to use these means than their non-white and Hispanic counterparts, respectively. Only the use of ipecac syrup was higher among those families with a sample child between the ages of 1-4 as compared with the other age groups. This is an especially important finding given that toddlers are at greatest risk for poison-related deaths. As with other preventive measures, poison control measures increase with education and income. As shown in figure 3, those children with family incomes of \$50,000 per year and above were more likely than those in income categories below \$25,000 per year to use these measures. Similarly, those living at or above the Federal poverty level were more likely to use these means. Children living in households with their biological parents and those in households with three to five members were more likely to be in households where the number to the Poison Control Center was known and ipecac was on hand than those children in households of other family types and sizes.

Children living in mobile homes were less likely to have ipecac on hand in the household than those living in houses, apartments, or flats. Likewise, those living in central cities were less likely than those in MSA, non-central cities to participate in any of the poison control measures examined. Those living in non-metropolitan, non-farm households were less likely than their MSA-non-central city counterparts to have ipecac on hand. With the exception of the use of ipecac syrup in the

Northeast, residents of the Midwest were more likely to use poison control measures than those residing in other regions of the country.

Car safety

The analysis, shown in table 4, demonstrates that use of car safety seats among those children under the age of 5 is fairly prevalent. Of those children under the age of 5, 76 percent had been brought home from the hospital in a car safety seat. At the time of the interview, nearly 65 percent of the sample children currently had a car safety seat. The majority (59.4 percent) of the sample children were reported to "always" use their car safety seat, while only a fraction (0.7 percent) never used one. The use of safety seats decreased with age as older children substitute seat belts for car seats. Infants under 1 year were significantly more likely than those children between the ages of 1–4 to have a car seat and "always" use it. Moreover, those children under the age of 1 year were slightly more likely to have been brought home from the hospital in a car seat than their older counterparts. Some of these differences may be due to a cohort effect with later cohorts of children more likely to be placed in car seats. This may be due to increased awareness of the effectiveness of car safety seats in reducing motor vehicle related injuries as well as changes in State laws as they relate to car seat use. Those children in households where the respondent's seat belt use frequency was reported as "always" were more likely than those children in households in which the respondent's use was reported as "often," "sometimes," or "never" to have been brought home from the hospital in a car safety seat, to presently have a safety seat and "always" use the safety seat.

Consistent with the other preventive measures examined, the associations between race, ethnicity, household education, income, and car safety seat use mirror the relationships previously described between these variables and other preventive measures. Figure 4 shows the relationship between income level and use of car safety seats and seat

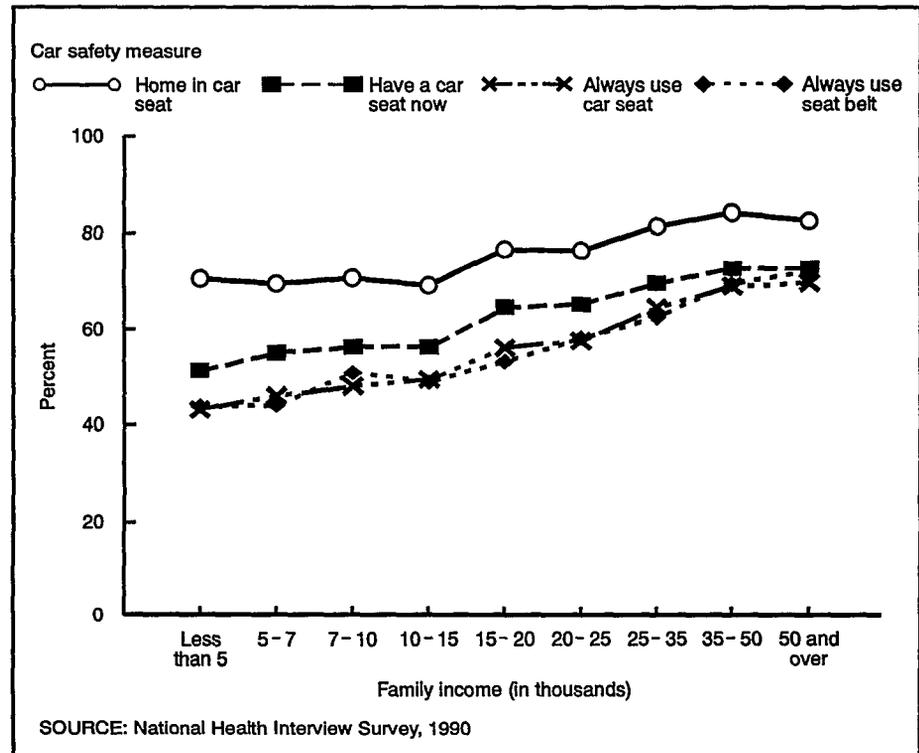


Figure 4. Percent of children using car safety seats and seat belts: United States, 1990

belts. Children living with their biological parents were more likely than those living with their biological mother only or in other family types to have a car seat and "always" use it. Children from households with two or fewer members or six or more members were less likely than those in households with three to five members to have a car safety seat and "always" use it.

The relationships between the three geographic variables and car restraint use is less consistent than the relationships between these variables and other preventive measures. Children from families residing in MSA, non-central city households were more likely to have a car safety seat and "always" use it than those living in MSA, central city areas. However, children from MSA, non-central cities were less likely than those from non-MSA farm households to have been brought home from the hospital in a safety seat, to presently have a safety seat, and to "always" use the safety seat.

The frequency of seat belt use by sample children between the ages of 5–17 is presented in table 5. Among these children, 60.2 percent "always"

use their seat belts. However, children above the age of 9 are less likely to "always" use their seat belts than their 5–9-year-old counterparts. Lower rates of seat belt use among children may explain the nearly tenfold difference in motor vehicle fatality risk between children 15–19 years of age and those under the age of 10 (14). The practice of "always" using one's seat belt is lower among those children who are non-white, as it is among Hispanic children. The percent of children always using their seat belt increases with the educational level of the responsible adult in the household, the income level of the family, and the frequency with which the respondent uses his/her seat belt. Children living in households where both biological parents are present are more likely than those in all other family types to "always" use their seat belt. Children living in MSA, non-central city areas and those residing in the Midwest are more likely than those living in other residential areas and regions to "always" wear their seat belt.

Discussion

The results presented here indicate that certain sociodemographic

characteristics are associated with the knowledge and use of household preventive measures. Specifically, these variables include race, ethnicity, educational attainment of responsible adult, family income level, and poverty status. In addition, family structure and size seems to be associated with most preventive measures, with those children from intact families and those with families of three to five members being more likely to be in households adopting preventive practices than children from other family types and sizes. Of the geographic variables examined, only region and residential area have an association with any of the preventive measures examined. Housing type failed to be associated with most measures. This is especially interesting in light of the finding in a previous study that mobile home residents were at increased risk for fire-related mortality; yet, they experienced less of a protective effect from smoke detectors than those living in other housing types (15). In that study, the presence of a smoke detector in a mobile home had less influence on the likelihood of a death resulting from a fire in the residence than in other housing types. This report corroborates this finding and suggests that this increased risk may be due to some other factor than smoke detector utilization.

Data from the NHIS questionnaire on Injury Control and Child Health and Safety provide timely national estimates of the prevalence of household adoption of injury prevention measures. While the majority of households utilize the fire prevention and car safety measures examined, increased adoption of these behaviors remains necessary to reach the year 2000 objectives. Only a small percent of children live in households that use scald prevention and poison control techniques. This report provides useful insight into the association between the knowledge and use of household injury prevention measures and sociodemographic characteristics for those households with children. The findings identify populations at risk and serve as a useful guide for the classification of populations with limited knowledge and use of injury prevention measures. Future injury reduction

interventions should incorporate this information into the design and implementation of their programs.

A public use data file based on the 1990 NHIS Injury Control and Child Health questionnaire is available. Information regarding this data file may be obtained by writing to the Systems and Programming Branch, Division of Health Interview Statistics, 6525 Belcrest Road, Hyattsville, MD 20782.

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Table 1. Percent (and standard error) of children living in households using specified fire prevention measures, by selected sociodemographic characteristics: United States, 1990

Characteristic	All children ages 0-17 Number (in thousands)	Functional smoke detector in the household		Smoke detector tested appropriately		Smoke detector located near sleeping area	
		Percent	(standard error)	Percent	(standard error)	Percent	(standard error)
Total ¹	64,651	66.6	(0.55)	64.8	(0.55)	62.7	(0.56)
Children's characteristics							
Race:							
White	52,062	68.2	(0.60)	66.2	(0.60)	64.7	(0.60)
Non-white	12,590	60.1	(1.17)	58.7	(1.18)	54.5	(1.20)
Hispanic origin:							
Non-Hispanic	56,012	68.4	(0.57)	66.6	(0.57)	64.8	(0.58)
Hispanic	8,640	54.7	(1.40)	52.8	(1.42)	49.2	(1.41)
Age:							
Less than 1 year	4,075	67.8	(1.17)	65.7	(1.20)	63.2	(1.21)
1-4 years	15,010	67.7	(0.73)	66.0	(0.74)	63.8	(0.75)
5-9 years	18,366	67.6	(0.73)	65.7	(0.74)	63.8	(0.73)
10 years or older	27,201	65.1	(0.64)	63.3	(0.65)	61.4	(0.67)
Sex:							
Male	33,086	66.6	(0.61)	64.8	(0.62)	62.8	(0.62)
Female	31,565	66.6	(0.62)	64.8	(0.62)	62.7	(0.62)
Household characteristics							
Responsible adult's education:							
Less than 12 years	8,886	50.3	(1.39)	48.5	(1.41)	45.6	(1.39)
12 years	23,640	63.9	(0.84)	62.3	(0.85)	59.9	(0.84)
More than 12 years	31,738	73.9	(0.61)	71.9	(0.62)	70.3	(0.63)
Family structure:							
Biological mother and father	45,279	69.3	(0.59)	67.5	(0.60)	65.7	(0.61)
Biological mother only	10,318	66.1	(1.10)	64.1	(1.12)	61.6	(1.14)
Other	8,848	54.0	(1.21)	52.3	(1.23)	49.5	(1.20)
Family size:							
2 or fewer persons	2,893	66.7	(1.52)	64.2	(1.55)	62.2	(1.57)
3-5 persons	50,439	69.0	(0.52)	67.1	(0.53)	65.3	(0.54)
6 or more persons	11,319	55.7	(1.44)	54.4	(1.46)	51.6	(1.45)
Income:							
Less than \$5,000	2,697	54.6	(2.44)	53.7	(2.45)	49.9	(2.49)
\$5,000-\$6,999	1,530	52.6	(3.24)	51.8	(3.22)	49.1	(3.17)
\$7,000-\$9,999	2,487	54.8	(2.36)	52.6	(2.39)	48.0	(2.44)
\$10,000-\$14,999	4,965	57.1	(1.61)	55.9	(1.63)	53.1	(1.63)
\$15,000-\$19,999	5,567	61.8	(1.63)	60.1	(1.67)	57.8	(1.61)
\$20,000-\$24,999	4,697	64.4	(1.49)	63.1	(1.47)	60.1	(1.52)
\$25,000-\$34,999	9,872	71.9	(1.11)	69.9	(1.13)	67.1	(1.15)
\$35,000-\$49,999	11,372	76.9	(0.90)	75.1	(0.93)	72.8	(0.95)
Greater than \$50,000	12,687	77.5	(0.90)	74.9	(0.93)	74.7	(0.93)
Poverty status:							
At or above the poverty level	49,550	71.8	(0.55)	69.9	(0.55)	68.0	(0.56)
Below the poverty level	10,458	52.5	(1.39)	51.5	(1.40)	48.0	(1.41)
Geographic characteristics							
Housing type:							
House, apartment, flat	60,240	66.7	(0.54)	64.8	(0.54)	62.8	(0.55)
Mobile home	3,617	66.3	(2.56)	65.5	(2.52)	63.5	(2.54)
Other	794	58.1	(4.51)	58.0	(4.51)	53.7	(4.51)
Residential area:							
MSA, central city	19,211	64.5	(0.91)	62.7	(0.91)	59.4	(0.94)
MSA, non-central city	31,178	69.6	(0.70)	67.6	(0.71)	66.2	(0.71)
Non-MSA, non-farm	13,606	63.8	(1.53)	61.6	(1.55)	59.8	(1.51)
Non-MSA, farm	656	59.3	(3.57)	57.3	(3.70)	55.8	(4.00)
Region:							
Northeast	11,802	70.2	(1.02)	68.3	(1.02)	64.6	(1.12)
Midwest	15,833	73.6	(1.12)	71.9	(1.15)	69.7	(1.13)
South	22,725	62.2	(0.95)	60.8	(0.94)	59.0	(0.95)
West	14,291	62.9	(1.18)	60.3	(1.20)	59.3	(1.18)

¹Includes children with unknown family income and other missing data.

Table 2. Percent (and standard error) of children in households taking scald prevention measures, by selected sociodemographic characteristics: United States, 1990—Con.

Characteristics	All children ages 0-17 Number (in thousands)	Known hot water temperature		Hot water temperature set below 125 degrees		Water temperature tested appropriately		Thermometer used to test water temperature in the last 12 months		Temperature at which water scalds known by respondent	
		Percent	(standard error)	Percent	(standard error)	Percent	(standard error)	Percent	(standard error)	Percent	(standard error)
Total ¹	64,651	23.1	(0.46)	9.2	(0.29)	17.3	(0.44)	3.2	(0.15)	21.5	(0.44)
Child characteristics											
Race:											
White	52,061	26.0	(0.54)	10.2	(0.34)	19.7	(0.51)	3.6	(0.17)	21.7	(0.48)
Non-White	12,590	11.0	(0.66)	5.3	(0.46)	7.1	(0.53)	1.8	(0.26)	20.9	(0.93)
Hispanic origin:											
Non-Hispanic	56,012	24.9	(0.50)	9.8	(0.32)	18.8	(0.48)	3.4	(0.16)	22.0	(0.47)
Hispanic	8,640	11.0	(0.77)	5.2	(0.57)	7.2	(0.68)	2.0	(0.36)	18.4	(1.07)
Age:											
Less than 1 year	4,075	20.8	(1.04)	9.9	(0.76)	15.1	(0.90)	3.5	(0.51)	24.1	(1.03)
1-4 years	15,010	21.7	(0.62)	10.0	(0.47)	16.4	(0.58)	3.6	(0.25)	23.2	(0.63)
5-9 years	18,366	24.1	(0.66)	9.8	(0.43)	18.2	(0.64)	3.3	(0.23)	22.2	(0.67)
More than 10 years	27,201	23.5	(0.55)	8.3	(0.34)	17.5	(0.51)	2.9	(0.19)	19.8	(0.51)
Sex:											
Male	33,086	23.2	(0.52)	9.2	(0.33)	17.5	(0.49)	3.2	(0.17)	20.9	(0.48)
Female	31,565	22.9	(0.53)	9.3	(0.34)	17.0	(0.50)	3.2	(0.17)	22.1	(0.52)
Household characteristics											
Responsible adult's education:											
Less than 12 years	8,886	12.2	(0.91)	5.2	(0.60)	7.9	(0.71)	1.4	(0.27)	15.5	(1.01)
12 years	23,640	20.7	(0.65)	7.7	(0.38)	15.5	(0.62)	3.0	(0.26)	19.2	(0.65)
More than 12 years	31,738	28.1	(0.64)	11.6	(0.44)	21.4	(0.61)	3.9	(0.23)	25.1	(0.59)
Family structure:											
Biological mother and father	45,279	27.2	(0.56)	10.9	(0.37)	20.7	(0.54)	3.7	(0.19)	22.3	(0.52)
Biological mother only	10,318	11.5	(0.69)	5.2	(0.43)	7.6	(0.55)	1.3	(0.23)	21.1	(0.92)
Other	8,866	15.2	(0.80)	5.5	(0.50)	11.0	(0.69)	3.2	(0.39)	18.4	(0.93)
Family size:											
2 or fewer persons	2,893	14.0	(0.96)	6.5	(0.67)	9.4	(0.83)	1.7	(0.37)	20.4	(1.12)
3-5 persons	50,439	24.3	(0.47)	9.6	(0.29)	18.1	(0.43)	3.3	(0.16)	21.9	(0.44)
6 or more persons	11,319	20.0	(1.36)	8.4	(0.82)	15.7	(1.29)	3.1	(0.46)	20.1	(1.27)
Income:											
Less than \$5,000	2,697	9.5	(1.24)	4.5	(0.87)	6.3	(1.08)	2.4	*(0.73)	16.4	(1.59)
\$5,000-\$6,999	1,530	10.5	(1.60)	4.0	(1.04)	7.0	(1.40)	1.5	*(0.63)	18.4	(2.22)
\$7,000-\$9,999	2,487	13.3	(1.85)	4.5	(0.95)	7.8	(1.31)	1.5	*(0.49)	21.9	(2.05)
\$10,000-14,999	4,965	18.4	(1.27)	7.1	(0.83)	13.2	(1.13)	2.0	(0.45)	20.2	(1.26)
\$15,000-\$19,999	5,567	19.0	(1.25)	7.4	(0.83)	14.4	(1.18)	2.5	(0.52)	19.6	(1.22)
\$20,000-\$24,999	4,697	23.6	(1.40)	9.9	(0.89)	17.1	(1.21)	2.5	(0.49)	21.6	(1.35)
\$25,000-\$34,999	9,872	26.0	(1.09)	11.1	(0.75)	19.5	(1.03)	3.2	(0.39)	22.8	(1.03)
\$34,999-\$49,999	11,372	30.0	(0.99)	12.4	(0.75)	22.8	(0.94)	4.6	(0.42)	26.1	(0.95)
Greater than \$50,000	12,687	30.6	(0.92)	11.8	(0.65)	23.4	(0.85)	4.6	(0.42)	25.6	(0.95)
Poverty status:											
At or above the poverty level	49,550	26.4	(0.52)	10.6	(0.34)	20.0	(0.50)	3.7	(0.18)	23.1	(0.49)
Below the poverty level	10,458	13.6	(0.91)	5.2	(0.54)	9.0	(0.79)	2.0	(0.32)	18.8	(1.02)
Geographic characteristics											
Housing type:											
House, apartment, flat	60,240	22.9	(0.47)	9.2	(0.29)	17.1	(0.44)	3.2	(0.15)	21.8	(0.46)
Mobile home	3,617	26.6	(1.90)	10.6	(1.28)	22.2	(1.87)	3.8	(0.75)	15.9	(1.39)
Other	794	17.4	(3.21)	8.2	(2.32)	10.1	(2.50)	2.9	*(1.31)	24.4	(3.92)
Residential area:											
MSA, central city	19,211	16.3	(0.61)	6.4	(0.36)	11.1	(0.52)	2.8	(0.26)	21.8	(0.75)
MSA, non-central city	31,178	25.0	(0.61)	10.1	(0.42)	19.2	(0.57)	3.4	(0.23)	22.4	(0.59)
Non-MSA, non-farm	13,606	27.6	(1.30)	11.1	(0.76)	21.2	(1.30)	3.2	(0.29)	19.0	(1.06)
Non-MSA, farm	656	32.7	(4.55)	10.8	(2.31)	26.8	(4.23)	5.5	*(1.64)	23.1	(4.98)
Region:											
Northeast	11,802	23.2	(0.96)	9.1	(0.64)	17.8	(0.93)	3.9	(0.37)	21.6	(0.88)
Midwest	15,833	26.6	(0.99)	10.6	(0.65)	19.2	(0.95)	3.9	(0.35)	22.1	(0.95)
South	22,725	22.2	(0.76)	9.0	(0.48)	17.1	(0.71)	2.8	(0.23)	19.6	(0.70)
West	14,291	20.4	(1.03)	8.2	(0.56)	15.0	(1.01)	2.6	(0.26)	23.9	(1.05)

¹Includes children with unknown income and other missing data.

Table 3. Percent (and standard error) of children in households knowledgeable about poison prevention measures, by selected sociodemographic characteristics: United States, 1990

Characteristics	All children under age 10	Aware of the Poison Control Center		Poison Control Center number available		Ipecac kept in the household	
	Number (in thousands)	Percent (standard error)					
Total ¹	37,450	74.4	(0.55)	49.7	(0.71)	25.6	(0.58)
Child characteristics							
Race:							
White	30,277	76.8	(0.60)	53.3	(0.79)	28.7	(0.66)
Non-white	7,173	64.3	(1.35)	34.1	(1.34)	12.4	(0.87)
Hispanic origin:							
Non-Hispanic	32,307	78.1	(0.55)	53.0	(0.76)	27.9	(0.64)
Hispanic	5,143	51.3	(1.57)	29.0	(1.39)	10.9	(0.91)
Age:							
Less than 1 year	4,075	73.8	(1.06)	47.7	(1.28)	22.8	(1.11)
1-4 years	15,010	74.0	(0.71)	49.6	(0.86)	27.6	(0.74)
5-9 years	18,366	74.9	(0.64)	50.2	(0.80)	24.5	(0.63)
Sex:							
Male	19,167	74.6	(0.64)	49.6	(0.79)	25.6	(0.66)
Female	18,283	74.2	(0.67)	49.7	(0.84)	25.5	(0.69)
Household characteristics							
Responsible adult's education:							
Less than 12 years	4,925	52.9	(1.68)	26.6	(1.64)	8.1	(0.90)
12 years	13,683	74.0	(0.89)	45.7	(1.06)	19.8	(0.77)
More than 12 years	18,649	81.1	(0.61)	59.1	(0.83)	34.7	(0.81)
Family structure:							
Biological mother and father	27,179	77.3	(0.59)	53.9	(0.79)	26.6	(0.70)
Biological mother only	5,541	73.8	(1.29)	44.2	(1.50)	18.1	(1.04)
Other	4,692	58.7	(1.47)	31.7	(1.34)	11.4	(0.97)
Family size:							
2 or fewer persons	1,417	76.0	(1.68)	44.6	(2.05)	18.1	(1.54)
3-5 persons	29,689	76.7	(0.54)	51.8	(0.72)	27.4	(0.64)
6 or more persons	6,344	63.5	(1.69)	40.7	(1.81)	18.7	(1.26)
Income:							
Less than \$5,000	1,765	63.8	(2.80)	34.8	(2.57)	10.8	(1.58)
\$5,000-\$6,999	960	71.1	(2.76)	35.3	(3.23)	12.6	(2.56)
\$7,000-\$9,999	1,501	68.1	(2.65)	38.4	(2.69)	15.1	(2.05)
\$10,000-\$14,999	3,021	67.5	(1.87)	36.4	(1.83)	14.3	(1.26)
\$15,000-\$19,999	3,412	71.7	(1.81)	42.8	(1.87)	20.9	(1.57)
\$20,000-\$24,999	2,719	75.6	(1.62)	49.5	(1.87)	20.6	(1.52)
\$25,000-\$34,999	5,897	80.1	(1.20)	56.9	(1.42)	28.0	(1.26)
\$34,999-\$49,999	6,485	83.8	(0.99)	62.2	(1.34)	34.7	(1.33)
Greater than \$50,000	6,873	82.0	(0.97)	59.9	(1.29)	38.5	(1.31)
Poverty status:							
At or above the poverty level	28,342	79.2	(0.54)	55.3	(0.75)	29.9	(0.66)
Below the poverty level	6,518	64.4	(1.50)	34.9	(1.47)	12.9	(0.98)
Geographic characteristics							
Housing type:							
House, apartment, flat	34,712	74.4	(0.58)	49.9	(0.71)	26.0	(0.59)
Mobile home	2,342	76.7	(1.87)	48.0	(2.63)	19.2	(2.16)
Other	397	67.8	(4.47)	40.2	(5.26)	24.6	(4.55)
Residential area:							
MSA, central city	11,350	68.6	(1.02)	43.1	(1.01)	20.2	(0.85)
MSA, non-central city	18,051	76.4	(0.72)	53.9	(0.89)	29.7	(0.79)
Non-MSA, non-farm	7,697	78.0	(1.42)	49.3	(1.95)	23.3	(1.54)
Non-MSA, farm	352	86.3	(3.69)	54.4	(5.27)	36.7	(4.56)
Region:							
Northeast	6,901	73.2	(1.24)	53.0	(1.35)	29.2	(1.21)
Midwest	8,908	82.7	(0.96)	59.7	(1.38)	29.5	(1.27)
South	13,034	73.3	(0.96)	42.8	(1.27)	21.4	(0.93)
West	8,607	68.6	(1.24)	47.0	(1.41)	24.8	(1.25)

¹Includes children with unknown income and other missing data.

Table 4. Percent of children under age 5 using selected care safety precautions, by selected sociodemographic characteristics: United States, 1990

Characteristic	All children under age 5	Brought home from hospital in car safety seat		Possessing a car seat at time of survey		Never		Safety seat use frequency ¹ sometimes/often		Always	
	Number (in thousands)	Percent (standard error)		Percent (standard error)		Percent (standard error)		Percent (standard error)		Percent (standard error)	
Total ²	19,084	76.0	(0.59)	64.6	(0.62)	0.7	(0.09)	4.4	(0.23)	59.4	(0.65)
Child characteristics											
Race:											
White	15,387	78.3	(0.65)	66.6	(0.70)	0.7	(0.10)	3.9	(0.24)	61.9	(0.73)
Non-white	3,697	66.3	(1.40)	56.5	(1.32)	0.9	(0.25)	6.5	(0.59)	48.9	(1.38)
Hispanic origin:											
Non-Hispanic	16,355	78.3	(0.60)	66.3	(0.67)	0.6	(0.08)	4.0	(0.24)	61.7	(0.70)
Hispanic	2,729	61.9	(1.85)	54.4	(1.71)	1.5	(0.40)	6.9	(0.75)	45.8	(1.66)
Age:											
Less than 1 year	4,075	79.1	(1.02)	81.5	(0.94)	0.4	*(0.18)	2.2	(0.34)	78.6	(0.99)
1-4 years	15,010	75.1	(0.65)	60.0	(0.70)	0.8	(0.11)	5.0	(0.27)	54.2	(0.71)
Sex:											
Male	9,768	76.1	(0.72)	63.9	(0.80)	0.6	(0.11)	4.3	(0.29)	58.8	(0.83)
Female	9,317	75.7	(0.77)	65.4	(0.83)	0.8	(0.15)	4.4	(0.34)	60.0	(0.85)
Household characteristics											
Responsible adult's education:											
Less than 12 years	2,550	61.5	(1.81)	49.7	(1.81)	1.3	(0.35)	7.9	(0.79)	40.4	(1.79)
12 years	6,949	74.0	(0.95)	61.7	(1.00)	0.7	(0.14)	4.6	(0.37)	56.3	(1.04)
More than 12 years	9,483	81.9	(0.71)	71.4	(0.80)	0.6	(0.12)	3.3	(0.29)	67.4	(0.83)
Family structure:											
Biological mother and father	13,775	78.8	(0.65)	67.9	(0.70)	0.7	(0.11)	3.8	(0.25)	63.3	(0.73)
Biological mother only	2,596	72.7	(1.62)	53.1	(1.55)	1.0	(0.29)	5.2	(0.65)	46.9	(1.56)
Other	2,711	64.7	(1.49)	59.0	(1.58)	0.4	*(0.17)	6.5	(0.71)	51.7	(1.53)
Family size:											
2 or fewer persons	788	70.7	(2.34)	55.7	(2.43)	1.4	*(0.62)	3.9	(1.00)	50.3	(2.45)
3-5 persons	15,319	77.8	(0.62)	66.7	(0.67)	0.7	(0.10)	4.1	(0.24)	61.9	(0.69)
6 or more persons	2,978	67.9	(1.65)	56.2	(1.68)	0.7	(0.23)	6.0	(0.66)	49.2	(1.69)
Income:											
Less than \$5,000	1,032	70.5	(2.48)	51.0	(2.70)	1.1	*(0.45)	6.4	(1.02)	43.3	(2.60)
\$5,000-\$6,999	518	69.4	(3.56)	55.1	(3.92)	1.4	*(0.86)	7.2	(1.57)	46.1	(3.83)
\$7,000-\$9,999	788	70.7	(2.93)	56.3	(2.97)	1.0	*(0.48)	7.3	(1.52)	48.1	(2.93)
\$10,000-\$14,999	1,592	69.1	(1.90)	56.3	(2.17)	1.1	*(0.43)	5.6	(0.87)	49.6	(2.12)
\$15,000-\$19,999	1,788	76.6	(1.80)	64.3	(1.84)	1.2	*(0.39)	7.0	(0.97)	56.2	(0.97)
\$20,000-\$24,999	1,380	76.5	(1.96)	65.0	(2.09)	0.9	*(0.39)	6.4	(0.95)	57.7	(2.13)
\$25,000-\$34,999	3,047	81.6	(1.30)	69.5	(1.40)	0.5	*(0.18)	4.5	(0.52)	64.3	(1.46)
\$34,999-\$49,999	3,163	84.3	(1.14)	72.6	(1.28)	0.6	*(0.21)	3.0	(0.50)	68.9	(1.32)
Greater than \$50,000	3,298	82.7	(1.18)	72.7	(1.24)	0.5	*(0.19)	2.4	(0.39)	69.6	(1.27)

Poverty status:											
At or above the poverty level	14,231	80.1	(0.61)	66.0	(0.68)	0.6	(0.10)	4.0	(0.25)	64.3	(0.71)
Below the poverty level	3,473	68.7	(1.45)	53.3	(1.49)	1.1	(0.27)	6.5	(0.61)	46.6	(1.45)
Household respondent's seat belt use frequency:											
Never	1,380	77.0	(2.03)	62.9	(2.08)	3.1	(0.68)	8.6	(1.06)	51.0	(2.09)
Sometimes/Often	4,346	78.9	(1.08)	66.0	(1.18)	0.7	(0.21)	10.0	(0.70)	55.2	(1.26)
Always	10,825	89.9	(0.52)	77.1	(0.70)	0.5	(0.10)	2.4	(0.23)	74.0	(0.73)
Geographic characteristics											
Housing type:											
House, apartment, flat	17,694	75.9	(0.61)	64.4	(0.63)	0.6	(0.09)	4.4	(0.24)	59.3	(0.65)
Mobile home	1,195	77.4	(2.29)	67.9	(2.17)	1.3	*(0.47)	4.8	(1.00)	61.7	(2.40)
Other	196	74.9	(5.00)	63.8	(5.59)	2.8	*(2.76)	1.9	*(1.32)	59.1	(5.85)
Residential area:											
MSA, central city	6,121	71.0	(1.15)	60.1	(1.10)	1.0	(0.20)	4.9	(0.41)	54.1	(1.11)
MSA, non-central city	9,071	78.5	(0.86)	66.3	(0.87)	0.5	(0.11)	3.5	(0.31)	62.1	(0.90)
Non-MSA, non-farm	3,741	77.8	(1.37)	67.1	(1.52)	0.7	(0.18)	5.5	(0.65)	60.9	(1.71)
Non-MSA, farm	151	79.4	(4.15)	81.3	(2.95)	0.0	(0.00)	6.8	*(2.17)	74.5	(2.98)
Region:											
Northeast	3,548	70.2	(1.44)	64.6	(1.48)	0.7	*(0.23)	3.7	(0.49)	60.2	(1.47)
Midwest	4,556	82.3	(1.05)	66.3	(1.23)	0.7	(0.17)	4.4	(0.39)	61.2	(1.25)
South	6,570	75.7	(1.02)	63.6	(1.08)	0.9	(0.19)	4.7	(0.40)	58.0	(1.08)
West	4,412	74.4	(1.32)	64.5	(1.29)	0.4	*(0.12)	4.6	(0.60)	59.2	(1.45)

¹Excludes children in households without cars or where child does not ride in a car.

²Includes children with unknown income and other missing data.

Table 5. Percent (and standard error) of children ages 5 and over using safety belts, by selected sociodemographic characteristics: United States, 1990

Total ²	All children ages 5-17 Number (in thousands)	Seat belt use frequency ¹					
		Never	Sometimes/often		Always		
		Percent (standard error)					
Total ²	45,567	4.5	(0.24)	20.7	(0.46)	60.2	(0.58)
Child Characteristics							
Race:							
White	36,674	4.3	(0.25)	19.3	(0.50)	62.5	(0.64)
Non-White	8,892	5.2	(0.54)	26.3	(0.97)	50.4	(1.31)
Hispanic origin:							
Non-Hispanic	39,657	4.1	(0.25)	20.0	(0.47)	61.1	(0.61)
Hispanic	5,910	6.9	(0.77)	25.1	(1.34)	53.4	(1.57)
Age:							
5-9 years	18,366	3.3	(0.26)	17.5	(0.51)	66.3	(0.66)
10 years or older	23,573	5.4	(0.32)	22.9	(0.57)	55.4	(0.73)
Sex:							
Male	23,319	4.7	(0.28)	21.3	(0.54)	59.4	(0.67)
Female	22,248	4.3	(0.29)	20.1	(0.52)	60.9	(0.67)
Household characteristics							
Responsible adult's education:							
Less than 12 years	2,550	8.6	(0.89)	33.0	(1.36)	41.3	(1.37)
12 years	6,949	5.9	(0.42)	24.0	(0.69)	55.6	(0.82)
More than 12 years	9,483	2.3	(0.21)	14.9	(0.52)	69.6	(0.70)
Family structure:							
Biological mother and father	31,504	4.0	(0.27)	18.8	(0.55)	62.8	(0.68)
Biological mother only	7,722	5.1	(0.47)	26.4	(1.02)	57.4	(1.16)
Other	6,175	5.7	(0.62)	23.0	(1.10)	50.6	(1.26)
Family size:							
2 or fewer persons	2,105	4.2	(0.63)	20.6	(1.31)	59.0	(1.80)
3-5 persons	35,121	3.9	(0.22)	19.2	(0.45)	62.9	(0.59)
6 or more persons	8,341	6.9	(0.74)	26.9	(1.28)	48.9	(1.45)
Income:							
Less than \$5,000	1,665	8.8	(1.26)	34.2	(2.45)	44.0	(2.75)
\$5,000-\$6,999	1,012	12.4	(2.11)	29.9	(2.66)	44.2	(2.95)
\$7,000-\$9,999	1,699	7.4	(1.40)	29.5	(2.01)	51.0	(2.74)
\$10,000-\$14,999	3,373	7.4	(0.87)	29.9	(1.64)	49.0	(1.75)
\$15,000-\$19,999	3,779	6.3	(0.91)	27.7	(1.50)	53.6	(1.69)
\$20,000-\$24,999	3,317	5.6	(0.88)	23.8	(1.41)	58.2	(1.80)
\$25,000-\$34,999	6,825	4.9	(0.60)	20.5	(0.95)	62.5	(1.25)
\$34,999-\$49,999	8,209	3.2	(0.39)	17.5	(0.90)	69.4	(1.07)
Greater than \$50,000	9,390	1.7	(0.28)	13.1	(0.71)	72.0	(1.00)
Poverty status:							
At or above the poverty level	14,231	3.6	(0.22)	18.5	(0.50)	64.8	(0.61)
Below the poverty level	3,473	9.1	(0.76)	31.3	(1.21)	46.0	(1.39)
Household respondent's seat belt use frequency:							
Never	3,529	57.1	(2.22)	24.4	(1.81)	15.6	(1.57)
Sometimes/Often	9,810	14.0	(0.72)	55.6	(1.12)	28.3	(0.97)
Always	25,695	3.2	(0.24)	14.0	(0.44)	80.6	(0.55)
Geographic characteristics							
Housing type:							
House, apartment, flat	42,546	4.3	(0.22)	20.5	(0.46)	60.6	(0.57)
Mobile home	2,422	8.3	(1.41)	24.1	(1.83)	54.2	(2.55)
Other	599	3.0	*(1.49)	15.9	(3.02)	51.7	(5.02)
Residential area							
MSA, central city	13,090	5.8	(0.44)	22.8	(0.79)	56.3	(1.04)
MSA, non-central city	22,106	2.9	(0.24)	17.2	(0.62)	64.4	(0.77)
Non-MSA, non-farm	9,865	6.2	(0.72)	25.4	(1.15)	56.1	(1.47)
Non-MSA, farm	505	4.9	*(1.67)	24.5	(4.42)	53.2	(5.48)
Region:							
Northeast	8,255	5.1	(0.50)	19.8	(0.93)	57.9	(1.15)
Midwest	11,277	4.8	(0.45)	23.6	(0.92)	60.9	(1.04)
South	16,155	5.1	(0.51)	21.3	(0.77)	57.5	(1.04)
West	9,879	2.6	(0.32)	16.9	(1.08)	65.5	(1.38)

¹Excludes children in households without cars and where child does not ride in a car.²Includes children with unknown family income and other missing data.

Technical notes

Source and description of data

The estimates presented in this report are based on the 1990 National Health Interview Survey (NHIS) on Injury Control and Child Health. Performed by the National Center for Health Statistics, the NHIS is an ongoing survey of the civilian, noninstitutionalized population of the United States. The interviews are performed in households weekly by personnel of the United States Bureau of the Census.

The NHIS consists of two sections: the basic questionnaire, which remains the same each year, and special topic questionnaires, which vary from year to year. The survey collects individual and household data on health status and behaviors, medical care utilization, and individual and household characteristics. The special topic questionnaires explore specific areas in greater detail. In 1990, the special topics questionnaires included Assistive Devices, Hearing, Podiatry, Family Resources, Health Promotion and Disease Prevention—which included the Injury Control and Child Health questionnaire—and AIDS Knowledge and Attitudes. Further information on the survey design and data collection methods can be found in *Current Estimates From the National Health Interview Survey, 1991* (16).

The interviewed sample for the 1990 questionnaire was composed of 46,476 households containing 119,631 persons. Of these persons, 33,243 were children under the age of 17. These children comprise the sample for this report. The response rates for the core questionnaire and the injury control questionnaire were 95.5 and 86.6 percent, respectively, resulting in a true response rate of 82.7 percent for the Injury Control and Child Health questionnaire.

Sampling errors

Since the estimates shown in this report are based on a sample population, they are subject to sampling error. In the case of small estimates, sampling errors may be relatively high. Further,

estimates based on complex, multistage sampling designs such as the NHIS lead to larger sampling errors than those based on simple random samples. The standard errors shown in tables 1–5 of this report were calculated using SUDAAN (SURvey DATA ANalysis) developed by Research Triangle Institute for analysis of complex sample surveys. The procedure used was CROSSTAB and the design was UNEQWOR (without replacement sampling with unequal probabilities of selection at the first stage).

Tests of statistical significance were performed using the difference of means tests (t-test). The standard error used for performing this procedure was derived from the pooled variances of the populations being compared. Differences between means that were at least twice as large as the pooled standard error were considered to be significant at the 5 percent level. In the case of multiple comparisons, such as one income group against all others, a Bonferroni adjustment was used to determine the appropriate level of significance. In this procedure, the significant alpha level is divided by the number of tests being performed to determine the adjusted significance level. Lack of comment regarding the difference between any two estimates does not mean that the difference was tested and found not to be statistically significant. Estimates that do not meet the reliability criteria of 30 percent relative standard error are marked on the table.

Symbols

- Data not available.
 - ... Category not applicable
 - Quantity zero
 - 0.0 Quantity more than zero but less than 0.05
 - Z Quantity more than zero but less than 500 where numbers are rounded to thousands
 - * Figure does not meet standard of reliability or precision
 - # Figure suppressed to comply with confidentiality requirements
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