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Occupant Safety Survey

Volume Three

Child Safety Seat Report

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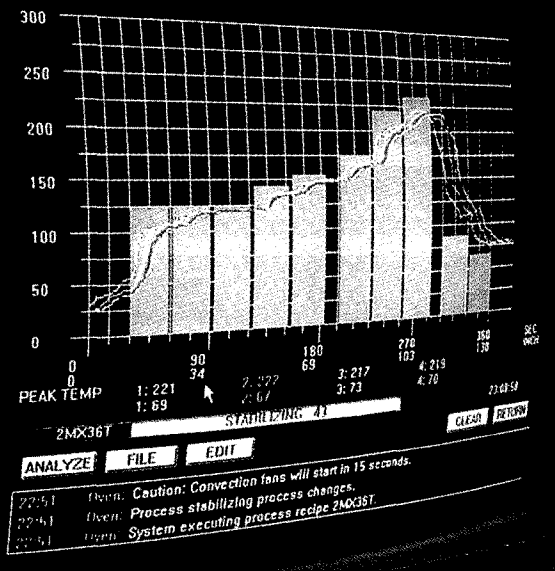

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16. Abstract

The 1998 Motor Vehicle Occupant Safety Survey was the third in a series of biennial national telephone surveys on occupant protection issues conducted for the National Highway Traffic Safety Administration (NHTSA). Data collection was conducted by the firm Schulman, Ronca & Bucuvalas, Inc., a national survey research organization. The survey used two questionnaires, each administered to a randomly selected national sample of about 4,000 persons age 16 and older. Interviewing began November 5, 1998 and ended January 12, 1999. This report presents the survey findings pertaining to child restraint use. Detailed information on the survey methodology, as well as copies of the questionnaires, are contained in a separate NHTSA report ("1998 Motor Vehicle Occupant Safety Survey. Volume 1: Methodology Report").

The survey selected a subgroup of drivers to ask detailed questions about use of car seats. These were primarily parents and others who lived with children under the age of 6. This group of "parents/caregivers" tended to report that the (referent) child either used a car seat "all the time" (71%) or else never used a car seat (22%). Almost all infants reportedly used car seats "all of the time" if they weighed under 20 pounds (99%) or were under 2 years of age (98%). Discontinuation of car seat use by most children occurred when the child was 3 or 4 years old and exceeded 40 pounds. The most frequent reasons given for non-use of car seats among part time users were that the child did not like the seat (31%), the seat was unavailable (30%), or the child was only going to be in the car a short time (29%). If children never used car seats, it was because they were deemed too big (84%) and were using a seat belt (94%). Most parents/caregivers (76%) said they were aware of booster seats, but 21% had not heard of them and 3% were unsure. Among those who had heard of booster seats, 30% had concerns about their safety and another 7% were unsure.

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EXECUTIVE SUMMARY

The 1998 Motor Vehicle Occupant Safety Survey (MVOSS) was the third in a series of biennial national telephone surveys on occupant protection issues conducted for the National Highway Traffic Safety Administration (NHTSA). Data collection was conducted by the firm Schulman, Ronca, & Bucuvalas, Inc. (SRBI), a national survey research organization. The survey employed two questionnaires, each administered to a randomly selected national sample of approximately 4,000 persons age 16 and older (with younger ages oversampled). Interviewing began November 5, 1998 and ended January 12, 1999.

This report presents the survey findings pertaining to child restraints and child occupant protection. The data are weighted to yield national estimates. Readers are cautioned that some subgroup analyses are based on small numbers of cases. Technical information on confidence intervals is presented in Appendix A so that readers may judge the precision of sample estimates. A full description of the methodology, and the questionnaires, are presented in a separate report.

Seating Position Of Children Age 12 And Younger

- **Usual Seating Location Of Children Age 12 And Younger.** For safety reasons, NHTSA and other organizations maintain that children age 12 and younger should ride in the back seat of the motor vehicle. Among drivers who lived with one or more children in this age range, most indicated that the youngest child typically rode in the back when riding with them, with 48% saying the child never rode in the front seat in the past 30 days and 15% claiming it occurred just a few times. Children were more likely to sit in the front seat if the respondent had fewer years of formal education, the child was older, and there was no air bag in the respondent's primary vehicle.

- **Change From A Year Ago In Youngest Child's Seating Position.** About half (51%) of the children age 12 and younger were said to be less likely now than a year ago to ride in the front seat. Another 23% were thought to be just as likely to ride in the front while 19% were considered more likely to ride in the front. Those most likely to report a shift toward the back seat included Hispanics (63%), urban residents (59%), those having passenger side air bags in their primary vehicle (59%), and those referring to younger children (69% for ages 1 to 3).

- **Reasons Why A Child Is More/Less Likely To Ride Up Front.** The most frequently given reasons why children were more likely to ride up front were that the child preferred the front (41%) and there was no other place for the child (22%). The most frequently given reasons why children were less likely to ride up front were that it was safer in back (59%) and the danger from air bags (21%).

Transporters of Young Children Under Age 6

- **Driving A Young Child Not In Household.** Forty-four percent of all drivers had in the past year driven a motor vehicle with a child under the age of 6 as a passenger, but most of these (28%) did not actually live with a child in that age range. If drivers had transported children under age 6 but did not live with anyone in that age range, their frequency of driving young children tended to be low: 52% said they did this only a few days a year and 29% said they did it a few days a month.

- **Relationship To Young Child Not In Household (Drivers Who Did Not Live With A Young Child).** Most often, the driver transporting a child not living in the household was a grandparent (40%). When asked the frequency that they drove young children, grandparents tended to report a greater amount compared to other relatives.

1998 Car/Booster Seat Use

- **Parent/Caregiver Analytic Group.** The survey selected a subgroup of drivers to ask detailed questions about children's use of car seats, designated "parents/caregivers." These were: (a) parents of children under age 6 (usually parents living with the child, but a few cases of parents not living with the child but who drove the child at least on occasion in the past year), and (b) non-parents living with children under age 6 who at least on occasion drove with them.

- **Frequency Of Car Seat Use.** Parents/caregivers usually said either that the selected child used a car seat "all of the time" (71%) or else never used a car seat (22%). If the child never used a car seat, it usually was because the child had graduated to seat belt use. Virtually all infants reportedly used car seats "all of the time" if they weighed under 20 pounds (99%) or were under 2 years old (98%). Discontinuation of car seat use by most children occurred when the child reached 3 or 4 years of age and exceeded 40 pounds.

- **Type Of Car Seat By Age.** Infants who have not reached their first birthday should always ride in a rear facing position in a car seat regardless of the child's size. Most infants who used car seats (58%) did indeed ride in a rear facing position. But about one-third (32%) rode in a front facing position in a toddler seat, with another 10% in booster seats. Front facing toddler seats predominated among one-year-olds (87%) and two-year-olds (78%). Booster seats accounted for 18% of car seat users among two-year-olds, then more than doubled to 39% at age 3. Booster seats increased as a percentage of car seat users at ages 4 and 5, though far fewer children rode in car seats at those ages.

- **Type Of Car Seat By Weight.** Slightly more than two-thirds (69%) of children weighing less than 20 pounds rode in a rear facing position. A portion (14%) appeared to be using booster seats, although at least some respondents may have made mistakes in describing the seat. Others (17%) provided information suggesting that the child usually rode front

facing in a toddler seat. Front facing toddler seats predominated at 20 to 39 pounds. Past 40 pounds, there was a relatively close split between children in booster seats (the majority) and those in front facing toddler seats.

- **Usual Location In Vehicle Where Child's Car Seat Is Placed.** The vast majority of parents/caregivers (90%) stated that the child usually sat in the back when riding in a car seat in a vehicle they were driving. This was true regardless of whether the child was riding in a rear-facing infant seat (89%), a front-facing toddler seat (92%), or a booster seat (86%). If there was a passenger side air bag in the respondent's primary vehicle, then 95% of children in car seats rode in the back.

- **Safest Perceived Location To Place A Child's Car Seat.** Among parents/caregivers who drove a child that used a car seat, almost all (98%) considered the back seat the safest location to place a child car seat in a vehicle. One percent incorrectly believed that the front seat was safest. The 1% who thought the front seat was safest contrasts with the 9% who said that the child car seat was usually in the front seat when they drove.

- **Child Car Seats In Vehicles With Air Bags.** Parents/caregivers who drove a child that used a car seat were asked if they thought it was safe to place a rear-facing car seat in the front seat of a vehicle having a front passenger air bag. The correct answer is no, because it could place the child in the air bag's path, with the force of impact being too great for the child. Most parents/caregivers (92%) said it was unsafe while 4% considered it safe.

- **Acquisition Of Car Seat.** Most car seats (85%) were obtained new; about one-in-seven (14%) were acquired used. More than two-thirds of car seats (68%) were purchased, while 27% were acquired as a gift or loaner from a relative or friend.

- **Sources For Information.** Of several information sources read by the interviewers, the parents/caregivers who drove a child that used a car seat most often said that they had heard about the need to use car seats from tv or radio (65%) or from books or articles on child care (61%).

- **Ease Of Attaching Car Seat To Vehicle.** Parents and caregivers reported that they had relatively little difficulty installing their children's car seats regardless of the type of seat. Overall, seven-out-of-ten respondents (71%) said it was very easy to attach the car seat to the vehicle they usually drove; 23% considered it somewhat easy. However, 25% of parents/caregivers acknowledged that they had at some time in the past driven with the child in the car seat and later found that the car seat was not securely attached. Most often, the respondents said that they learned how to attach the child car seat to the vehicle by reading the instructions (75%).

- **Ease Of Buckling Child In Car Seat.** As with installing the car seat in the vehicle, most caregivers considered it easy to properly buckle the child into the car seat. Almost all

parents/caregivers answered either that it was very easy (74%) or somewhat easy (23%). The percentage who considered it very easy was essentially the same across type of seat.

- **Frequency That Persons Outside Household Drive Child Who Uses Car Seat.** Parents/caregivers who lived with a child that used a car seat were asked if the child had ridden in a vehicle driven by someone outside the household in the past month. More than two-out-of-five (44%) answered that this had occurred. As expected, the children were transported on a far less regular basis by non-household members compared to the parent/caregiver who lived with the child. When asked the identity of the driver outside the household who transported the child in the past 30 days, the parents/caregivers most often answered that it was a grandparent (37%) or a parent/step-parent (37%).

Reasons For Non-Use Of Car Seats

- **Children Who Use Car Seats, But Not All The Time.** The reasons most frequently mentioned for non-use of car seats among part time users were that the child did not like the seat (31%), the seat was not available (30%), and the child was only going to be in the car a short time (29%). Most children who were part time car seat users wore a seat belt when they were not in their car seat. Sixty-nine percent reportedly used the seat belt all of the time when not in the car seat, and 11% used it most of the time.

- **Children Who Never Use Car Seats.** The children who never used car seats were mostly larger children. About three-fourths (76%) were 40 pounds or heavier. Most of the remaining children (20%) were 30 to 39 pounds. When asked the reason why the child never uses a car seat, the respondents usually answered that it was because the child was too big (84%) and was using a seat belt (94%). The vast majority of children who never used car seats reportedly wore a seat belt all (92%) or most of the time (5%) when riding in motor vehicles.

Booster Seat Issues

- **Awareness Of Booster Seats.** Safety professionals recommend that children approximately 40 to 80 pounds use booster seats. However, the survey data showed that these children often use seat belts instead. One question is whether people are aware of booster seats. Those considered most likely to have heard of them would be the parent/caregiver group. Yet while the majority (76%) stated that they were aware of booster seats, 21% said they had not heard of them and 3% were unsure. Of those who were aware of booster seats, 53% said they had used them at some time when driving their child(ren). The most frequent age at which parents/caregivers started using booster seats with their child(ren) was age three (40%).

- **Concerns About Booster Seats.** Among the 76% of parents/caregivers who had seen or heard of booster seats, almost one-third (30%) had concerns about their safety and

another 7% were unsure. Fewer than half of all parents/caregivers (48%) could say that they were aware of booster seats, and had no concerns about their safety.

- **Expected Restraint System After Outgrowing Current Seat.** If the designated child in the survey at least on occasion rode in a child safety seat, then the interviewers asked the respondents if they expected the child to use "a different type of car seat, a seat belt, or something else" after outgrowing the current seat. In general, children in rear facing seats were expected to move on to other safety seats, although 14% expected the child to use seat belts. Expectations became more varied with front facing safety seats, as slightly more than half (55%) said that the child would use a different seat or booster seat while 43% either answered that the child would graduate to seat belts or else that they did not know what would happen.

Attitudes Toward Enforcement Of Child Restraint Laws

- **Support For Enforcement.** The public (age 16 and older) favors stringent enforcement of car seat laws. Three-in-five persons (60%) believed that the police should issue a ticket at every opportunity.

- **Preferred Amount Of Fine.** Regardless of their attitude about police enforcement of child car seat laws, respondents age 16 and older were asked what they thought the minimum fine should be for violation of the laws. A majority (56%) believed the fine should be $50 or more; almost one-third (32%) favored a fine of $100 or more.

- **Legal Requirements For Children Who Outgrow Car Seats.** Ninety-four percent of persons age 16 and older agreed that children should be required by law to wear seat belts once they have outgrown car seats, while 3% disagreed. Those respondents who agreed that children should be required to wear seat belts after outgrowing car seats, or said it depended on the child's age, were asked if there was an upper age limit beyond which children should not be required to wear seat belts. The vast majority (85%) rejected the notion of an upper age limit by saying that seat belt use should be required for all children (which equated to 81% of the total population age 16 and older).

Results From The Buckle Up America Surveys

- **Confidence In Knowing How To Protect A Child.** Of particular relevance to this report are results from several questions introduced in the most recent Buckle Up America Surveys conducted for NHTSA. Respondents were read the statement "I feel I know everything that is important to know about how to protect a [CHILD] riding in a motor vehicle." The statement was read four times, each time specifying a specific age range for the child. Most persons believed they knew everything they needed to know regardless of the child's age, although the proportion who felt confident declined as the age range of the child became younger.

- **Child Protection Information Perceived As Useful.** The interviewers next asked if there was any particular type of information the respondents would find helpful on how to protect a child in a motor vehicle. Between one-fourth and one-third of all persons age 16 and older would find child protection information helpful. Particular types of information perceived as helpful included information on proper use of child safety seats, correct installation of child safety seats, seat belt safety, and child safety tips. Pamphlets and booklets also were mentioned.

- **Preferred Sources For Receiving Child Protection Information.** Departments of Motor Vehicles led all other locations as the preferred source for receiving child protection information, followed by police departments, direct mail, WEB sites, and television.

Trends (1994-1998)

- **Car Seat Use.** The proportion of parents/caregivers who said that the selected child (under age 6) "always" uses a car seat increased from 59% in 1994 to 71% in 1998. Conversely, children in that age range who never use a car seat decreased from 29% in 1994 to 22% in 1998.

- **Placement Of Child's Car Seat.** Children riding in car seats increasingly are being placed in the back. While 78% reportedly rode in the back seat in 1994, the figure rose to 85% in 1996 and then 90% in 1998.

- **Safest Perceived Location For A Car Seat.** Whereas 91% of parents/caregivers in 1994 knew that the back seat was the safest location to place a child car seat in the vehicle, the figure rose to 97% in 1996 and 98% in 1998.

- **Child Car Seats In Vehicles With Air Bags.** In recent years, far more people have become aware of the danger of placing a rear facing infant seat in the front seat of a vehicle having a passenger side air bag. Whereas only 56% of parents/caregivers in 1994 knew that this was an unsafe action, 88% considered it unsafe in 1996 and 92% considered it unsafe in 1998.

- **Reasons For Non-Use Of Car Seats.** In 1998, parents/caregivers were less prone than in previous years to attribute occasional non-use of a car seat by the child to the shortness of the trip, being in a hurry, and the child not liking the car seat. Unavailability of the car seat became the second most frequently cited reason for non-use among part time users. Those children under age 6 who never used car seats generally were viewed as too big for the seats and had been moved to seat belts. This finding was consistent across survey years.

- **Expected Restraint System After Outgrowing Current Seat.** The data suggested that parents/caregivers were more likely in 1998 than in 1996 to consider adding intermediate steps (i.e., graduating to another car seat) for older children before having them move to seat belt use.

- **Support For Enforcement.** In 1998, 60% of the public believed that police should give a ticket at every opportunity for violations of car seat laws. This compared to 53% in 1996 and 58% in 1994.

- **Legal Requirements For Children Who Outgrow Car Seats.** In each survey year, 94% of the public agreed that children who have outgrown child car seats should be required by law to wear seat belts when riding in a motor vehicle.

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INTRODUCTION

Background

The Motor Vehicle Occupant Safety Survey is conducted biennially for the National Highway Traffic Safety Administration (NHTSA). It is a national telephone survey composed of two questionnaires, each administered to approximately 4,000 randomly selected persons age 16 and older. The Version 1 Questionnaire emphasizes seat belt issues while Version 2 emphasizes child restraint issues. The questionnaires also contain smaller modules addressing such areas as air bags, motorcyclist and bicyclist helmet use, emergency medical services, and crash injury experience.

NHTSA conducted the first Motor Vehicle Occupant Safety Survey in 1994. Subsequent versions of the survey have included modest revisions to reflect changes in information needs. Thus the 1998 survey contained numerous items from the 1994 and 1996 surveys, which allows the agency to monitor change over time in knowledge, attitudes, and (reported) behavior related to motor vehicle occupant safety. The 1998 survey also included new questions dealing with such areas as seating position of children, attitudes about risk and the utility of seat belts, warning labels for air bags, and child injury prevention.

The following report presents findings from the 1998 Motor Vehicle Occupant Safety Survey (MVOSS) pertaining to child occupant protection. Specifically, it explores the following areas: 1) seating position of children age 12 and younger in motor vehicles; 2) transporters of young children; 3) car seat use by children age 5 and younger; 4) reasons for non-use of car seats by children; 5) booster seat issues; and 6) enforcement of child restraint laws. A seventh section presents relevant findings from a separate NHTSA telephone survey series, the Buckle Up America (BUA) Surveys. Chapter 7 features results from the BUA Surveys concerning the public's perceived information needs on child occupant protection. Lastly, this report examines MVOSS trends between 1994 and 1998 on selected child restraint issues.

Methodology

The 1998 Motor Vehicle Occupant Safety Survey was conducted by Schulman, Ronca, & Bucuvalas, Inc. (SRBI), a national survey research organization. SRBI conducted a total of 8,215 telephone interviews among a national population sample. To reduce the burden on respondents, the survey employed two questionnaires. A total of 4,094 interviews were completed with Version 1 and 4,121 interviews were completed with Version 2. Although some questions appeared in both versions (e.g., demographics, crash injury experience, seat belt use), each questionnaire had its own set of distinct topics. Each sample was composed of approximately 4,000 persons age 16 and older, including oversamples of persons ages 16-39. The procedures used in the survey yielded national estimates of the target population within specified limits of expected sampling variability, from which valid generalizations can be made to the general public.

The survey was conducted from November 5, 1998 to January 12, 1999. This is approximately the same time period in which the 1994 and 1996 surveys were conducted. For a complete description of the methodology and sample disposition, including computation of weights, refer to the 1998 Motor Vehicle Occupant Safety Survey. Volume 1: Methodology Report. The report includes English and Spanish language versions of the questionnaires.

The percentages presented in this report are weighted to reflect accurately the national population age 16 and older. Unweighted sample sizes ("N"s) are included so that readers know the exact number of respondents answering a given question, allowing them to estimate sampling precision (see Appendix A for related technical information).

Percentages for some items may not add to 100 percent due to rounding, or because the question allowed for more than one response. In addition, the number of cases involved in subgroup analyses may not sum to the grand total who responded to the primary questionnaire item being analyzed. Reasons for this include some form of nonresponse on the grouping variable (e.g., "Don't Know" or Refused), or use of only selected subgroups in the analysis. Moreover, if one of the variables involved in the subgroup analysis appeared on both versions of the questionnaire but the other(s) appeared on only one questionnaire, then the subgroup analysis was restricted to data from only one version of the questionnaire.

The survey employed two questions to categorize cases for subgroup analyses involving race and ethnicity. The first asked respondents if they considered themselves to be Hispanic or Latino. Those who said "Yes" composed the Hispanic analytic subgroup in the study, those who said "No" composed a non-Hispanic comparison group. The second question was treated independently of the ethnicity question, i.e., it was asked of every respondent. The interviewers recited several different racial categories, and asked respondents which categories described them. Respondents could select more than one. For purposes of analysis, a respondent was assigned to a specific racial category if s/he selected only that category. The few respondents who selected multiple categories (fewer than 200 out of more than 8200 cases) were analyzed as a separate multi-racial group. Because race and ethnicity were considered independently, each racial group could include both Hispanics and non-Hispanics, and the Hispanic analytic subgroup included both blacks and whites.

1998 SURVEY RESULTS

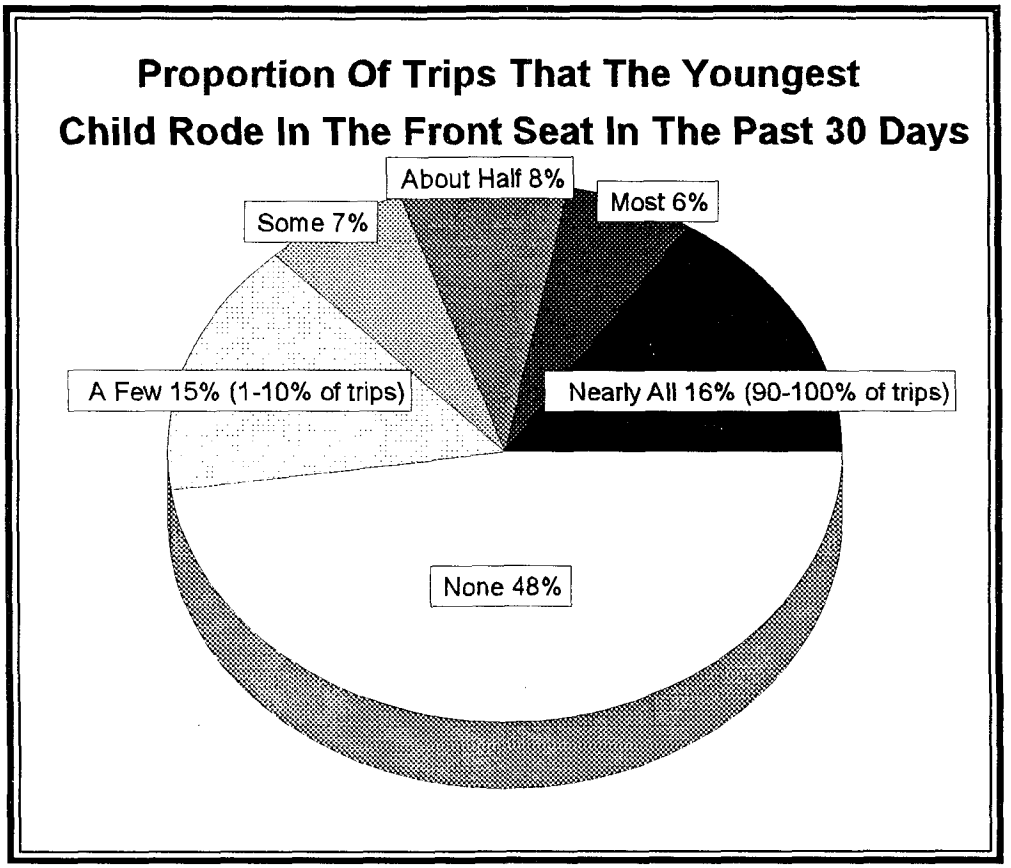
CHAPTER 1

SEATING POSITION OF CHILDREN

Proportion of Trips That Child Age 12 Or Younger Rides In Front Seat of Vehicle

For safety reasons, NHTSA and other organizations maintain that **children age 12 and younger should ride in the back seat of the motor vehicle** while using the appropriate restraint for their size. Drivers in the survey who lived with children in this age range were asked about the seating position of the youngest child, **using the front seat (the more dangerous position) as the reference point**. Forty-eight percent said the child never rode in the front seat in the past 30 days when riding with them, and 15% claimed it occurred just a few times. In contrast, more than one-in-five children rode in the front seat nearly all (16%) or most (6%) of the time.

Figure 1



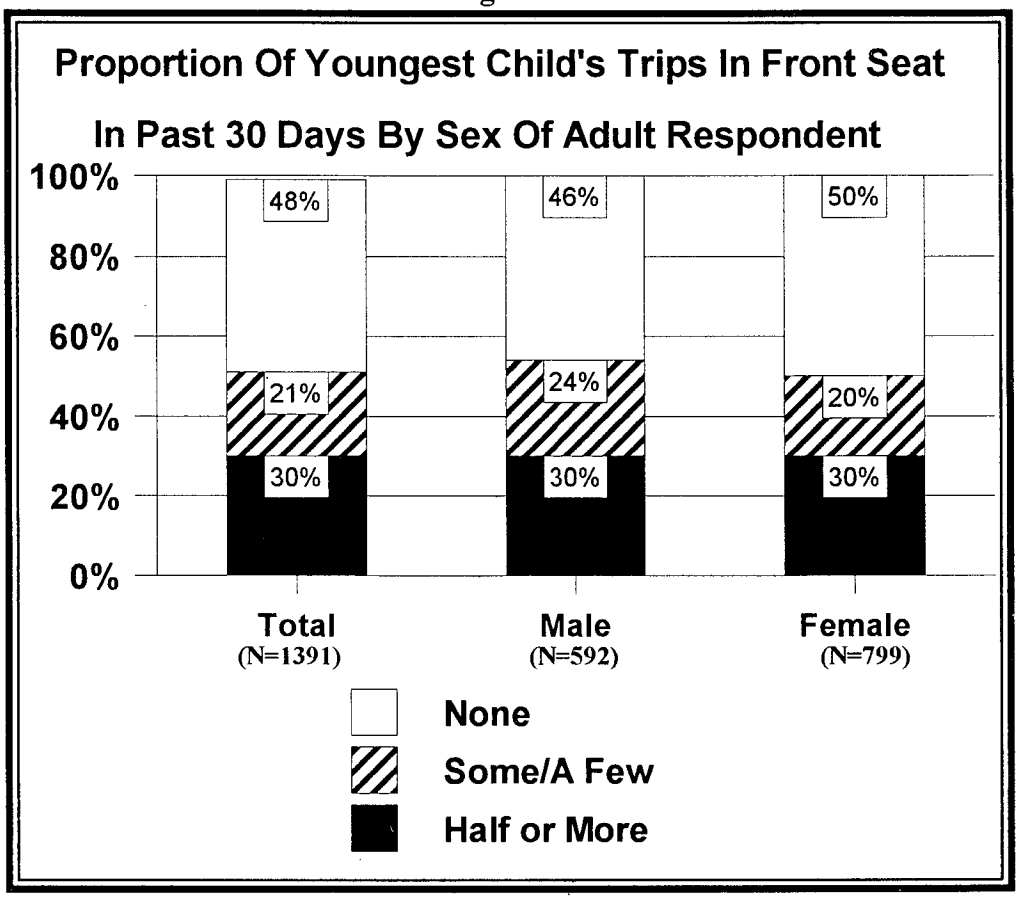
Qx: *Think about all the times this child rode with you in the past thirty days, both with and without other passengers. About what proportion of those trips would you say that the child rode in the front seat?*

Base: *Drives a motor vehicle that has seat belts, and lives with one or more children age 12 or younger*

Unweighted N= 1391

There was little difference between male and female drivers in the reported frequency that the youngest child rode in the front seat in the past 30 days. Thirty percent of the children reportedly rode half or more of the time in the front seat regardless of the sex of the responding driver. Fifty percent of female drivers said the child never rode in the front versus 46% of male drivers.

Figure 2



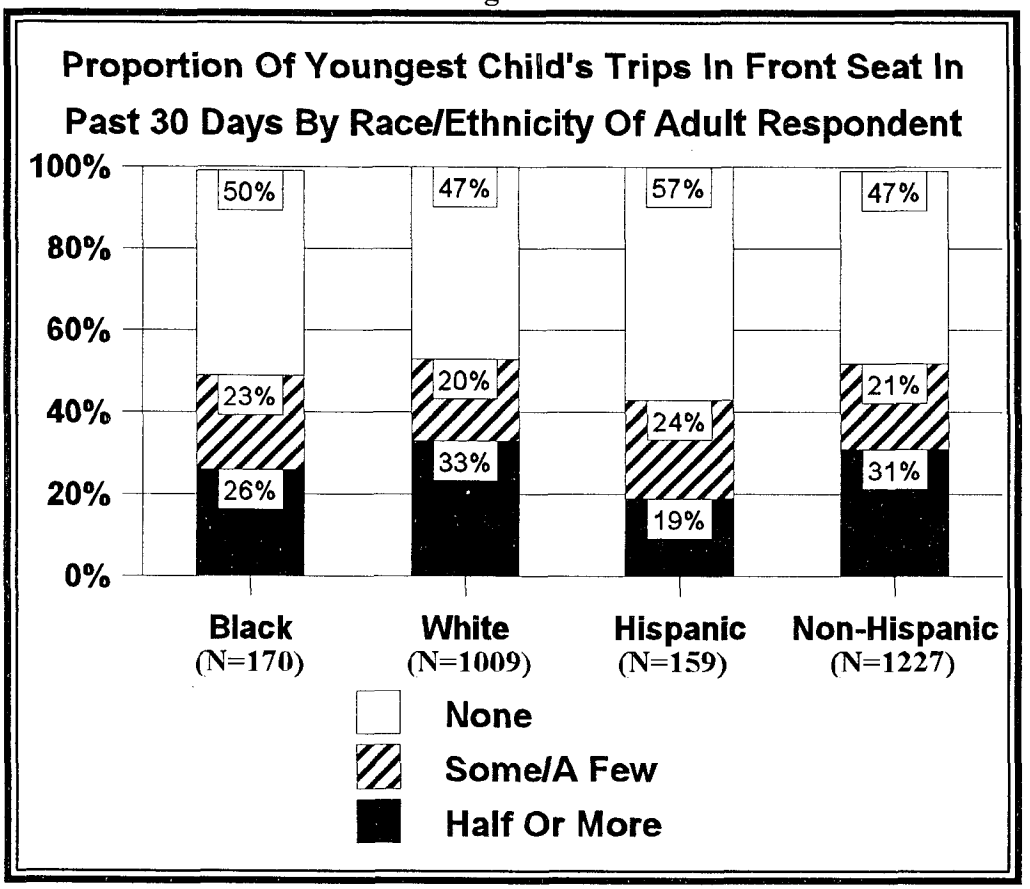
Qx: *Think about all the times this child rode with you in the past thirty days, both with and without other passengers. About what proportion of those trips would you say that the child rode in the front seat?*

Base: *Drives a motor vehicle that has seat belts, and lives with one or more children age 12 or younger*

Unweighted N's listed above.

The numbers of black and Hispanic drivers in the sample who resided with children age 12 and younger were relatively small. Thus readers are cautioned against over-interpreting the results. The data suggested that Hispanic children were less likely than non-Hispanic children to ride in the front seat.

Figure 3



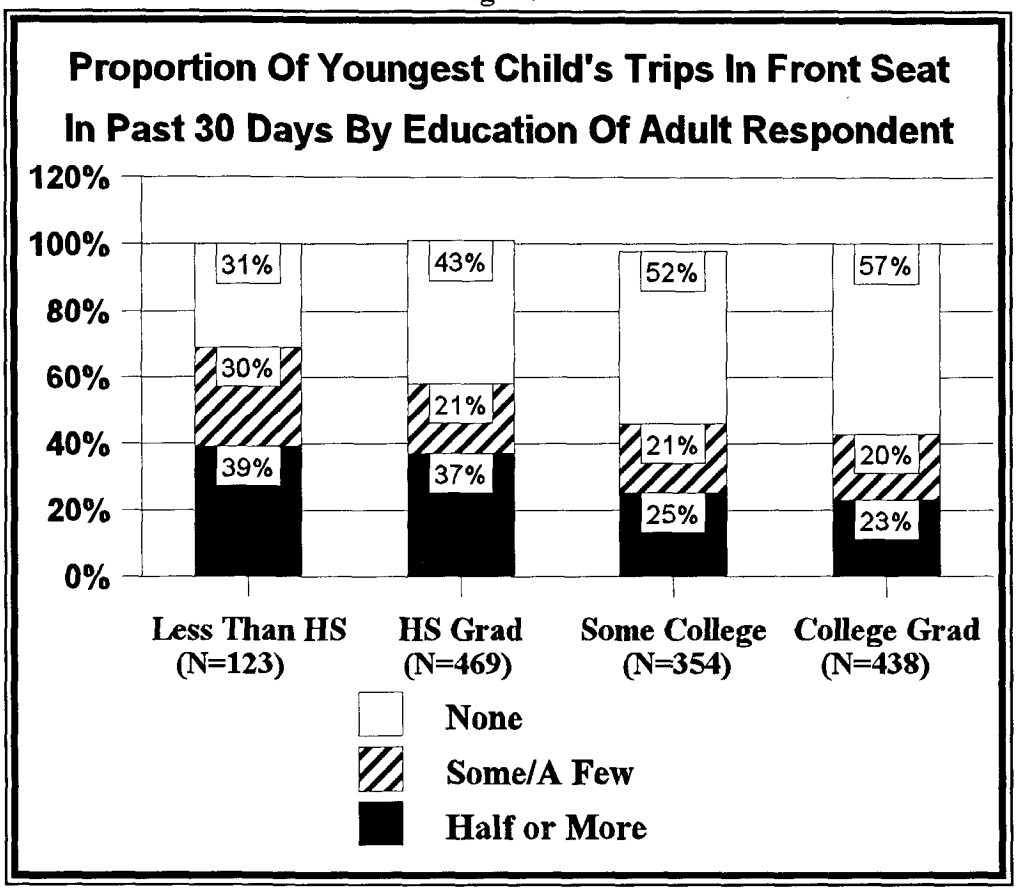
Qx: *Think about all the times this child rode with you in the past thirty days, both with and without other passengers. About what proportion of those trips would you say that the child rode in the front seat?*

Base: *Drives a motor vehicle that has seat belts, and lives with one or more children age 12 or younger*

Unweighted N's listed above.

The more years of formal schooling that a driver had, the more likely it was that the youngest child did not sit in the front seat. Almost three-in-five college graduates (57%) said that the child never rode in the front seat compared to 52% of drivers having some college experience, 43% of high school graduates who had not gone to college, and 31% of drivers who had not graduated high school.

Figure 4



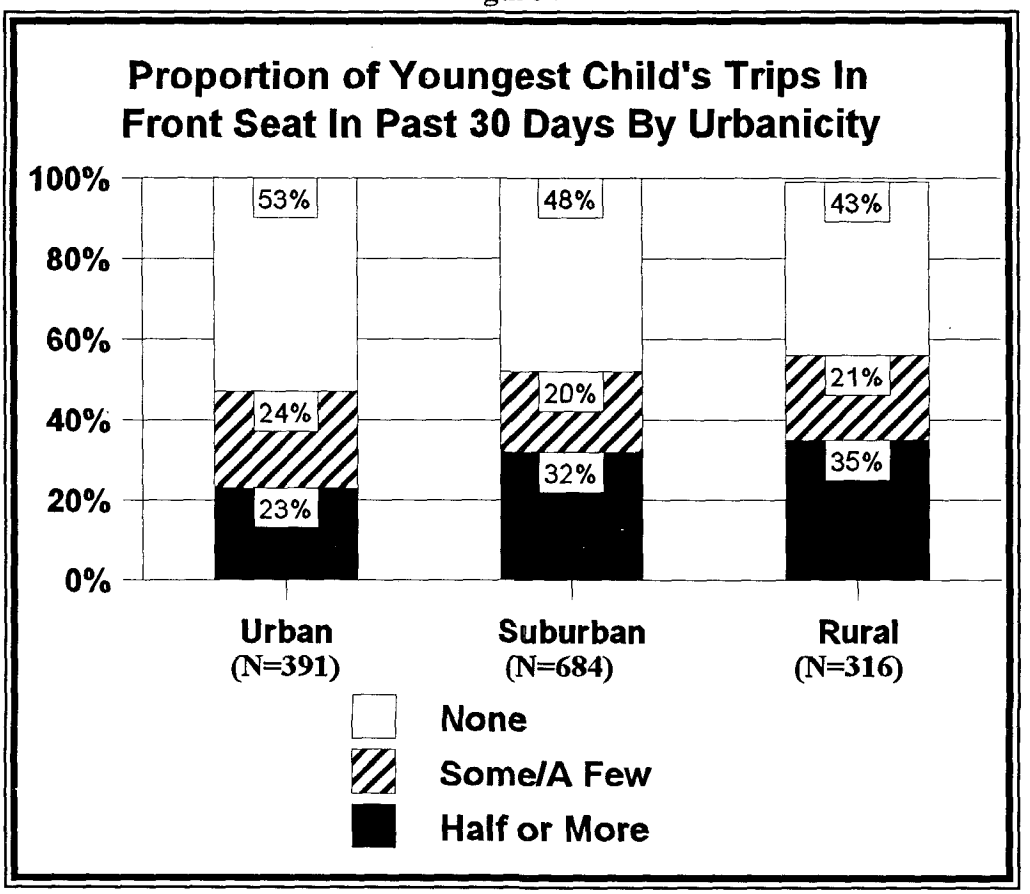
Qx: *Think about all the times this child rode with you in the past thirty days, both with and without other passengers. About what proportion of those trips would you say that the child rode in the front seat?*

Base: *Drives a motor vehicle that has seat belts, and lives with one or more children age 12 or younger*

Unweighted N's listed above.

Children in urban areas were least likely to sit in the front seat; fewer than one-in-four (23%) reportedly sat in the front seat half or more of the time when riding in a motor vehicle with the respondent. This compared to 32% of children in suburban areas and 35% of children in rural areas.

Figure 5



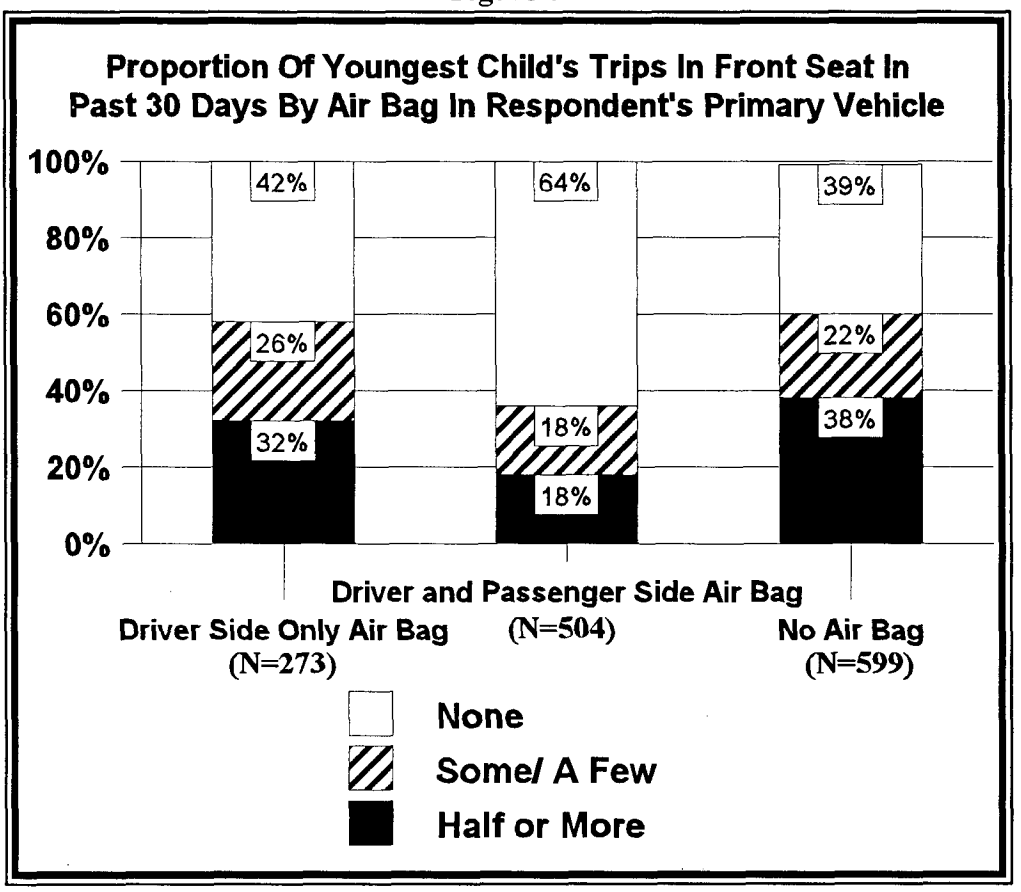
Qx: *Think about all the times this child rode with you in the past thirty days, both with and without other passengers. About what proportion of those trips would you say that the child rode in the front seat?*

Base: *Drives a motor vehicle that has seat belts, and lives with one or more children age 12 or younger*

Unweighted N's listed above.

The data suggested that public information campaigns warning about the danger of passenger side air bags to children sitting in the front seat have had an impact on the public. Among drivers whose primary vehicle had a passenger side air bag, 64% answered that the child never sat in the front during the past 30 days. This was more than 20 percentage points higher than among drivers who had no air bag in their primary vehicle (39%) or had a driver side only air bag (42%).

Figure 6



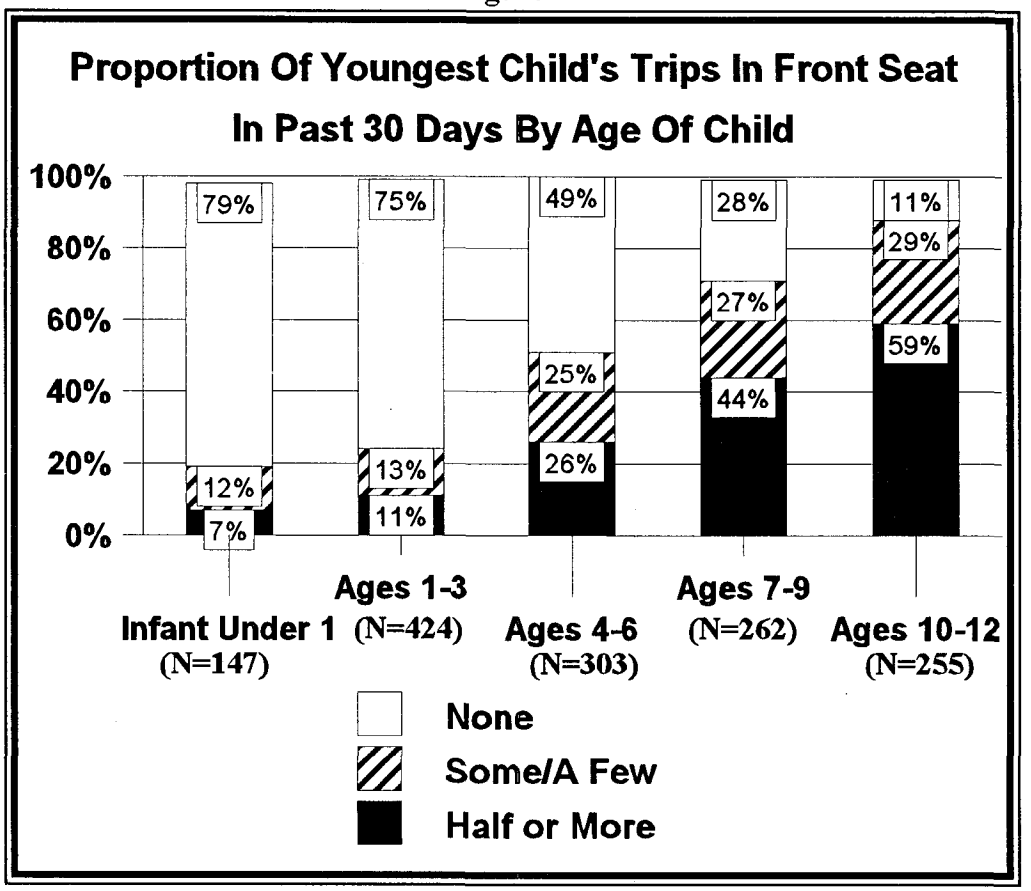
Qx: *Think about all the times this child rode with you in the past thirty days, both with and without other passengers. About what proportion of those trips would you say that the child rode in the front seat?*

Base: *Drives a motor vehicle that has seat belts, and lives with one or more children age 12 or younger*

Unweighted N's listed above.

As children became older, they became increasingly likely to ride in the front seat of the vehicle. Whereas three-quarters or more of infants and toddlers reportedly never sat at all in the front seat during the past 30 days, the percentage shrank to 49% among 4-to-6-year-olds and then to 28% of 7-to-9-year-olds. Among 10-to-12-year-olds, the majority (59%) reportedly rode in the front seat half or more of the time.

Figure 7



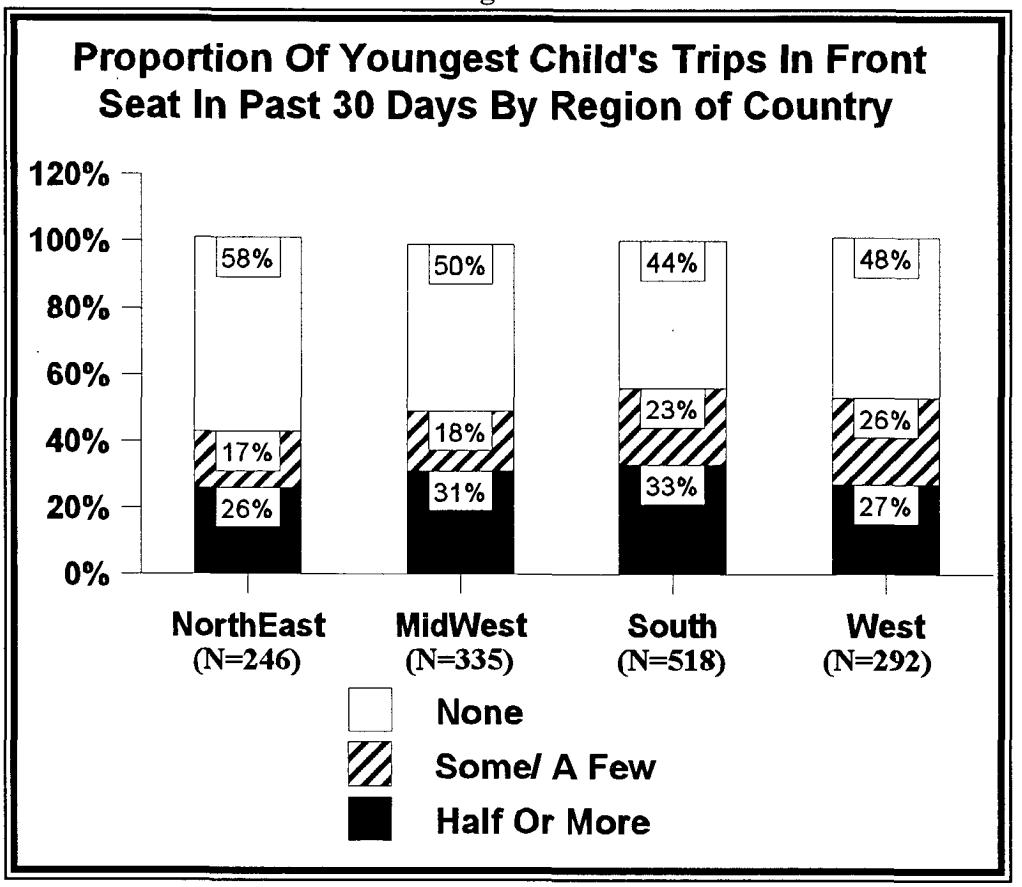
Qx: *Think about all the times this child rode with you in the past thirty days, both with and without other passengers. About what proportion of those trips would you say that the child rode in the front seat?*

Base: *Drives a motor vehicle that has seat belts, and lives with one or more children age 12 or younger*

Unweighted N's listed above.

Respondents in the Northeast region of the country were most likely to report that the child never rode in the front seat during the past 30 days (58%). Those in the South were least likely to report this (44%).

Figure 8



Qx: *Think about all the times this child rode with you in the past thirty days, both with and without other passengers. About what proportion of those trips would you say that the child rode in the front seat?*

Base: *Drives a motor vehicle that has seat belts, and lives with one or more children age 12 or younger*

Unweighted N's listed above.

NorthEast: CT, ME, MA, NH, NJ, NY, PA, RI, VT

MidWest: IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI

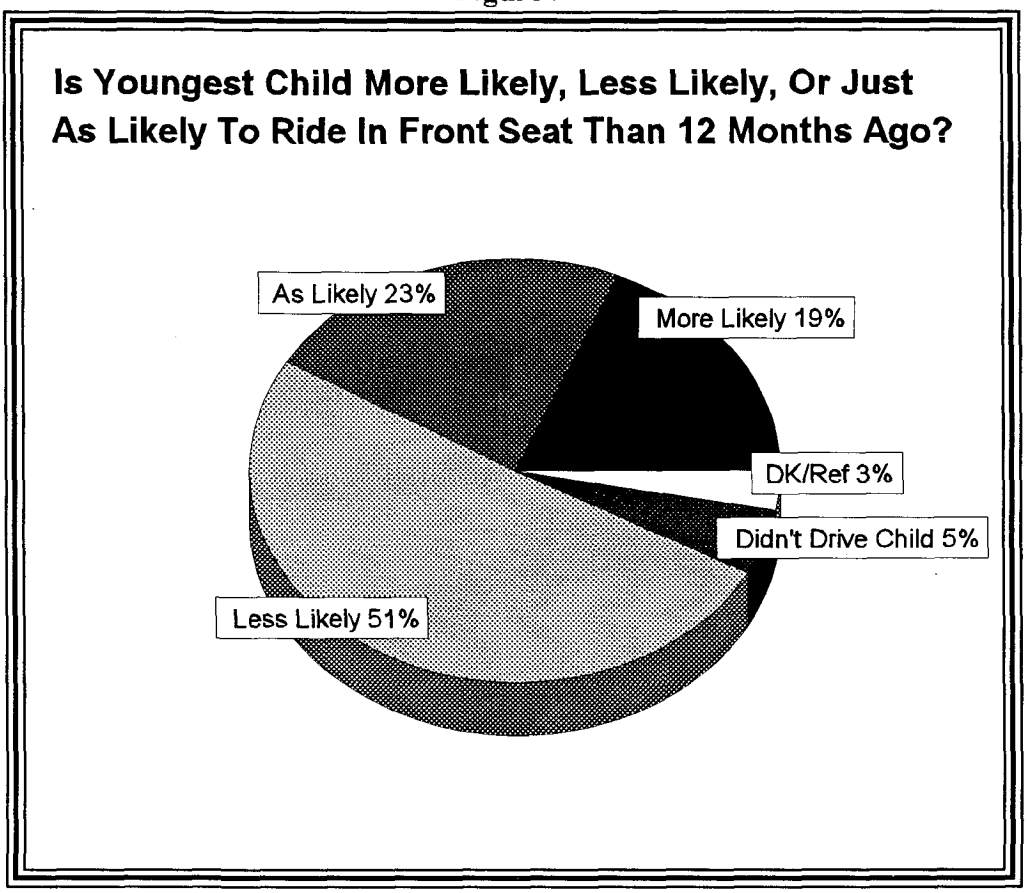
South: AL, AR, DE, DC, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV

West: AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, WY

Change In Seating Position Of Child Age 12 Or Younger From 12 Months Ago

Besides asking about the youngest child's seating position during the most recent 30-day time period, the interviewers asked if the child's usual seating position when riding with the respondent had changed from a year earlier. About half (51%) of the children reportedly were now less likely than a year ago to ride in the front seat. Another 23% were said to be just as likely to ride in the front compared to a year earlier while 19% were said to be more likely to ride in the front.

Figure 9



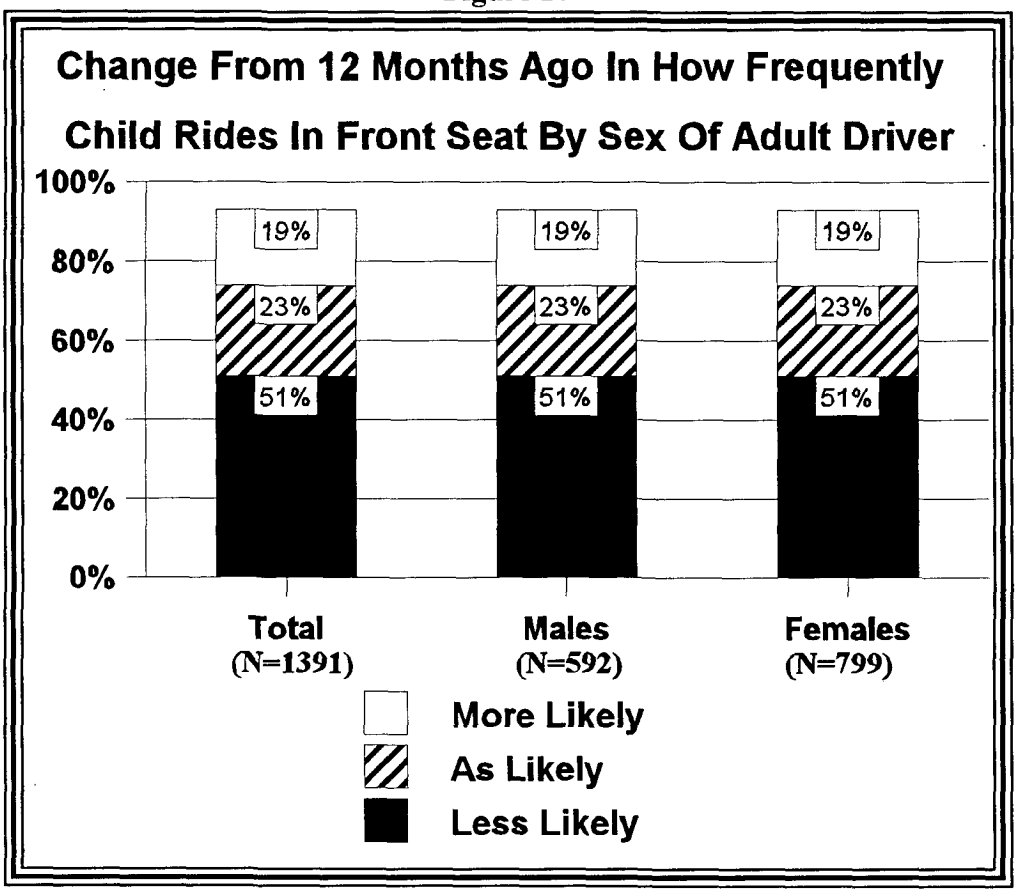
Qx: *Compared to 12 months ago, is this child more likely to ride in the front seat when you drive, as likely to ride in the front seat, or less likely to ride in the front seat?*

Base: *Drives a motor vehicle that has seat belts, and lives with one or more children age 12 or younger.*

Unweighted N=1391

There was virtually no difference between male and female drivers in reported change in the child's seating position. Fifty-one percent of both groups answered that the youngest child was now less likely to ride in the front seat of the vehicle compared to a year earlier.

Figure 10



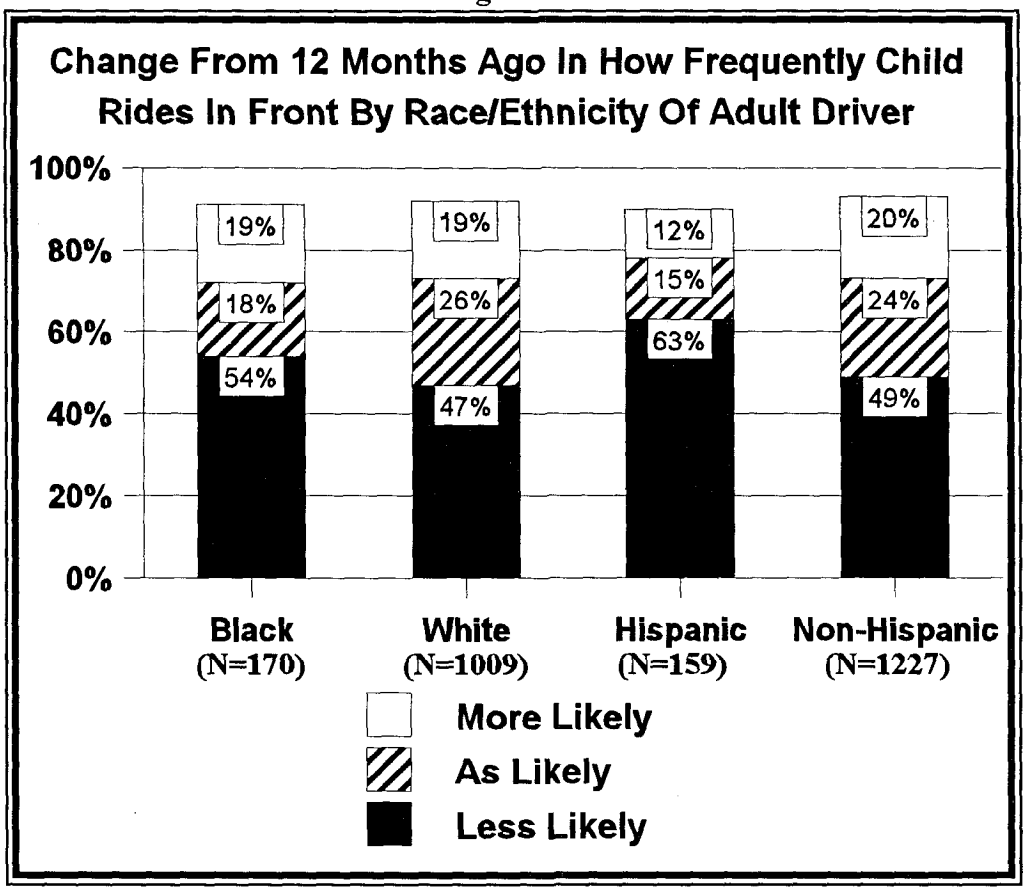
Qx: *Compared to 12 months ago, is this child more likely to ride in the front seat when you drive, as likely to ride in the front seat, or less likely to ride in the front seat?*

Base: *Drives a motor vehicle that has seat belts, and lives with one or more children age 12 or younger.*

Unweighted N's listed above.

As noted on page 4, the numbers of black and Hispanic drivers in the sample who resided with children age 12 and younger were relatively small. Thus readers once again are cautioned against over-interpreting the results. More than three-in-five Hispanics (63%) reported that the youngest child was now less likely to ride in the front compared to fewer than half (49%) of non-Hispanics. The gap between blacks and whites was smaller: 54% to 47%.

Figure 11



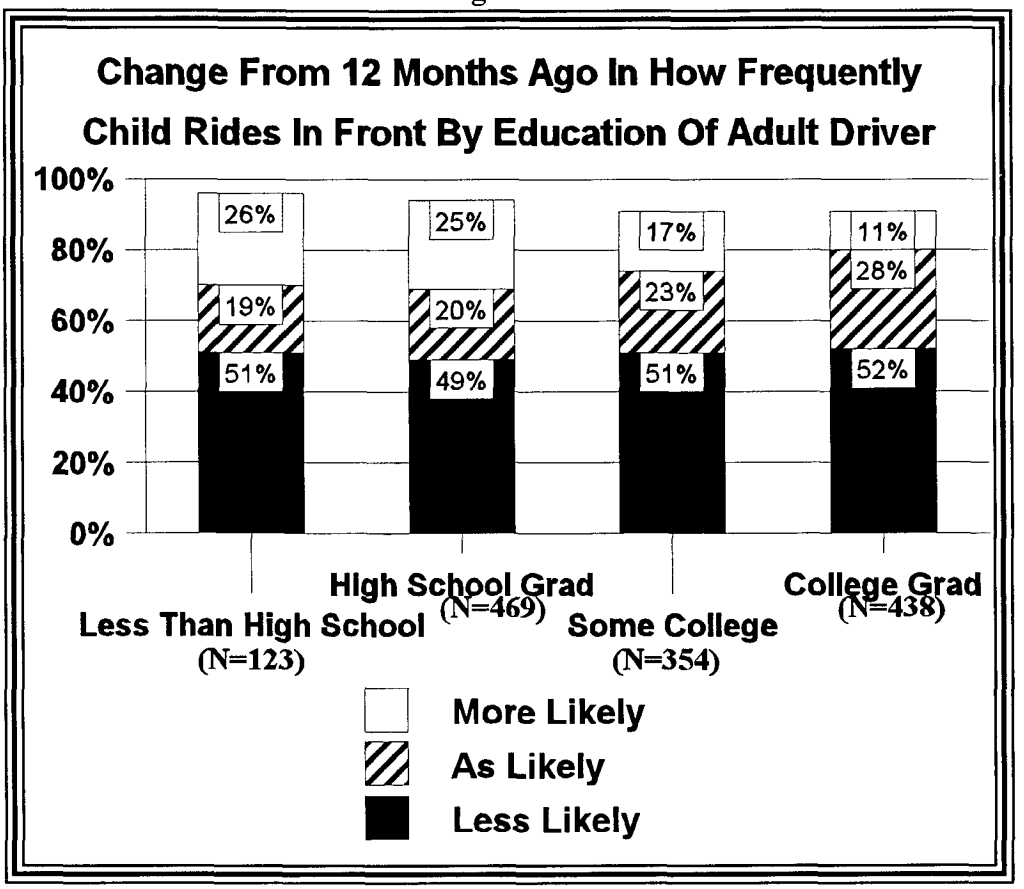
Qx: *Compared to 12 months ago, is this child more likely to ride in the front seat when you drive, as likely to ride in the front seat, or less likely to ride in the front seat?*

Base: *Drives a motor vehicle that has seat belts, and lives with one or more children age 12 or younger.*

Unweighted N's listed above.

There was no appreciable difference across levels of education in the percentage of drivers who said that the youngest child was less likely to ride in the front seat than a year ago. However, one-fourth (25%) of drivers who had no college experience answered that the child was now more likely to ride in the front seat, compared to 17% of those with some college exposure and 11% of college graduates.

Figure 12



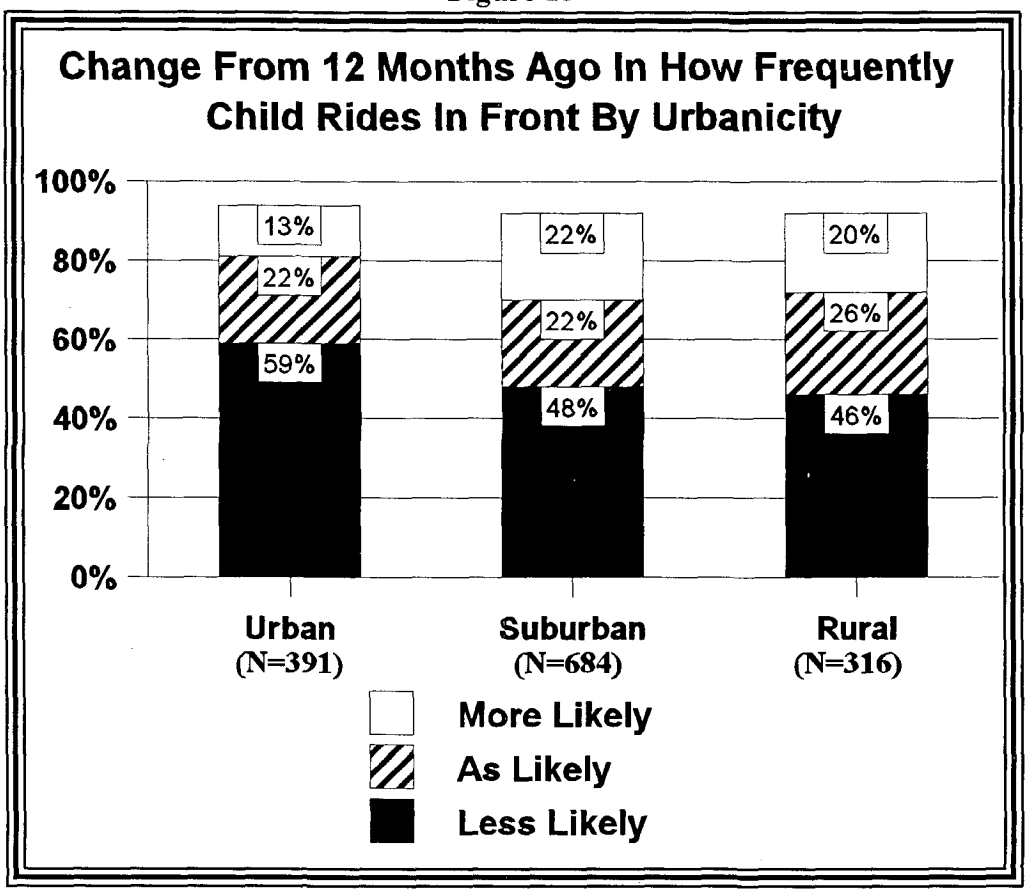
Qx: *Compared to 12 months ago, is this child more likely to ride in the front seat when you drive, as likely to ride in the front seat, or less likely to ride in the front seat?*

Base: *Drives a motor vehicle that has seat belts, and lives with one or more children age 12 or younger.*

Unweighted N's listed above.

The data suggested greater movement of children from the front to the back seat in urban areas compared to suburban and rural areas. In urban areas, about three-fifths (59%) of drivers said the youngest child was now less likely to ride in the front seat. Fewer than half of drivers in suburban (48%) and rural (46%) areas said the same.

Figure 13



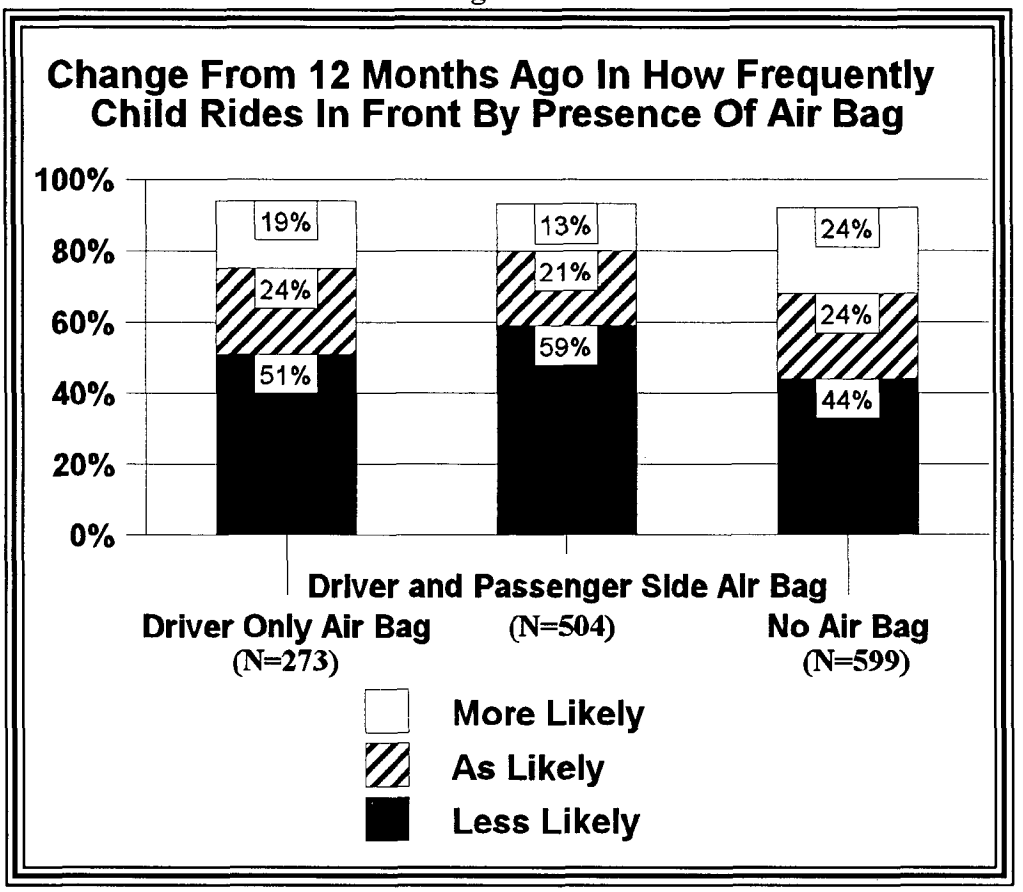
Qx: *Compared to 12 months ago, is this child more likely to ride in the front seat when you drive, as likely to ride in the front seat, or less likely to ride in the front seat?*

Base: *Drives a motor vehicle that has seat belts, and lives with one or more children age 12 or younger.*

Unweighted N's listed above.

Respondents were more likely to report movement of the youngest child from the front to the back seat if they had a passenger side air bag in their primary vehicle. Almost three-in-five (59%) said the child was less likely to sit in the front compared to 51% who had a driver side only air bag and 44% who had no air bag in their primary vehicle.

Figure 14



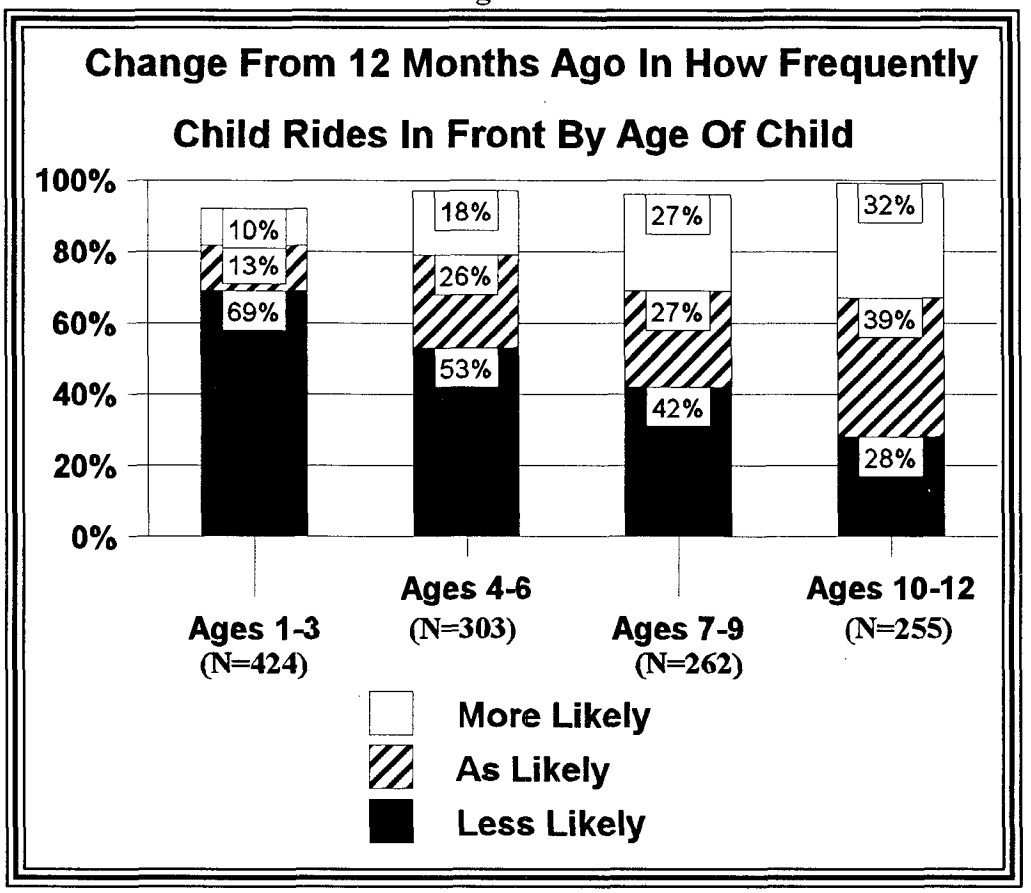
Qx: *Compared to 12 months ago, is this child more likely to ride in the front seat when you drive, as likely to ride in the front seat, or less likely to ride in the front seat?*

Base: *Drives a motor vehicle that has seat belts, and lives with one or more children age 12 or younger.*

Unweighted N's listed above.

As children became older, movement to the front seat increased. Only 10% of children ages 1 through 3 were more likely to sit in the front seat of the motor vehicle compared to 12 months earlier. This increased to 18% for ages 4 to 6, 27% for ages 7 to 9, and 32% for ages 10 to 12.

Figure 15



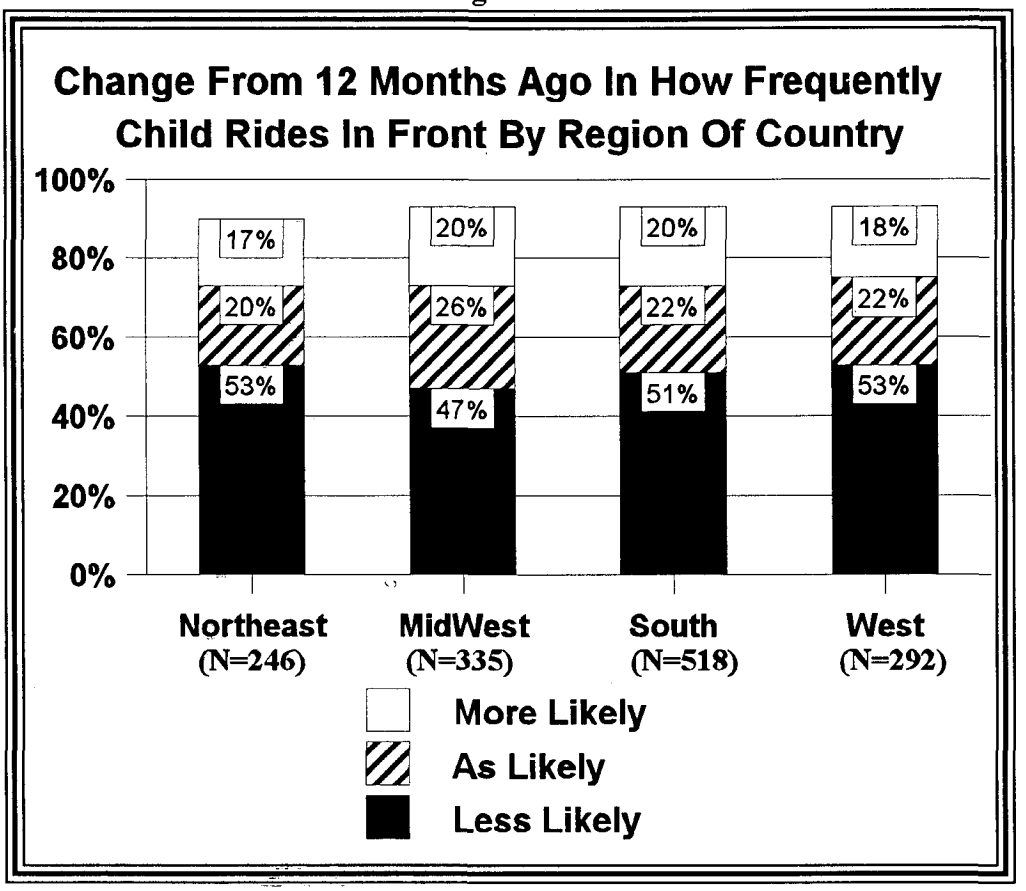
Qx: *Compared to 12 months ago, is this child more likely to ride in the front seat when you drive, as likely to ride in the front seat, or less likely to ride in the front seat?*

Base: *Drives a motor vehicle that has seat belts, and lives with one or more children age 12 or younger.*

Unweighted N's listed above.

There was relatively little difference across regions of the country in reported change over the past year in the youngest child's seating position. The MidWest was a few percentage points higher than the other regions in the proportion of drivers who said the child was as likely (26%) to sit in the front seat, and a few percentage points lower than the other regions in the proportion who said that the child was less likely (47%) to sit in the front seat.

Figure 16



Qx: *Compared to 12 months ago, is this child more likely to ride in the front seat when you drive, as likely to ride in the front seat, or less likely to ride in the front seat?*

Base: *Drives a motor vehicle that has seat belts, and lives with one or more children age 12 or younger*

Unweighted N's listed above.

NorthEast: CT, ME, MA, NH, NJ, NY, PA, RI, VT

MidWest: IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI

South: AL, AR, DE, DC, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV

West: AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, WY

If the child was more likely to ride in the front seat than a year earlier, the interviewers asked the reason why. Most often, it was because the child preferred the front (41%). Having no other place for the child to sit ranked second in frequency (22%). There were an assortment of additional reasons volunteered by the respondents (36%), which Table 1 has placed in an "Other" category.

Table 1
Reason Child Is More Likely To Ride In Front Than 12 Months Ago

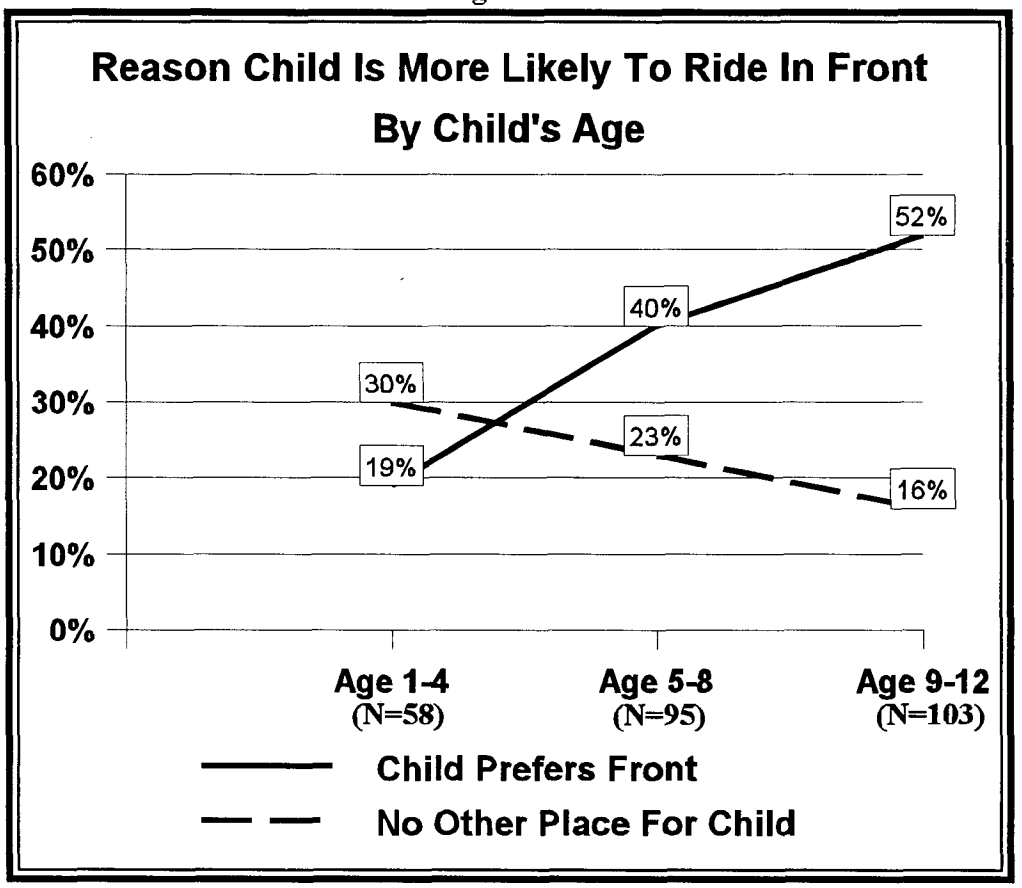
Qx: Why is this child more likely to ride in the front seat when you drive?
Base: Said the designated child was more likely to ride in the front seat compared to 12 months ago.
Unweighted N=263

Reason	Percent
Child Prefers The Front	41%
No Other Place For Child	22%
Other	36%
Don't Know	4%

*Total exceeds 100% due to multiple responses.

The child preferring the front seat became a more predominant reason as the child grew older. Conversely, not having any other place for the child than the front seat receded in relative importance as the child became older.

Figure 17



Qx: *Why is this child more likely to ride in the front seat when you drive?*
Base: *Said the designated child was more likely to ride in the front seat compared to 12 months ago.*
Unweighted N's listed above.

Similarly, if the child was less likely to ride in the front seat than 12 months ago, the interviewer asked the reason why. Most often, the respondents replied that it was "safer in back" (59%). They also specifically referred to danger from air bags (21%). Other reported reasons are shown in the Table below.

Table 2
Reason Child Is Less Likely To Ride In Front Than 12 Months Ago

Qx: Why is this child less likely to ride in the front seat when you drive?
Base: Said the designated child was less likely to ride in the front seat compared to 12 months ago.
Unweighted N=711

Reason	Percent
Safer In Back	59%
Danger From Air Bags	21%
Child Prefers Back	9%
No Other Place For Child	8%
Other	14%
Don't Know	1%

*Total exceeds 100% due to multiple responses.

1998 SURVEY RESULTS

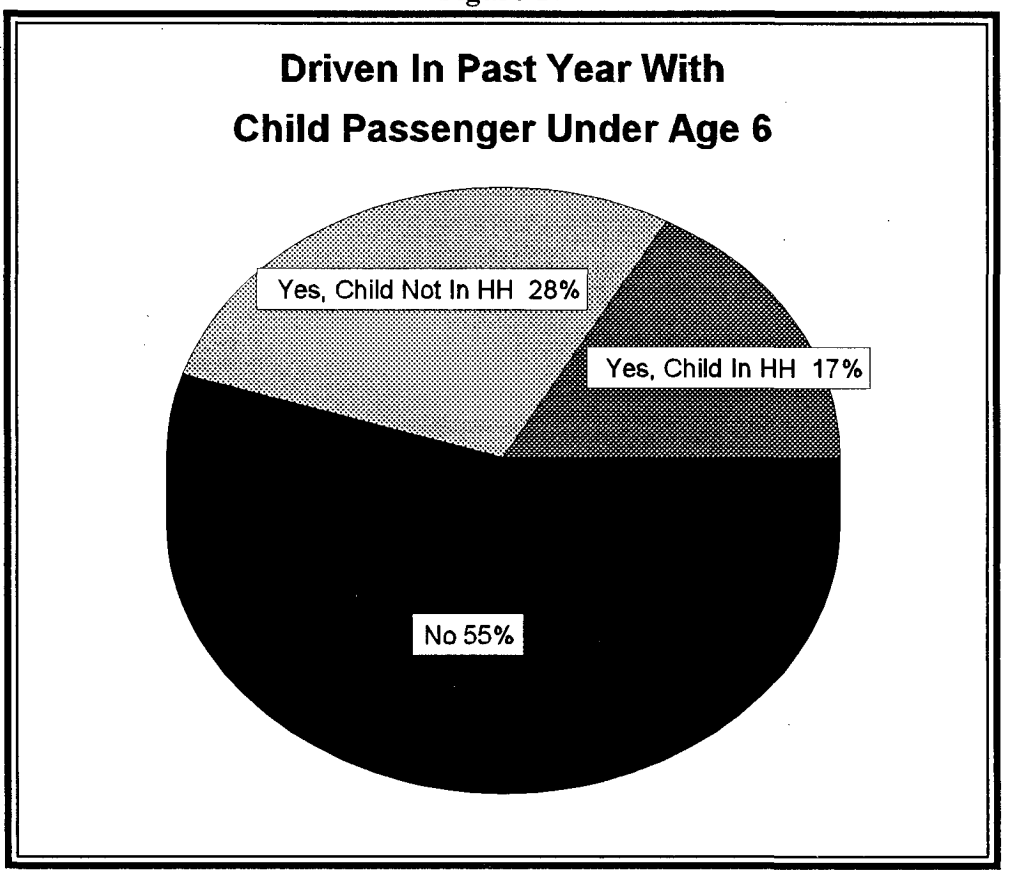
CHAPTER 2

TRANSPORTERS OF YOUNG CHILDREN

Driving With A Child Under Age 6

More than four-out-of-ten drivers (44%)[1] had in the past year driven a motor vehicle with a child under age 6 as a passenger. Seventeen percent had driven a child in that age range who lived in their household. A larger percentage of the driver population (28%)* did not live with a child under the age of six but nonetheless had driven a child of that age in the past year. Thus efforts to educate the public about the importance of proper restraint use by children would miss a large proportion of drivers who transport children if limited to those residing in the child's household.

Figure 18



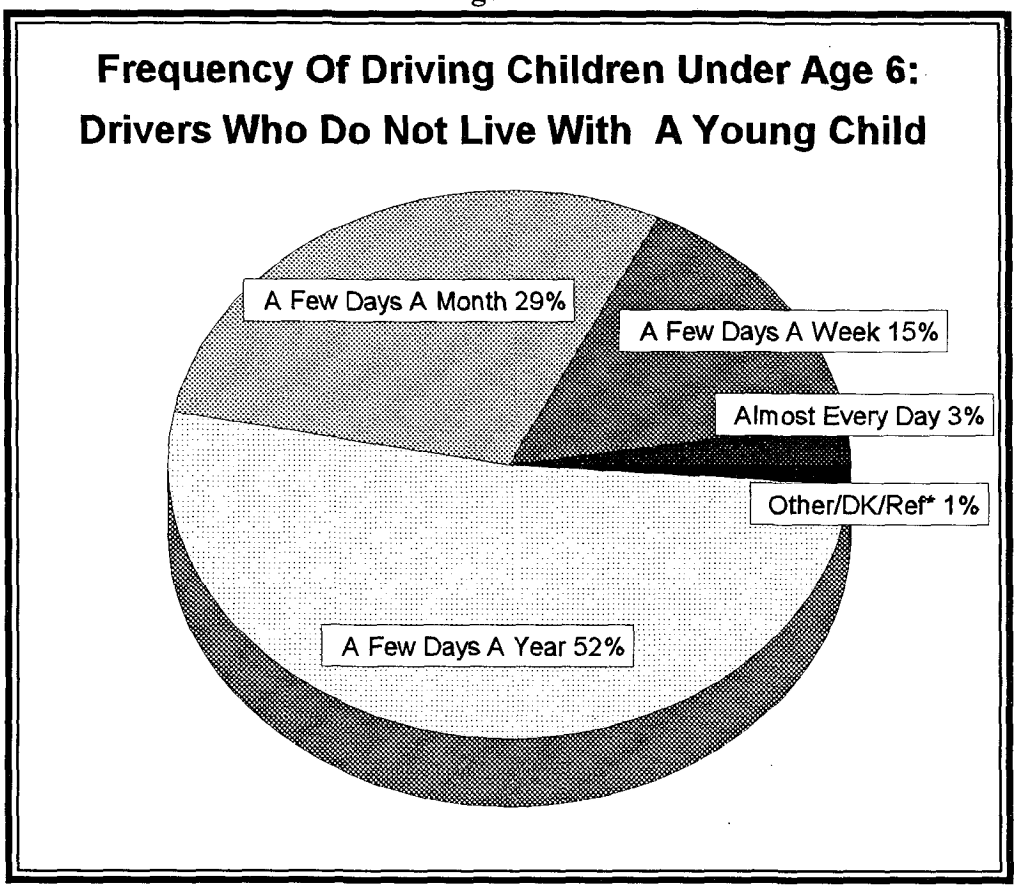
Qx: In the past 12 months, have you driven with any children under age 6?
Base: Drives a motor vehicle. Unweighted N=3788
**Includes 11 drivers who drove children living outside household, but not children living within.*

[1]This figure differs from the sum of the two components presented in Figure 18 due to rounding (16.8% + 27.7% = 44.4%). Similar differences appear on other pages in this report.

Drivers Who Do Not Live With The Child

Whereas the majority of drivers who had transported a child under age six in the past year did not live with a child that age, their frequency of transporting young children would be expected to be less than that of drivers who live with young children. Figure 19 suggests that is the case. More than half (52%) of drivers who drove with a child passenger under age 6 in the past year, despite not living with a child in that age range, did so only a few days a year. Still, 18% of these drivers drove one or more young children either almost every day (3%) or a few days a week (15%). Another 29% drove one or more young children a few days a month.

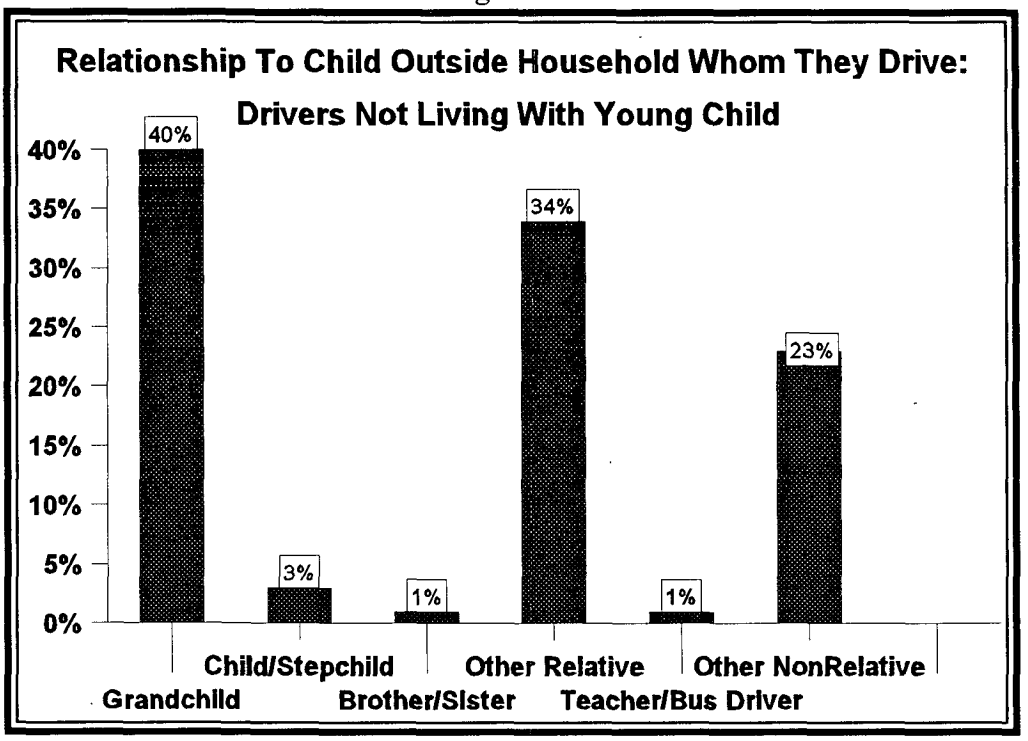
Figure 19



Qx: *How often do you drive with children under six?*
Base: *Does not live with a child under age six, but has driven with child passengers in that age range in the past year.*
Unweighted N=1028
** DK = Don't Know Ref = Refused*

When asked their relationship to the young child(ren) outside their household whom they drove, 40% said that they were the grandparents. Small percentages answered that they were the parents/step-parents (3%) or were siblings (1%). Far more (34%) responded that they were some "other relative" than those just mentioned. One percent said they were teachers or bus drivers and 23% said they were some other non-relative.

Figure 20



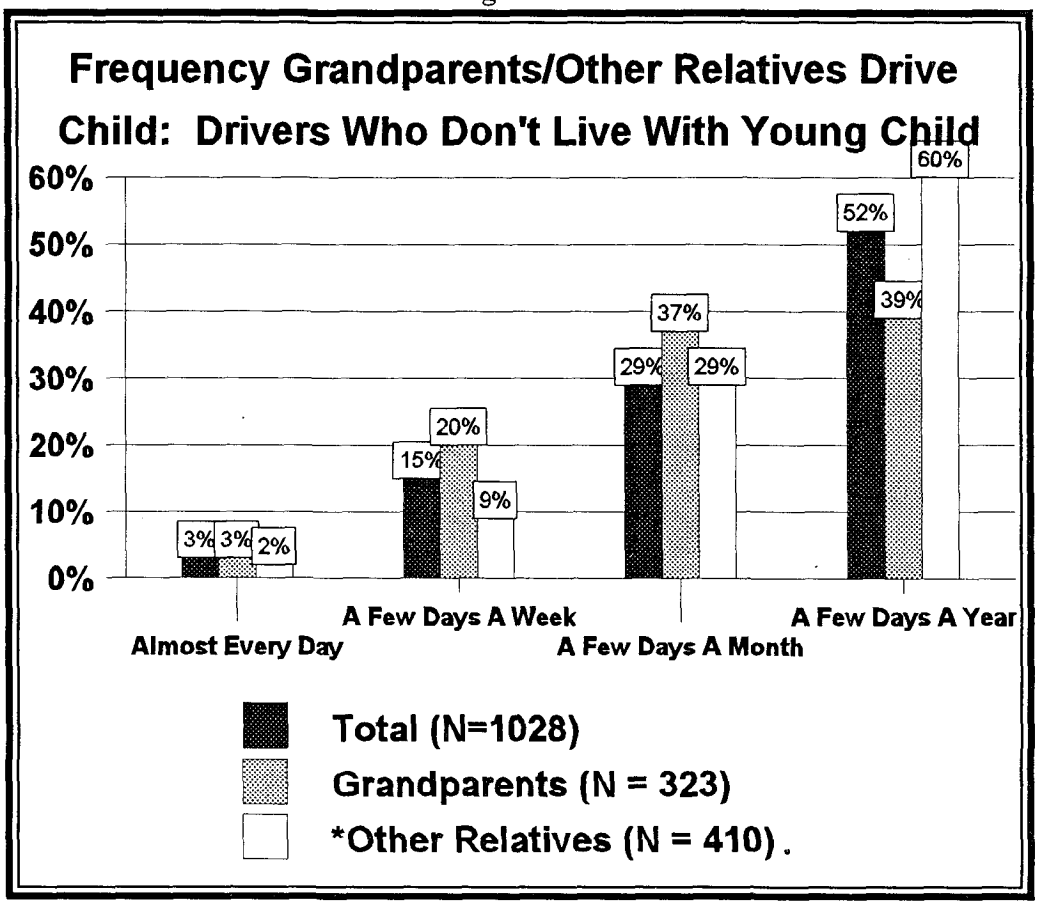
Qx: *What is your relationship to the child or children under age 6 that you at least sometimes drive with?*

Base: *Does not live with a child under age six, but has driven with child passengers in that age range in the past year (excludes 3 cases where no driving frequency was given).*

Unweighted N = 1025

As shown on the previous page, persons who did not live with a young child but had driven one or more young children in the past year most often said they were the child(ren)'s grandparents or "other relatives." Figure 21 compares these two groups in their reported frequency of driving young children. It shows that grandparents transported young children more often compared to "other relatives." Among drivers who did not live with a young child but said they drove a young grandchild in the past year, 60% answered that they drove their grandchild at least a few days a month. The comparable figure was 40% for "other relatives" (excluding parents and siblings). It was 47% for all drivers not living with a young child, relatives and nonrelatives combined.

Figure 21



Qx: *What is your relationship to the child or children under age 6 that you at least sometimes drive with?*

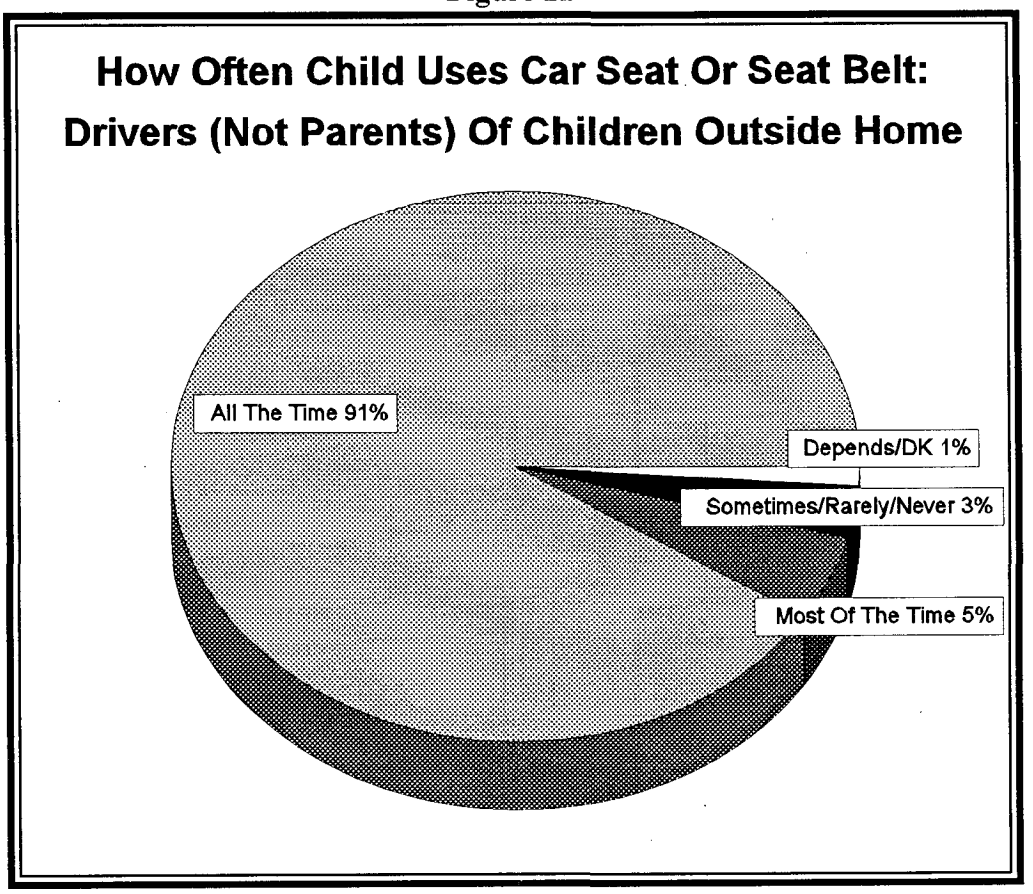
Qx: *How often do you drive with children under six?*

Base: *Does not live with a child under age six, but has driven with child passengers in that age range in the past year.*

*Unweighted N's listed above. *Excludes parents/step-parents and siblings.*

At this point in the interview, those respondents who said they were the parents of the children outside the household they had driven were skipped to a section of the survey asking detailed child restraint questions. The interviewers asked the remaining respondents (the grandparents, other relatives, other non-relatives, etc.) how often the child(ren) used restraints when riding with them. Almost all (*95%) said that the child was in a child car seat or else a seat belt either all the time (91%) or most of the time (5%).

Figure 22



Qx: *When you are driving and children under age 6 are riding with you, would you say that they are in a child car seat or a seat belt all of the time, most of the time, some of the time, rarely, or never?*

Base: *Does not live with a child under age 6, but has driven with child passengers in that age range in the past year (who were not their own children).*

Unweighted N=990

**90.8% + 4.5%*

1998 SURVEY RESULTS

CHAPTER 3

1998 CAR SEAT USE

Parent/Caregiver Subgroup

The survey selected a subgroup of drivers to ask detailed questions about children's use of car seats. These drivers were considered most likely to have significant responsibility for transporting young children ("parents/caregivers"). The respondents were chosen for questioning if they fell into one of the following categories:

- *Parents of children under age 6.* Usually this involved a parent living with their child. In a few cases it was a parent not living with their child, but who drove the child at least on occasion during the past year.

- *Non-parents living with children under age 6.* These were respondents who indicated that they at least sometimes drove with a child under age 6 who lives in their household.

The interviewers asked respondents to focus on one specific child for the questions. If there was more than one child under age 6 in the household, one child was randomly selected. Priority, however, was given to selecting from the respondent's own children if other young children were also living in the household. Respondents were asked about car seat use with the selected child. This procedure yields a national sample of drivers for whom car seat usage issues would be most applicable.

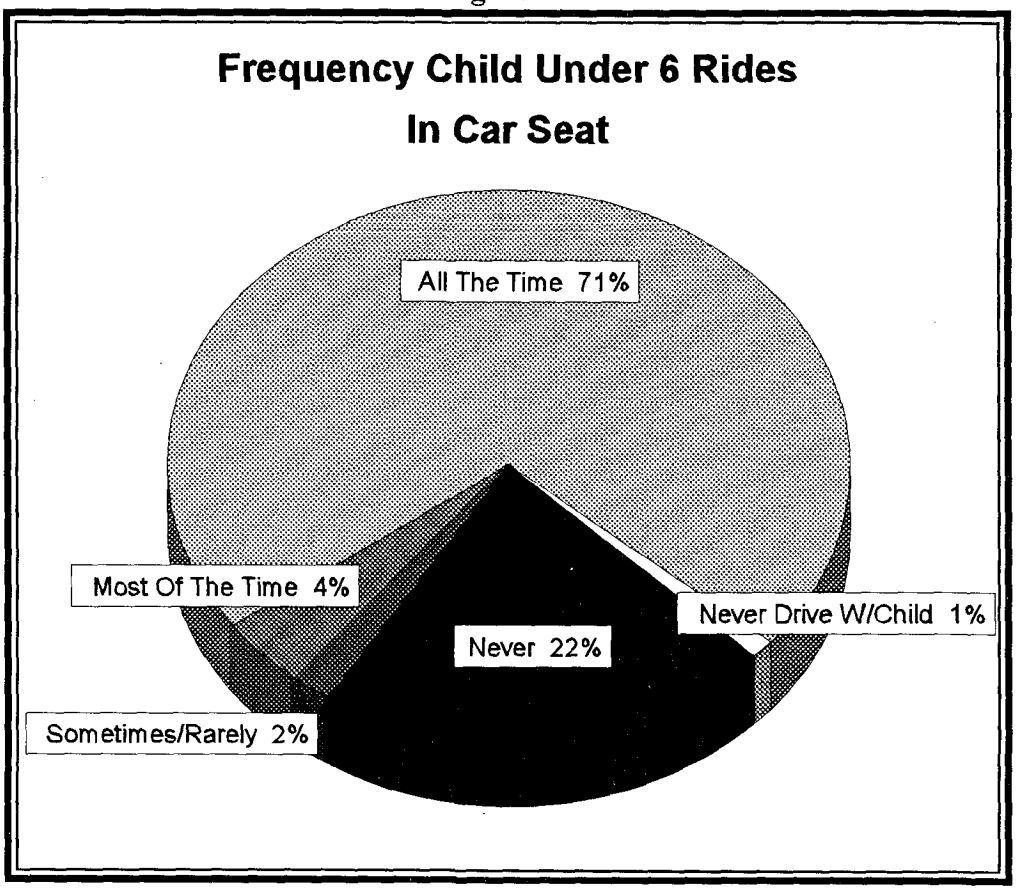
Reported Frequency of Car Seat Use

Interviewers asked the above driver subgroup how frequently the selected child uses a car seat when riding with them. Responses to this question are to be interpreted with caution, as car seats may not be appropriate for larger children under age 6. The safety restraint system used should be the one appropriate for the child's size and development. Children should ride rear facing until at least 20 pounds and one year of age. Children who reach 20 pounds before one year of age should ride rear facing in a child safety seat approved at a higher weight. Keeping a child rear facing as long as possible helps protect the fragile baby from spinal cord injuries (i.e., the back of the car seat supports infants' head, neck and back and prevents spinal cord injuries in a frontal crash).

Past the first year of age, children weighing about 20 to 40 pounds should ride facing forward in convertible seats or harness systems. Children who have outgrown their convertible seats or harnesses should ride in booster seats until adult belts fit them properly. Older children may wear vehicle seat belts when the lap belt stays low and snug across the hips without riding up over the stomach, and the shoulder belt does not cross the face or neck.

Almost all members of the parent/caregiver subgroup reported that the selected child used a car seat either "all of the time" (71%) or "never" (22%). Only 6% said that the child was a car seat user, but not all the time. If the child never used a car seat, it usually was because the child reportedly had graduated to seat belt use (see page 68).

Figure 23



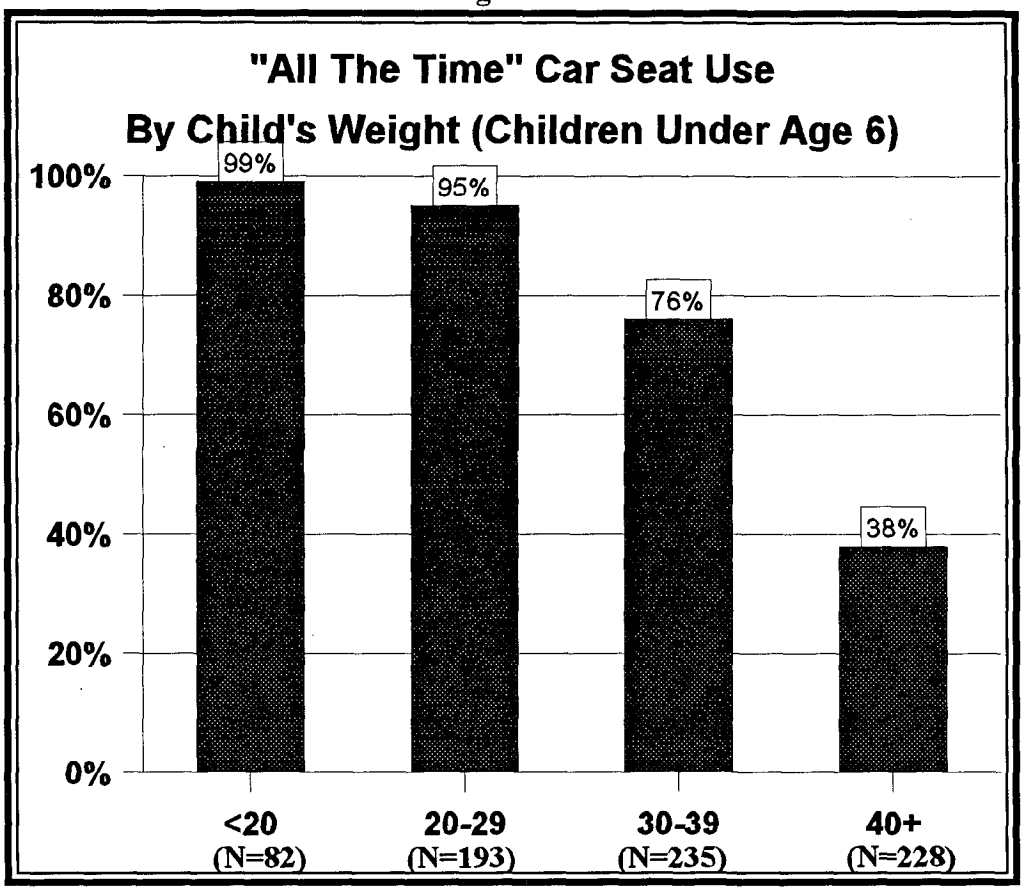
Qx: *When you are driving and (AGE) rides in the vehicle with you, how often does (he/she) ride in a child car seat? Child car seats include infant seats, toddler seats and booster seats. Would you say (he/she) rides in a child car seat all of the time, most of the time, some of the time, rarely, or never?*

Base: *Parents/caregivers as defined on page 28.*

Unweighted N=754

Virtually all parents/caregivers (99%) said the selected child always used a car seat when riding with them if the identified child weighed less than 20 pounds. The finding was similar (95%) when the selected child weighed from 20 to 29 pounds. The percentage then declined to 76% for children weighing 30 to 39 pounds, and to 38% for children under age 6 who weighed 40 pounds or more.

Figure 24



Qx: How much does (he/she) weigh?

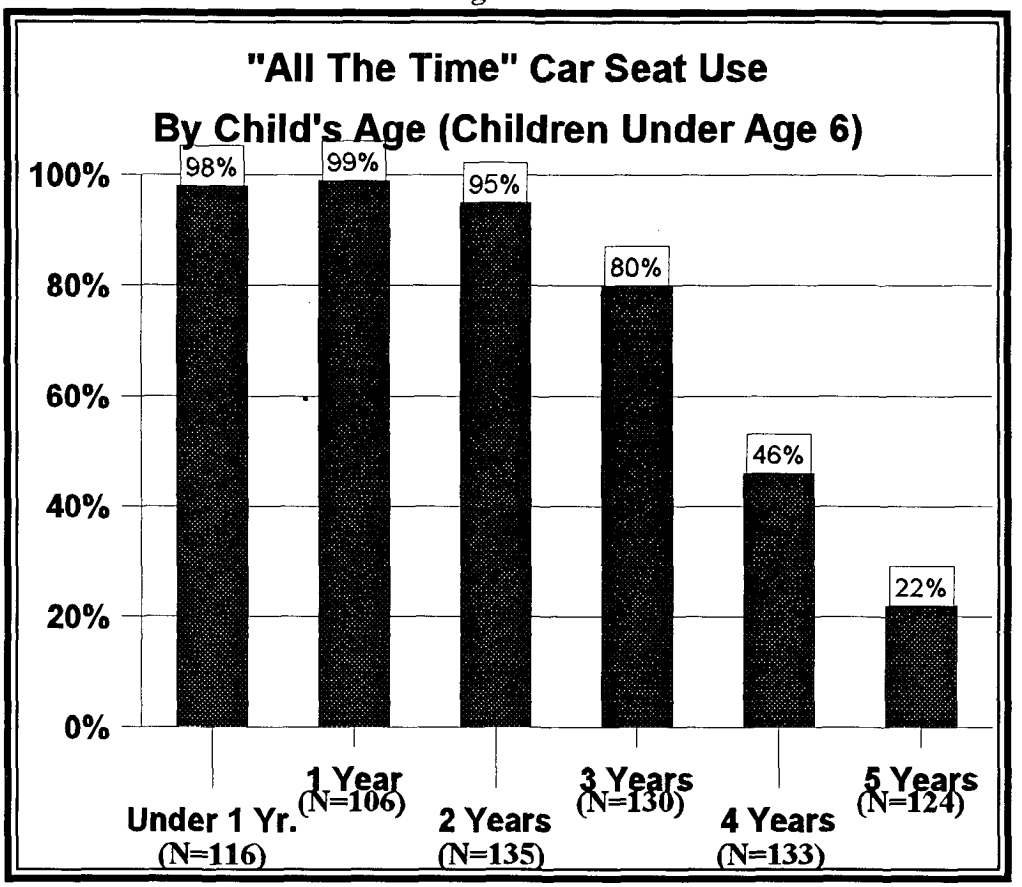
Qx: When you are driving and (AGE) rides in the vehicle with you, how often does (he/she) ride in a child car seat? Child car seats include infant seats, toddler seats and booster seats. Would you say (he/she) rides in a child car seat all of the time, most of the time, some of the time, rarely, or never?

Base: Parents/caregivers as defined on page 28.

Unweighted N's listed above.

The data summarized in Figure 25 suggests that discontinuation of car seat use by most children occurred when the child was 3 or 4 years old. More than 9-out-of-10 children age 2 or younger reportedly used car seats all of the time. The percentage then declined to 80% for 3-year-olds, and to 46% for 4-year-olds. At 5 years of age car seat use was a relative rarity as only 22% of parents/caregivers reported that the child used a car seat all of the time when riding with them.

Figure 25



Qx: What is the age of the (CHILD)?

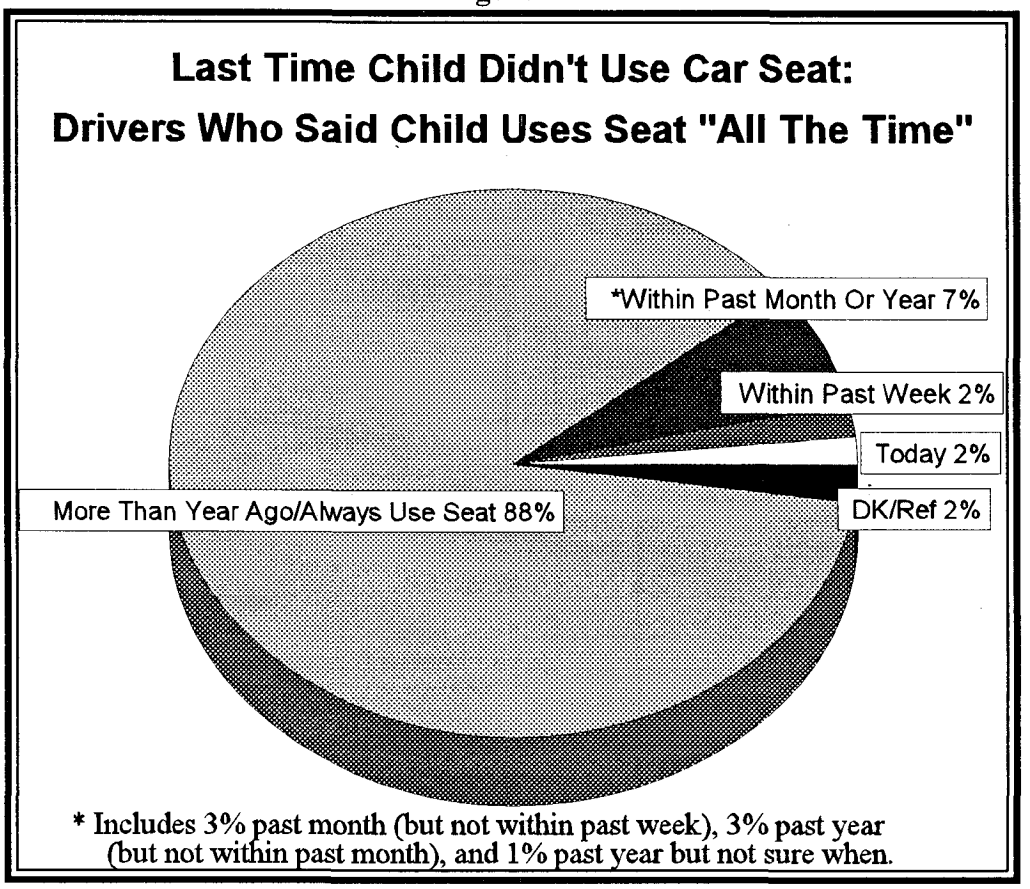
Qx: When you are driving and (AGE) rides in the vehicle with you, how often does (he/she) ride in a child car seat? Child car seats include infant seats, toddler seats and booster seats. Would you say (he/she) rides in a child car seat all of the time, most of the time, some of the time, rarely, or never?

Base: Parents/caregivers as defined on page 28.

Unweighted N's listed above.

Research on adult seat belt use has found that some drivers will report wearing seat belts "all the time" but admit on a follow-up question that they did not use their seat belt recently. In 1998, 10% of drivers who said they used their seat belt "all the time" later stated that they had not worn their seat belt in the past day or week (see Volume 2 of this series: Seat Belt Report). Figure 26 examines whether this discrepancy also occurs for reported car seat use. Among drivers who said that the child always used a car seat when riding with them, 4% also said the child had not ridden in a car seat at least once in the past day or week when the respondent was driving the child.

Figure 26



Qx: *When you are driving and (AGE) rides in the vehicle with you, how often does (he/she) ride in a child car seat? Child car seats include infant seats, toddler seats and booster seats. Would you say (he/she) rides in a child car seat. . .*

Qx: *When was the last time (he/she) did not ride in a child car seat when you were driving?*

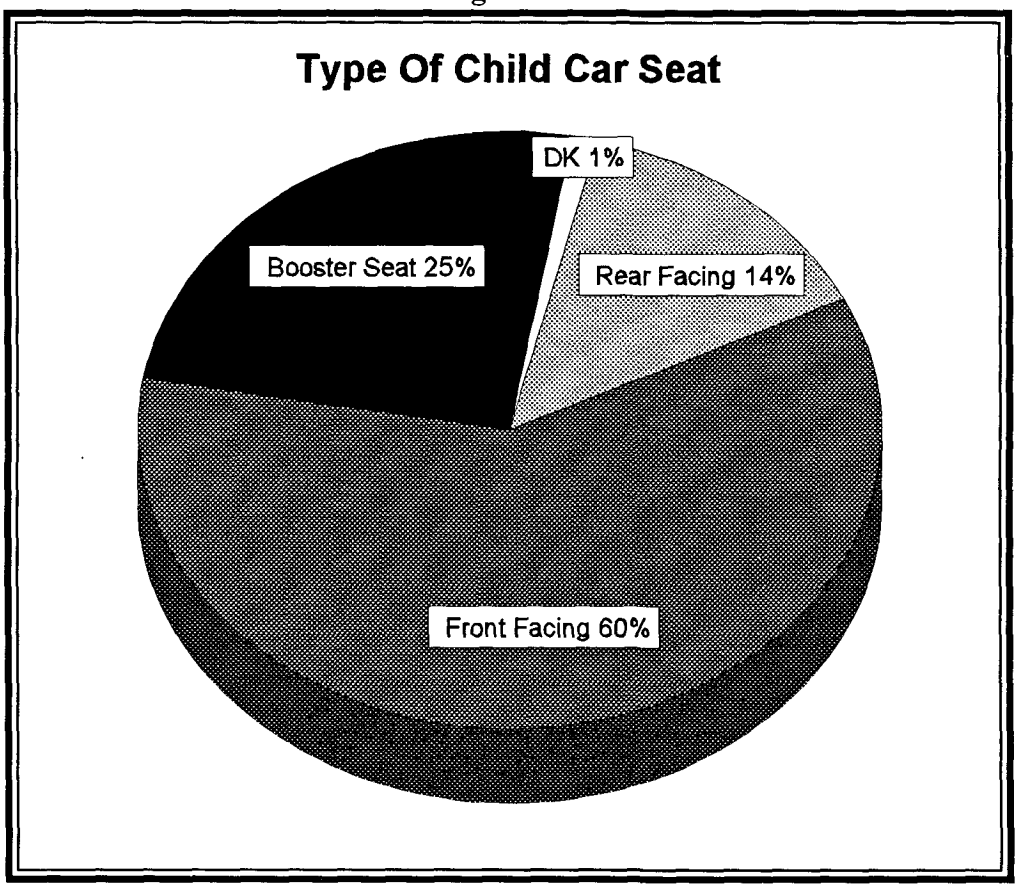
Qx: *[If "don't know] Has there been any occasion in the past 12 months when (he/she) did not ride in a car seat when you were driving?*

Base: *Drivers who said the child uses a car seat "all the time" when they drive.*
Unweighted N=544

Type and Location of Car Seat

Parents/caregivers who reported car seat use for the designated child were asked to identify the type of seat and how it was being used. From the information provided, the survey determined that 25% were using booster seats (based on responses to questions asking strap locations on the child; readers are cautioned that some respondents may have made errors in reporting this). Of the remainder, 60% were operating in a front-facing (toddler) position, 14% in a rear-facing (infant) position, and 1% did not provide information from which the car seat could be determined.

Figure 27



Qx: *When (he/she) is fastened in the child car seat, are there straps over both shoulders, a strap across only one shoulder, or are there no straps over either shoulder?*

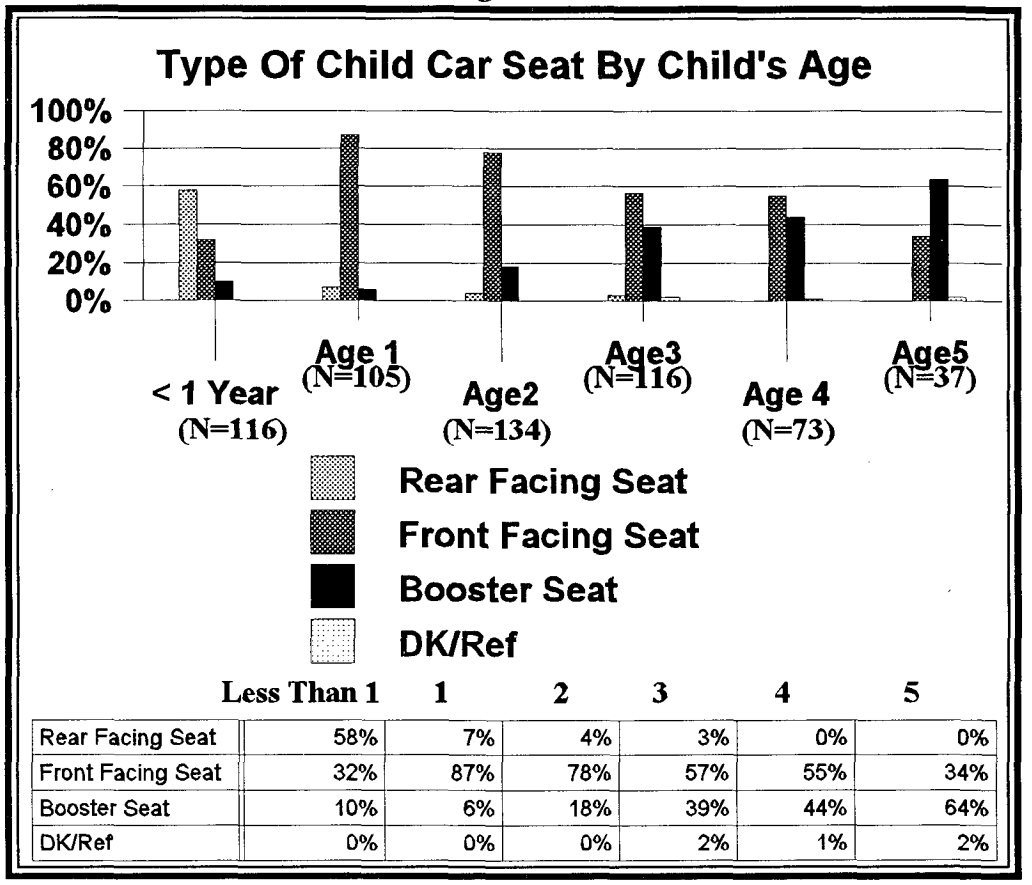
Qx: *When you are driving and (he/she) is riding in the child car seat, is it usually front facing or rear facing?*

Base: *Child at least on occasion rides in a child car seat.*

Unweighted N=585

Infants who have not reached their first birthday should always ride in a rear facing position in a car seat regardless of the child's size. Most infants who used car seats (58%) did indeed ride in a rear facing position. But about one-third (32%) rode in a front facing position in a toddler seat, with another 10% in booster seats. Front facing toddler seats predominated among one-year-olds (87%) and two-year-olds (78%). Booster seats accounted for 18% of car seat users among two-year-olds, then more than doubled to 39% at age 3. Booster seats increased as a percentage of car seat users at ages 4 and 5, though far fewer children rode in car seats at those ages.

Figure 28



	Less Than 1	1	2	3	4	5
Rear Facing Seat	58%	7%	4%	3%	0%	0%
Front Facing Seat	32%	87%	78%	57%	55%	34%
Booster Seat	10%	6%	18%	39%	44%	64%
DK/Ref	0%	0%	0%	2%	1%	2%

Qx: When (he/she) is fastened in the child car seat, are there straps over both shoulders, a strap across only one shoulder, or are there no straps over either shoulder?

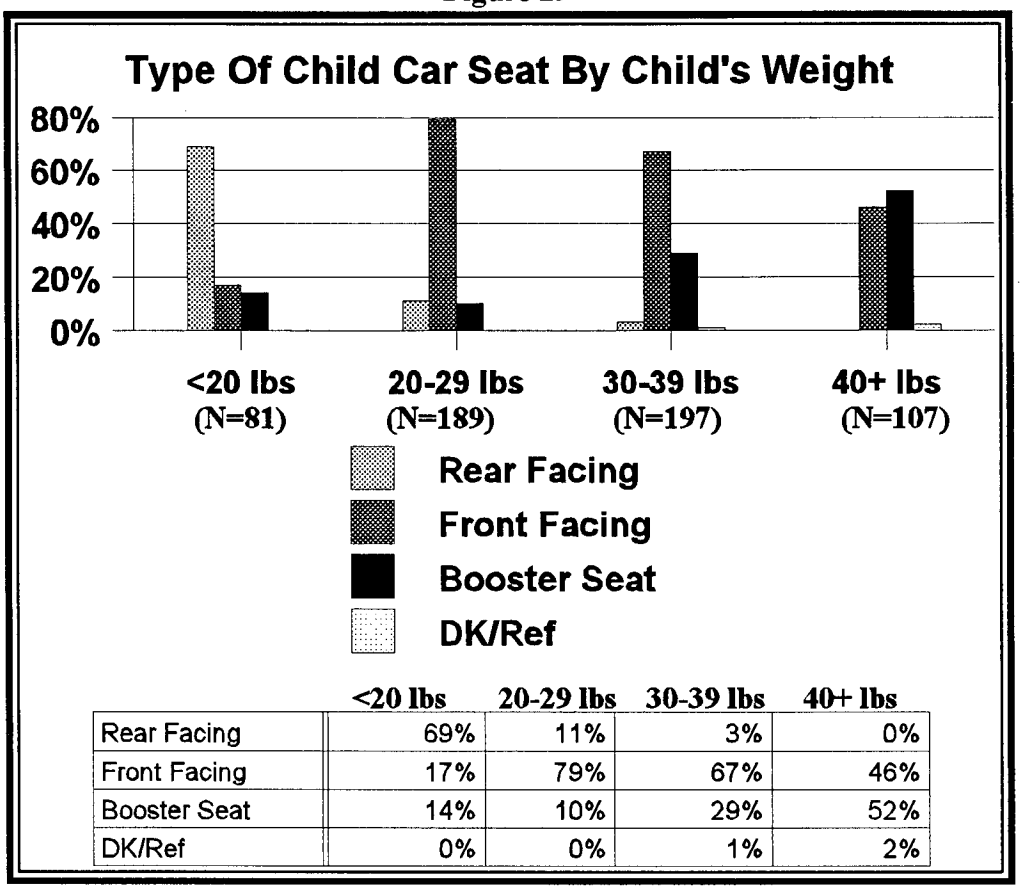
Qx: When you are driving and (he/she) is riding in the child car seat, is it usually front facing or rear facing?

Base: Child at least on occasion rides in a child car seat.

Unweighted Ns listed above.

Slightly more than two-thirds (69%) of children weighing less than 20 pounds rode in a rear facing position. A portion (14%) appeared to be using booster seats although, as mentioned earlier, at least some respondents may have made mistakes in describing the seat. Others (17%) provided information suggesting that the child usually rode front facing in a toddler seat. Front facing toddler seats predominated at 20 to 39 pounds. Past 40 pounds, there was a relatively close split between children in booster seats (the majority) and those in front facing toddler seats. Readers are cautioned that some respondents may have been guessing at children's weights.

Figure 29



	<20 lbs	20-29 lbs	30-39 lbs	40+ lbs
Rear Facing	69%	11%	3%	0%
Front Facing	17%	79%	67%	46%
Booster Seat	14%	10%	29%	52%
DK/Ref	0%	0%	1%	2%

Qx: When (he/she) is fastened in the child car seat, are there straps over both shoulders, a strap across only one shoulder, or are there no straps over either shoulder?

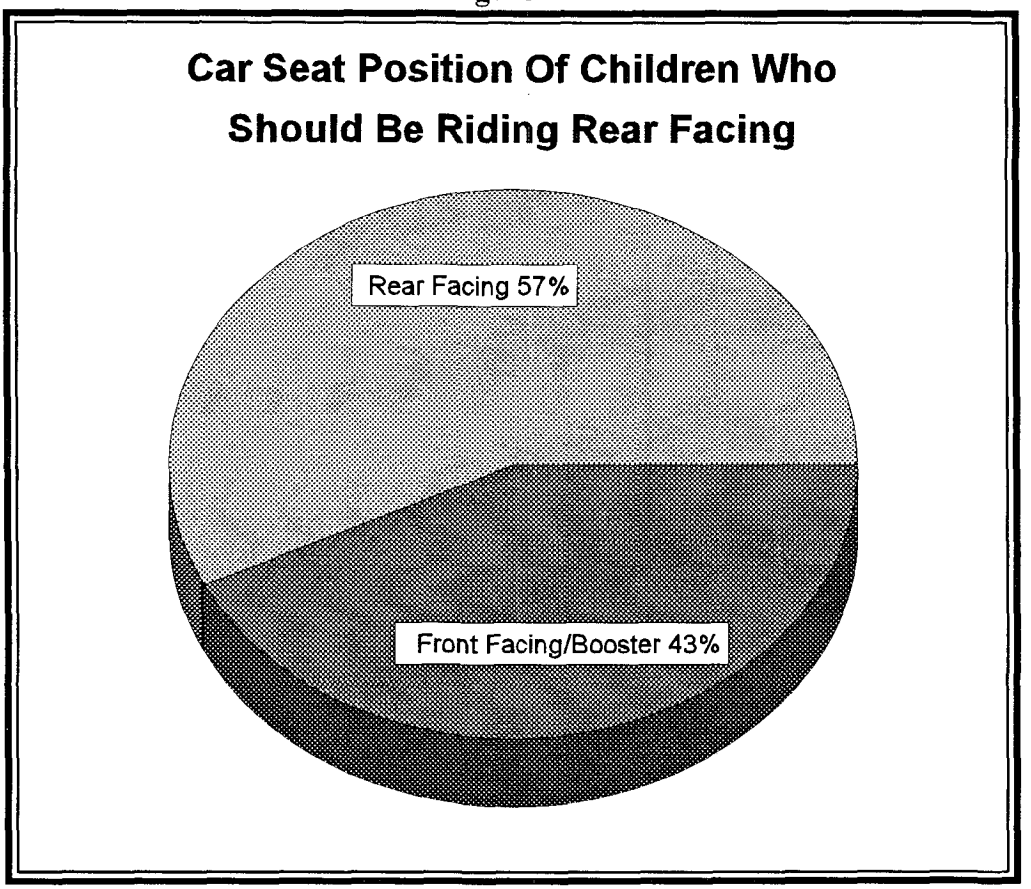
Qx: When you are driving and (he/she) is riding in the child car seat, is it usually front facing or rear facing?

Base: Child at least on occasion rides in a child car seat.

Unweighted Ns listed above.

Children should ride rear facing until at least 20 pounds and one year of age. Children who reach 20 pounds before one year of age should ride rear facing in a child safety seat approved at a higher weight. Keeping a child rear facing as long as possible helps protect the fragile baby from spinal cord injuries. Figure 30 uses the above criteria to identify what percentage of children who should be riding rear facing (those not yet one year old; those not yet 20 pounds) actually were doing so. While most (57%) were riding in the correct rear facing position, many (43%) were not.

Figure 30



Qx: When (he/she) is fastened in the child car seat, are there straps over both shoulders, a strap across only one shoulder, or are there no straps over either shoulder?

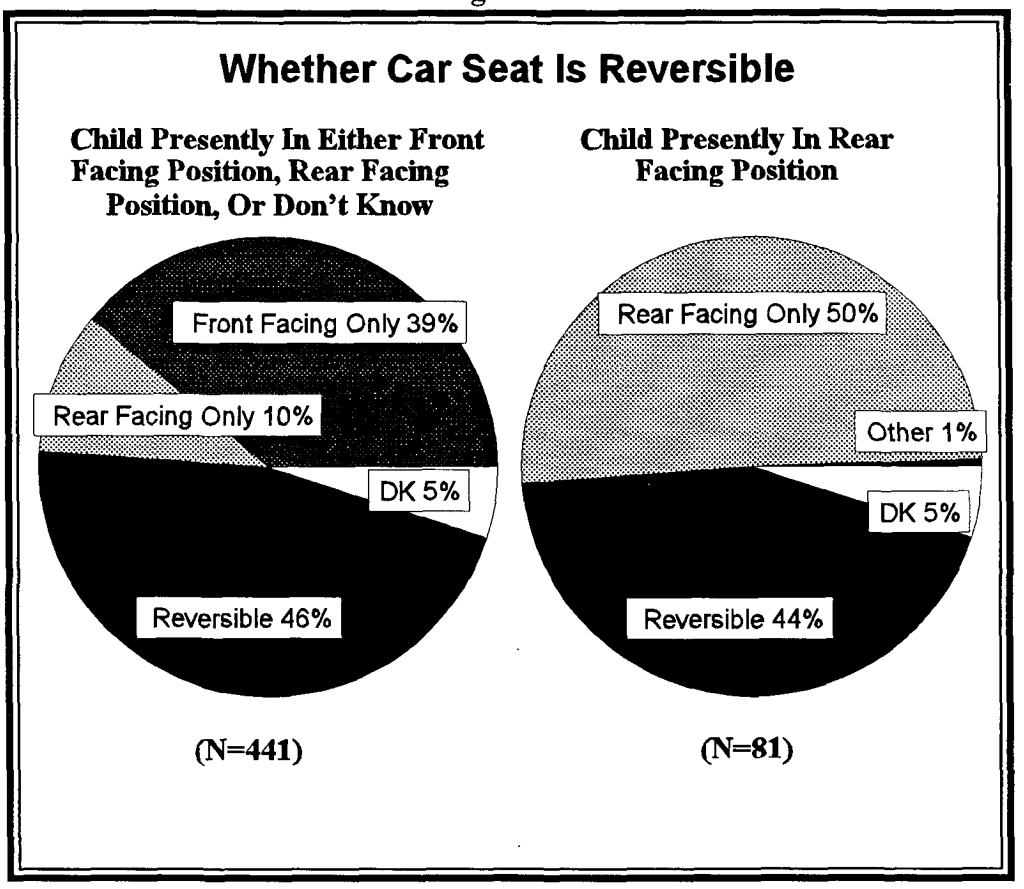
Qx: When you are driving and (he/she) is riding in the child car seat, is it usually front facing or rear facing?

Base: Child under 1 year of age, and children under 20 pounds.

Unweighted N=125.

Some car seats are reversible, where they can be used in both a front facing and a rear facing position. Thus the same seat could be used for a child who has grown from infant (rear facing) to toddler (front facing), or could revert back to a rear facing position for an infant when an older child has outgrown the seat, or could be used for both infants and toddlers if the driver interacts with children of multiple ages. In cases where the car seat was not a booster seat, almost half of parents/caregivers (46%) reported that the seat was reversible. Among infants riding in a rear facing position, 44% were known to be using a reversible seat.

Figure 31



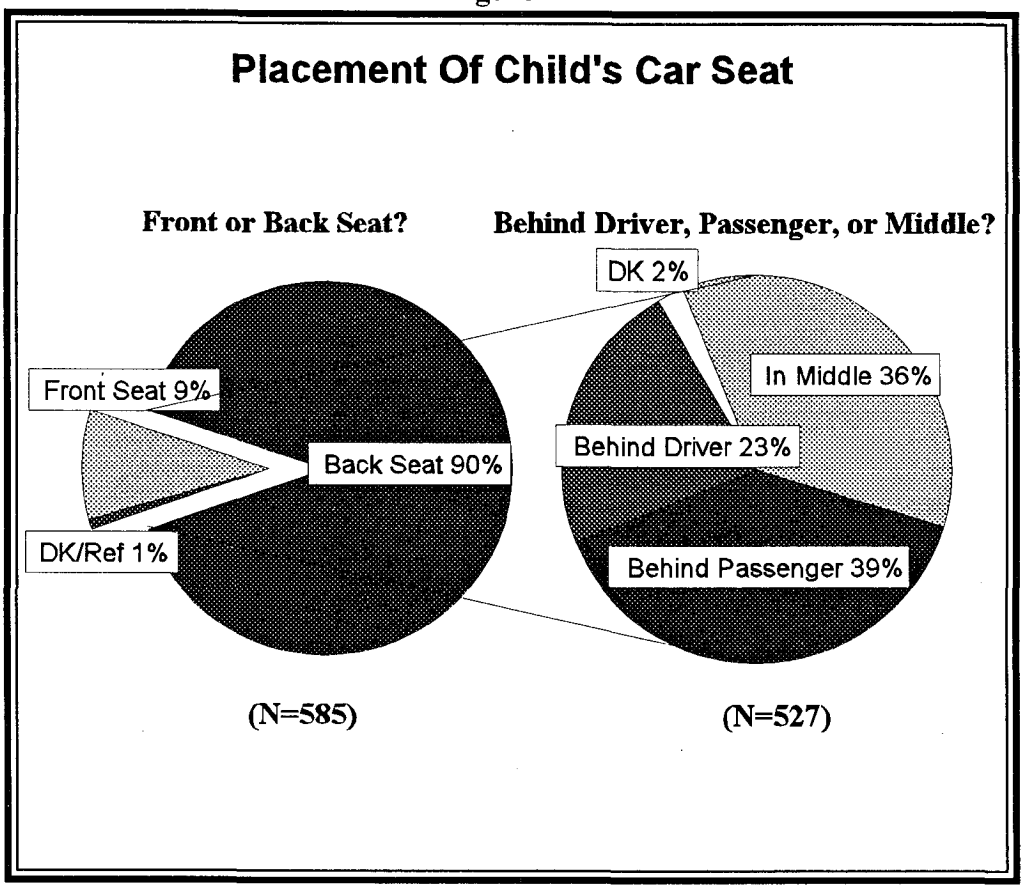
Qx: *Can the seat be used in a front facing position only, a rear facing position only, or can it be used in either position?*

Base: *Child uses a car seat that is not a booster seat.*

Unweighted N's listed above.

As noted in Chapter 1, the safest seating position for a child in a motor vehicle is the back seat. The vast majority of parents/caregivers (90%) stated that the child usually sat in the back when riding in a car seat in a vehicle they were driving, typically behind the front passenger (39%) or in the middle of the back seat (36%). Nine percent reported that the car seat was usually placed in the front.

Figure 32



Qx: *When you are driving and (he/she) rides in the child car seat, is it usually in the front seat or the back seat?*

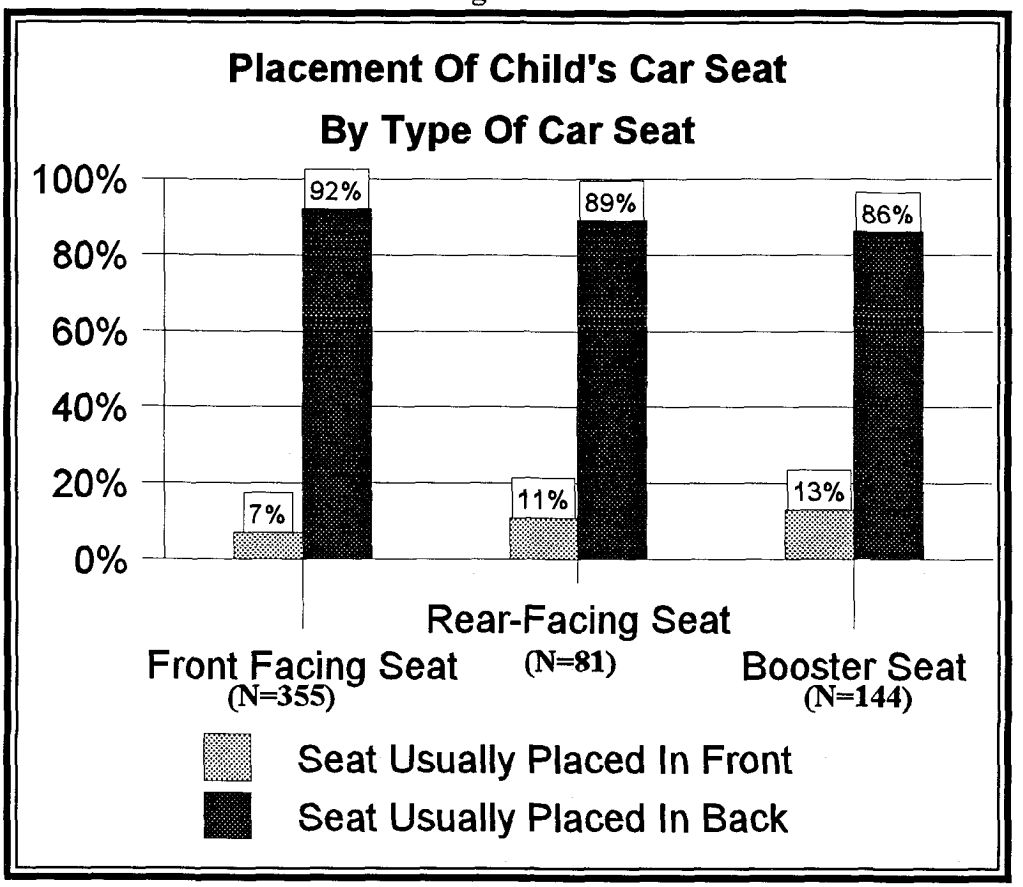
Qx: *Is the child car seat usually behind the driver, behind the passenger, or in the middle of the back seat?*

Base: *Child at least on occasion rides in a child car seat.*

Unweighted N's listed above.

The dominant location for placement of the child car seat was the back seat of the vehicle regardless of whether the child was riding in a rear-facing infant seat (89%), a front-facing toddler seat (92%), or a booster seat (86%).

Figure 33



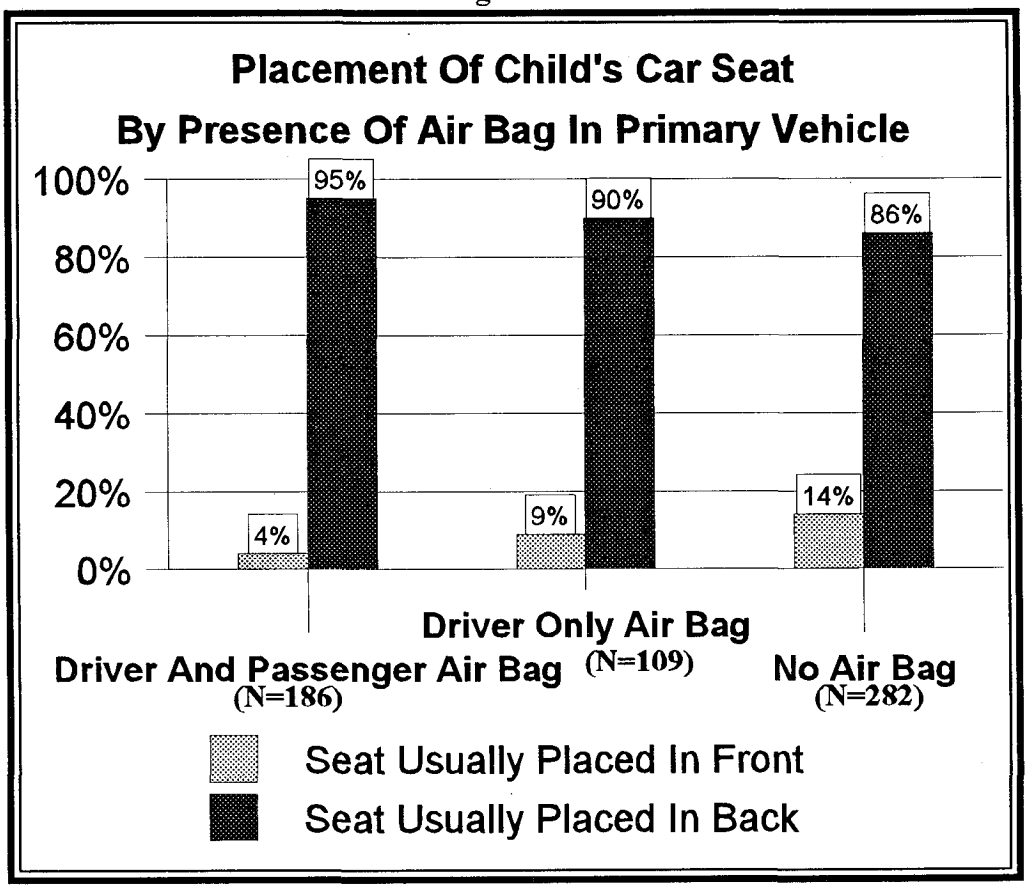
Qx: *When you are driving and (he/she) rides in the child car seat, is it usually in the front seat or the back seat?*

Base: *Child at least on occasion rides in a child car seat.*

Unweighted N's listed above.

Proportionally fewer parents/caregivers permitted the child car seat to be placed in the front if there was an air bag installed for the front passenger side. If there was no air bag in the respondent's primary vehicle, then 14% of the parents/caregivers said that the child seat was usually in the front. If the primary vehicle had an air bag for the front passenger side, then 4% said the car seat was usually in the front. If the primary vehicle had an air bag for the driver side but not the front passenger, then the percentage fell between the two figures at 9%.

Figure 34

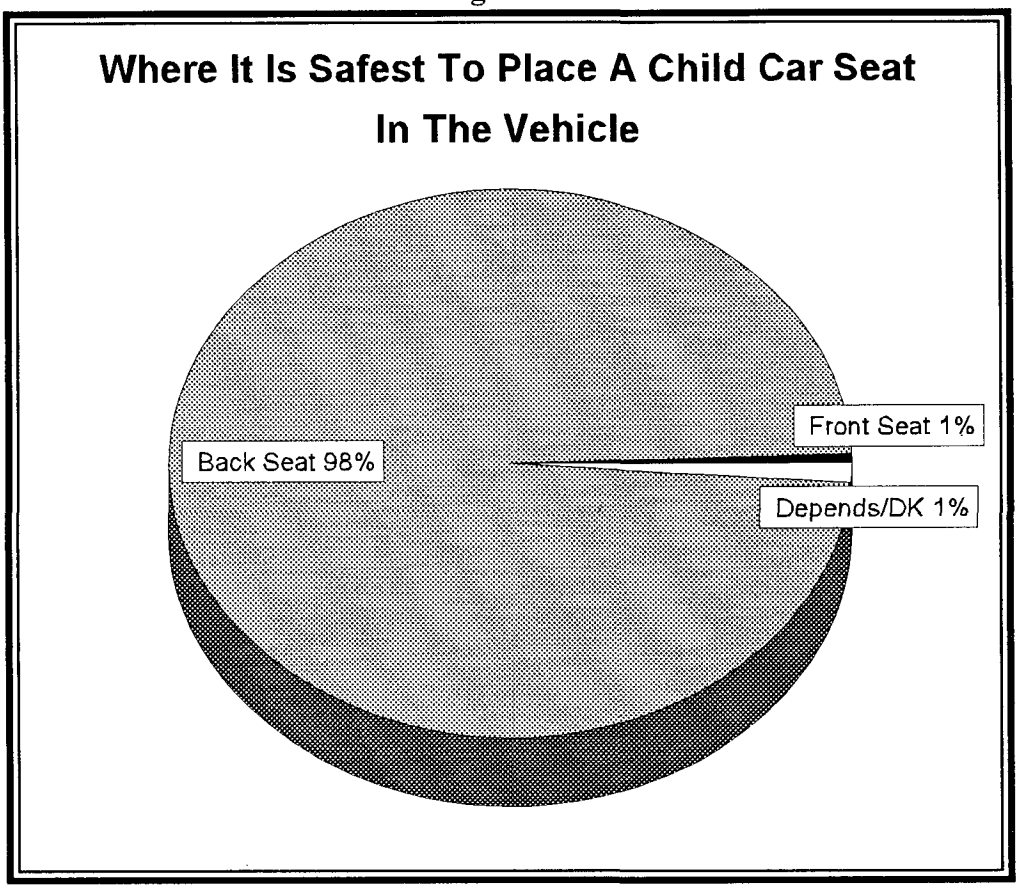


Qx: *Does the (car/truck/van) you normally drive have an air bag?*
Qx: *Is the air bag for the driver only, or is there also a passenger side air bag?*
Qx: *When you are driving and (he/she) rides in the child car seat, is it usually in the front seat or the back seat?*
Base: *Child at least on occasion rides in a child car seat.*
Unweighted N's listed above.

Where Parents/Caregivers Believe It Is Safest To Place A Child Car Seat

Almost all parents/caregivers (98%) considered the back seat the safest location to place a child car seat in a vehicle. One percent incorrectly believed that the front seat was safest, while somewhat fewer answered that it depended on the type of child car seat or else that they did not know (less than 0.5% each). The 1% who thought the front seat was safest contrasts with the 9% who said that the child car seat was usually in the front seat when they drove (see page 38).

Figure 35

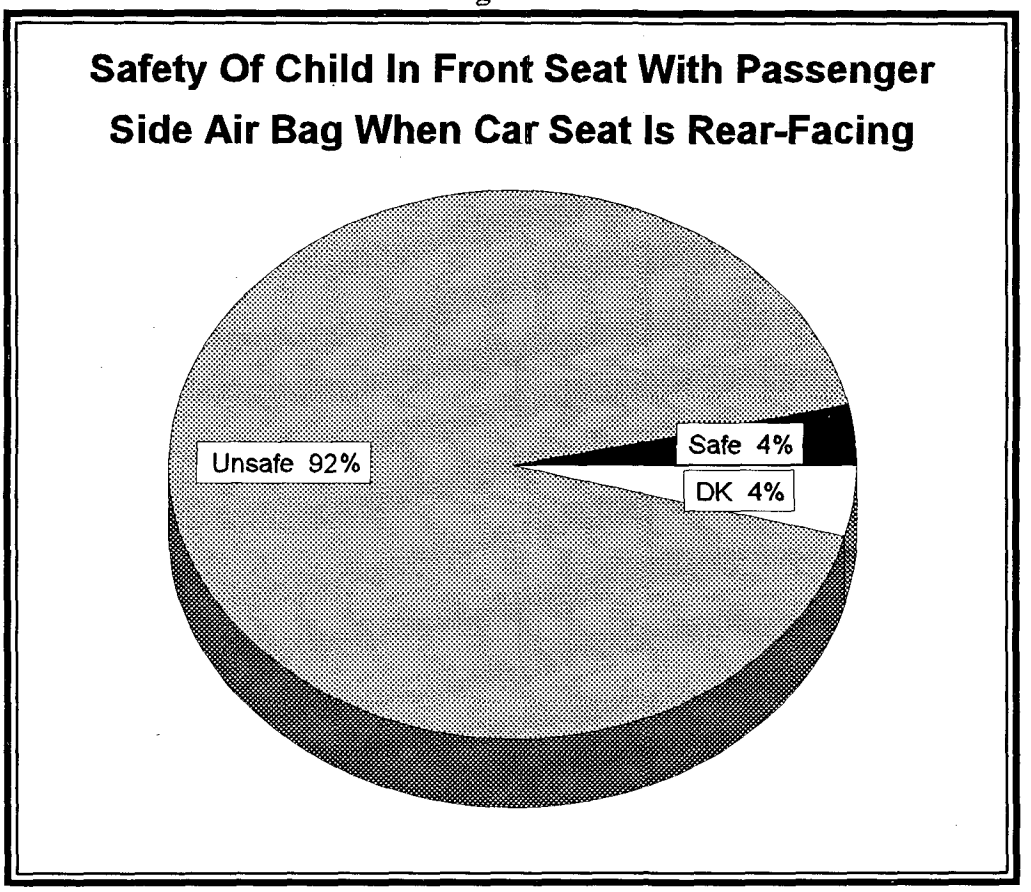


Qx: *Where would you say it is safest to place a child car seat in the vehicle . . . in the front seat or in the back seat?*
Base: *Child at least on occasion rides in a child car seat.*
Unweighted N=585

Child Car Seats That Face Forward In Vehicles With Air Bags

Parents/caregivers were asked if they thought it was safe to place a rear-facing car seat in the front seat of a vehicle having a front passenger air bag. The correct answer is no, because it could place the child in the air bag's path, with the force of impact being too great for the child. Most parents/caregivers (92%) said it was unsafe while 4% considered it safe. Another 4% responded either that they did not know how air bags worked (0.6%) or that they did not know the answer to the question (3.8%).

Figure 36



Qx: *Some child car seats are designed so that the child faces backward to the rear of the motor vehicle. Suppose a child is riding in a child car seat facing backward. If the vehicle has a passenger side air bag, is it safe or unsafe to have the child car seat in the front seat?*

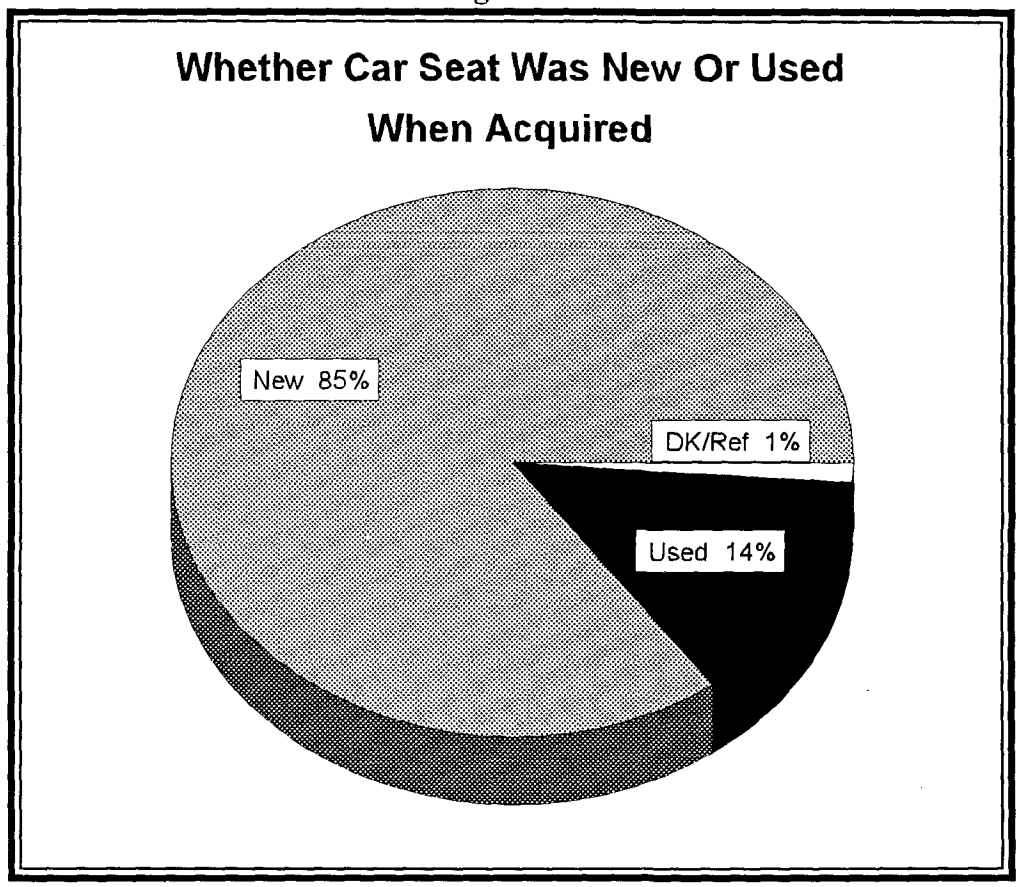
Base: *Child at least on occasion rides in a child car seat.*

Unweighted N=585

Acquisition of Car Seat

Most car seats (85%) were obtained new. About one-in-seven (14%) were acquired used. The remainder of the sample could not say whether the seat was acquired new or used, or else refused to respond (1%).

Figure 37



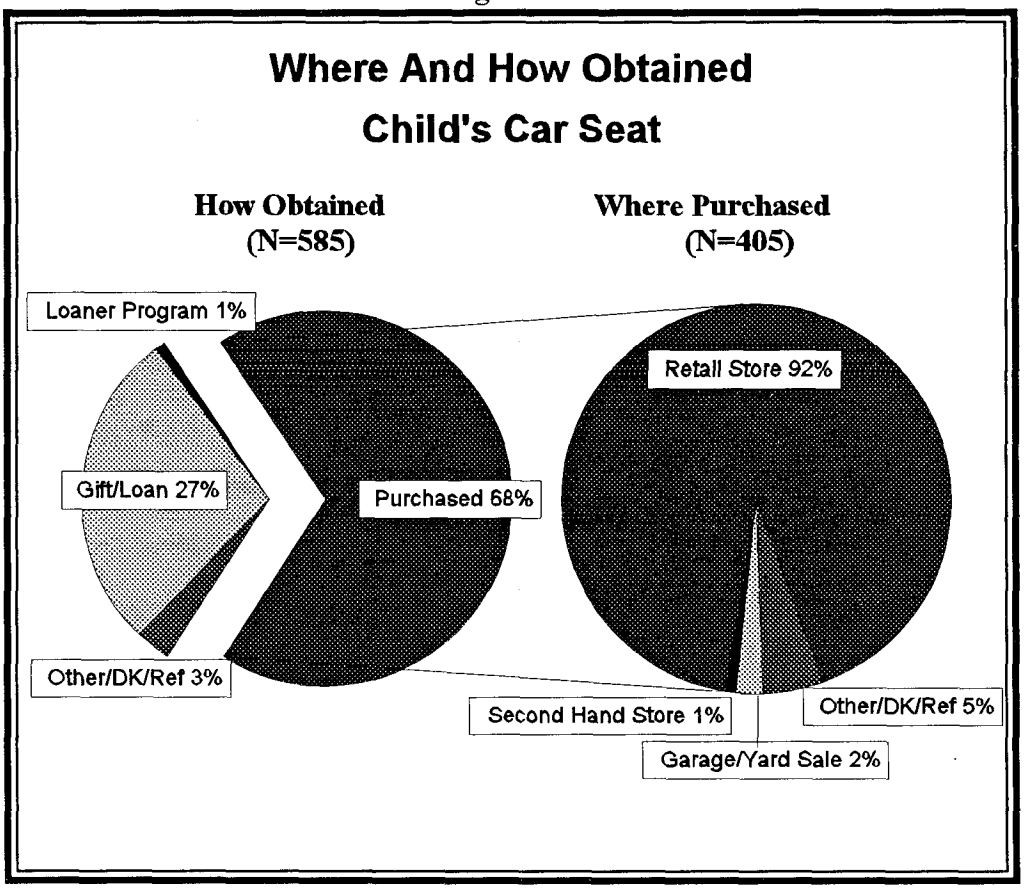
Qx: *Now thinking again about the child car seat the (AGE) usually rides in, did you get the child car seat new or used?*

Base: *Child at least on occasion rides in a child car seat.*

Unweighted N=585

More than two-thirds of car seats (68%) were purchased, while 27% were acquired as a gift or loaner from a relative or friend. Another 1% obtained the car seat from a loaner program. If purchased, the car seat most often was bought from a retail store (92%).

Figure 38

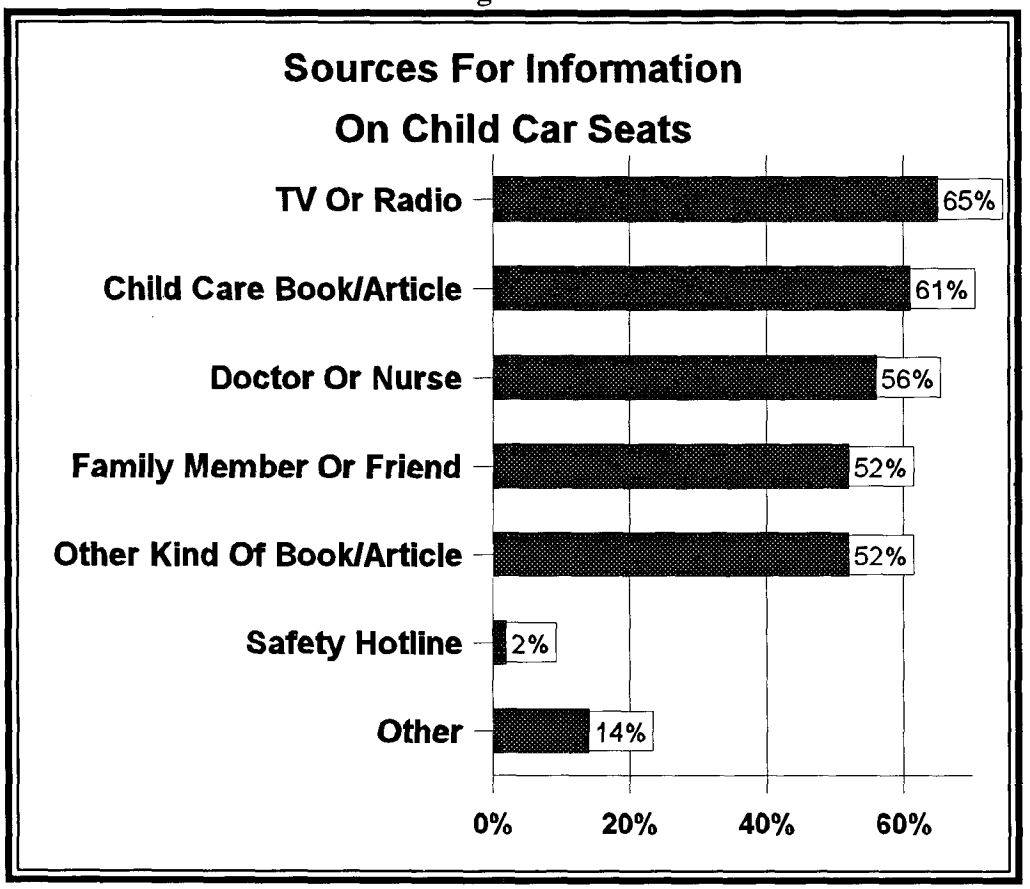


Qx: Did you purchase the child car seat, did you get it as a gift or loaner from a relative or friend, or did you get it from a loaner program?
Qx: Where did you purchase it from?
Base: Child at least on occasion rides in a child car seat.
Unweighted N's listed above.

Sources For Information On Car Seats

The interviewers asked the parents/caregivers of children using car seats where they had gotten their information on car seats. Six potential information sources were read, one at a time, to respondents. The respondents were asked whether they had ever read or heard of any information, or received any advice, about the need to use child car seats from that source. The respondents were then given the opportunity to volunteer additional sources where they had received car seat information. Most often, the parents/caregivers said that they had obtained information on child car seats from tv or radio (65%), or from books or articles on child care (61%).

Figure 40

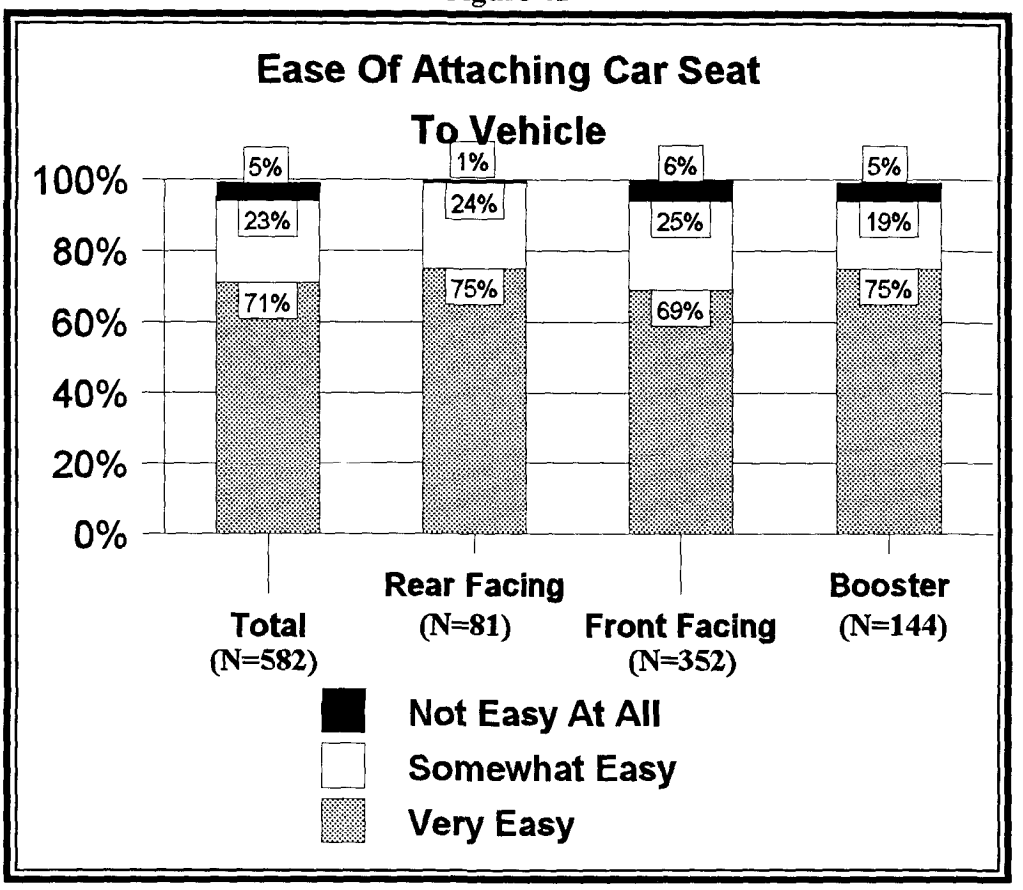


Qx: *Did you ever read or hear of any information or receive any advice about the need to use child car seats from any of the following sources? Did you get any information from . .?*
Base: *Child at least on occasion rides in a child car seat.*
Unweighted N=585

Ease Of Use

Parents and caregivers reported that they had relatively little difficulty installing their children's car seats regardless of the type of seat. Overall, seven out of ten respondents (71%) said it was very easy to attach the car seat to the vehicle they usually drove. An additional 23% considered it somewhat easy.

Figure 41



Qx: *How easy is it for you to attach the child car seat to the vehicle you usually drive . . . very easy, somewhat easy, or not easy at all?*

Base: *Child at least on occasion rides in a child car seat, and the car seat did not come attached to the vehicle.*

Unweighted N's listed above.

Those respondents who said that it was only somewhat easy to attach the seat to the vehicle, or not easy at all, were asked what was difficult about attaching the seat. Most often (38%) they answered that the problem was fitting the seat belt through the car seat hole or loop.

Table 3
What Is Difficult About Attaching Car Seat To Vehicle

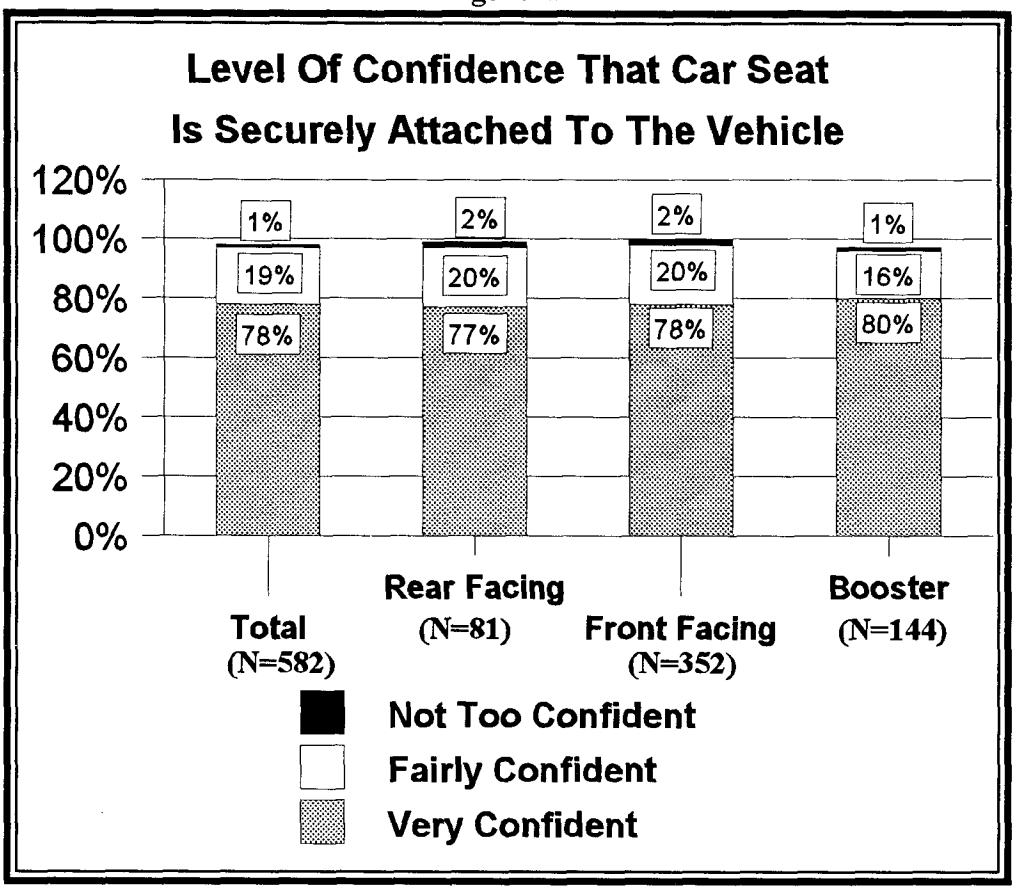
Qx: What is difficult about attaching the child car seat to the vehicle?
Base: Said it was somewhat easy, or not easy at all, to attach the car seat to the vehicle.
Unweighted N=172

Obstacle	Percent
Fitting the seat belt through the car seat hole/loop	38%
Hooking it/attaching to the seat belt (or buckle)	25%
Adjusting seat belt/making sure it's tight enough	22%
Any other adjustment mention	1%
Any other attachment mention	3%
Any other miscellaneous mention	9%
Don't know/Refused/No Answer	10%

*Total exceeds 100% due to multiple responses.

Besides asking how easy it was to attach the car seat to the vehicle, the interviewers also asked the respondents how confident they were that the seat was securely attached. Most (78%) said they were very confident, with the type of seat making little difference in the response.

Figure 42



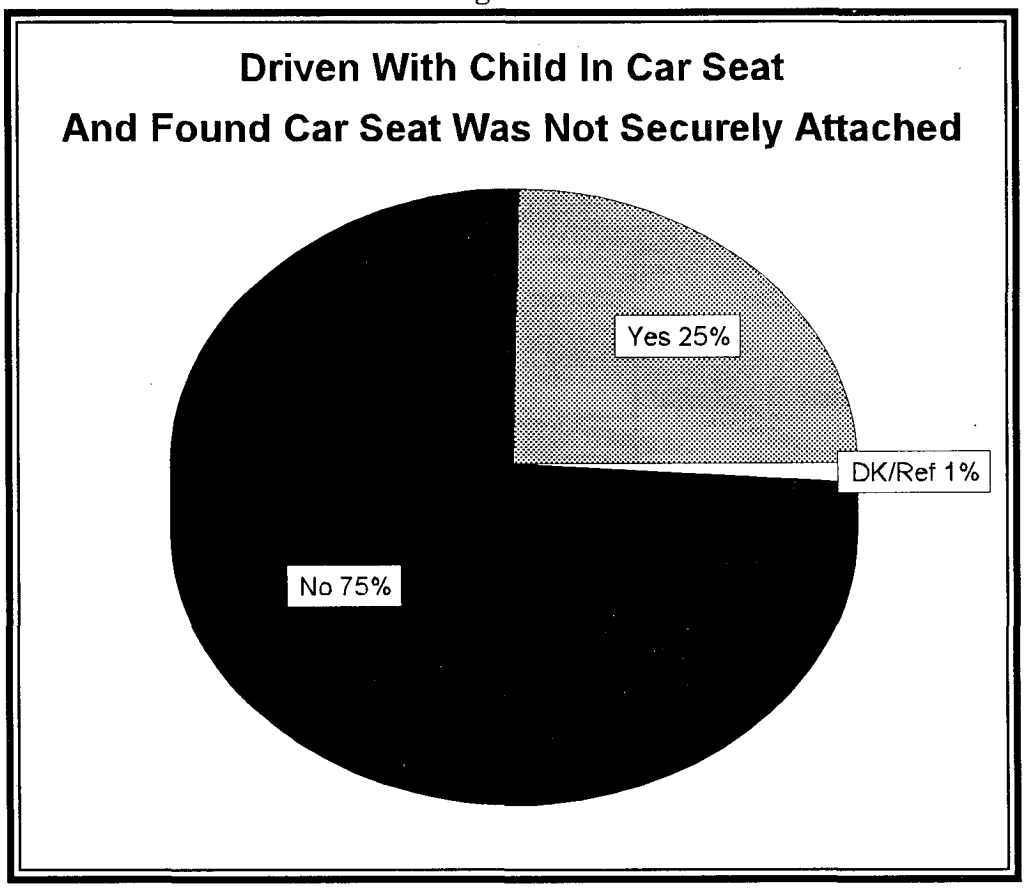
Qx: *How confident are you that the car seat is securely attached to the vehicle that you usually drive? Are you usually very confident, fairly confident, or not too confident?*

Base: *Child at least on occasion rides in a child car seat, and the car seat did not come attached to the vehicle.*

Unweighted N's listed above.

The results presented on the previous pages suggest that parents and other caregivers generally believe that they are installing child car seats correctly. However, observations in the field have shown some form of car seat misuse for the vast majority of children in car seats, in the form of installation and/or buckling errors. To assess the misuse issue more fully, the interviewers asked the respondents if they had ever driven with the child in the car seat and later found that the car seat was not securely attached. One-quarter (25%) said "yes" while 75% said "no."

Figure 43



Qx: *Have you ever driven with the child in the car seat and later found that the car seat was not securely attached?*

Base: *Child at least on occasion rides in a child car seat.*

Unweighted N=585

Those respondents who acknowledged driving with the child and later discovering that the car seat was not securely attached were asked why this happened. The responses tended to revolve around rushed behavior or carelessness, unexplained attachment difficulties, children's behavior, or movement of the seat within the vehicle or to another vehicle.

Table 4
Reasons Why Car Seat Was Not Securely Attached

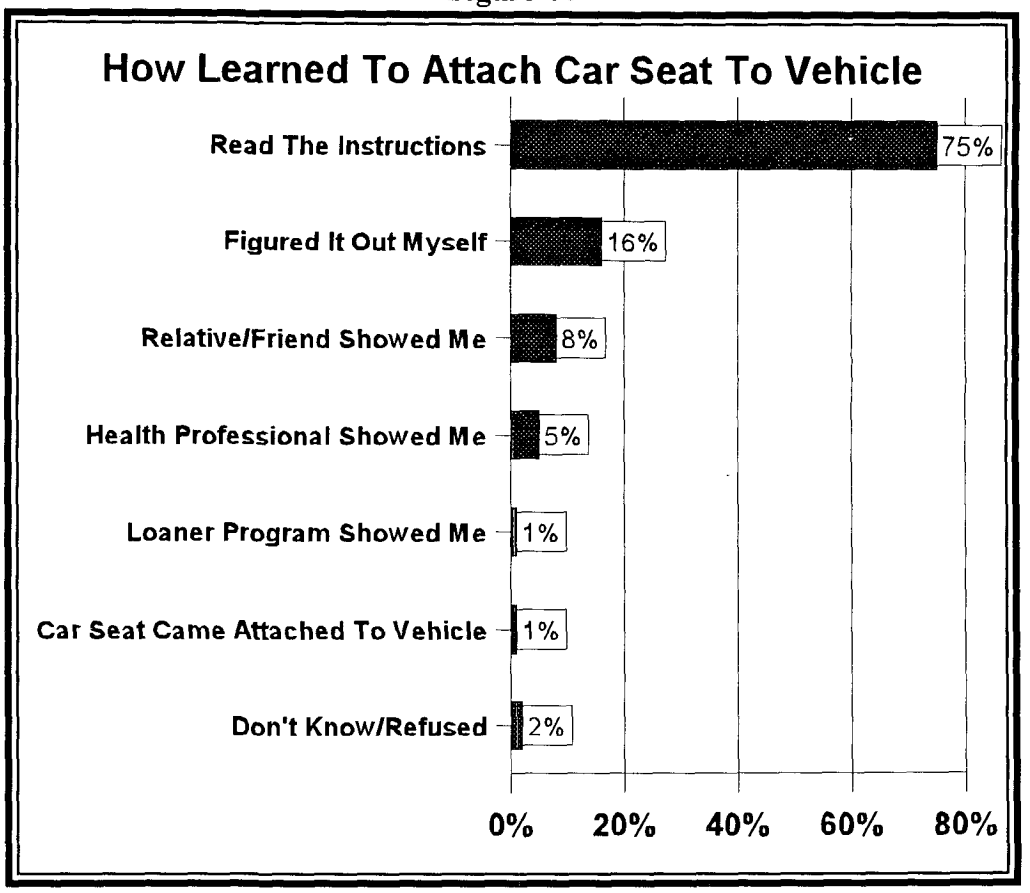
Qx: Why did this happen?
Base: Drove with child and later found that car seat was not securely attached.
Unweighted N=159

Reason	Percentage
Child Seat Attachment	**35%**
Came undone/got unfastened/came loose	16%
Difficult to attach tightly enough/car's seat belt can't be tightened adequately	10%
Didn't understand how to attach/install it properly	9%
All other child seat attachment mentions	1%
Child's Movement/Behavior	**22%**
Older child loosened baby's car seat accidentally	8%
Child unbuckled seat belt	8%
Child knows how to unbuckle/undo seat belt him/herself	6%
Miscellaneous	**42%**
Forgot/wasn't paying attention/carelessness	19%
In a hurry/pressed for time/got busy	8%
Moved car seat between cars/within same car	8%
I made a mistake/I screwed up	5%
Car seat was defective	3%
Vehicle movement unfastened seat belt	2%
All other miscellaneous mentions	4%
Don't know/Refused/No answer	**9%**

*Total exceeds 100% due to multiple responses.

Most often, the respondents said that they learned how to attach the child car seat to the vehicle by reading the instructions (75%). About one-in-six (16%) figured it out themselves and 8% had a friend or relative show them.

Figure 44

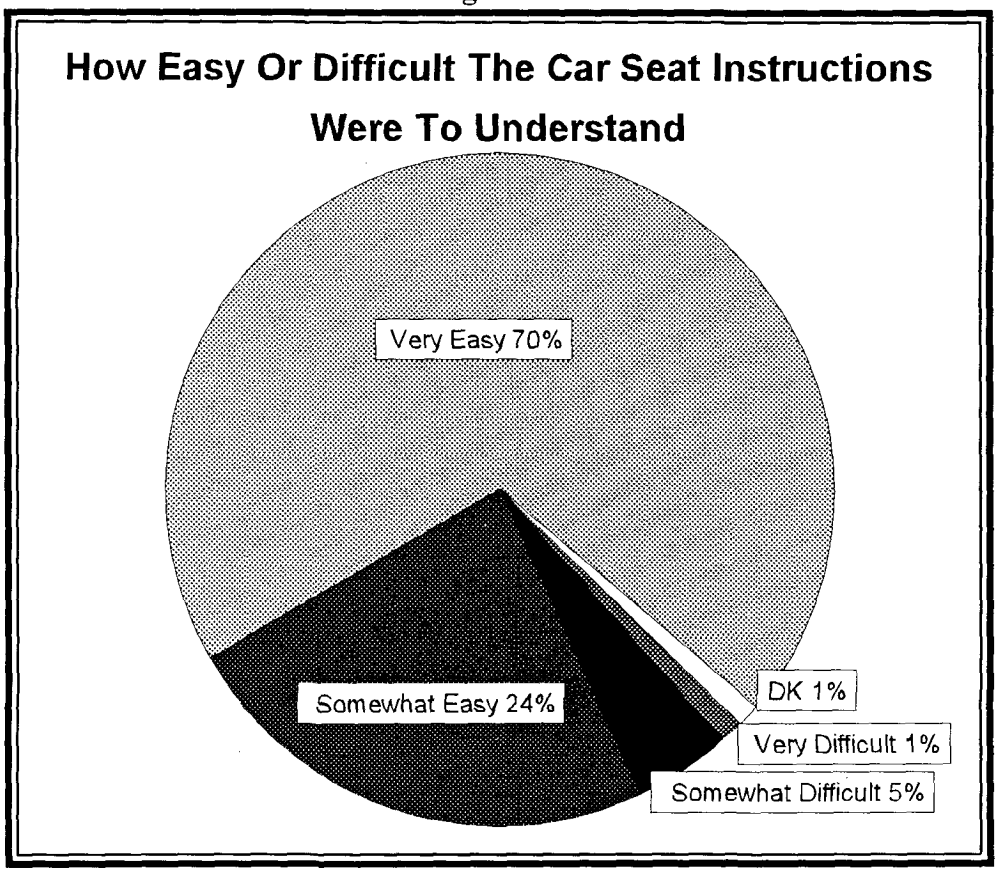


Qx: How did you learn to attach the child car seat to the vehicle?
Base: Child at least on occasion rides in a child car seat.
Unweighted N=585
**Total exceeds 100% due to multiple responses.*

Since the instructions were the predominant source for learning how to attach the car seat to the vehicle, it is useful to assess whether the public finds them understandable. Those respondents who did not state that they had learned to install the seat from reading the instructions, and also did not have a car seat that came attached to the vehicle, were asked if they had read the instructions. More than half (53%) said they had. Thus a segment of respondents read the car seat instructions but did not consider them to be their source for learning to attach the seat.

In total, 88% of parents/caregivers had read the car seat instructions. Of these, 70% said the instructions were very easy to understand; 24% said they were somewhat easy. Among those who said they did not read the instructions, 51% conceded that the instructions were available.

Figure 45



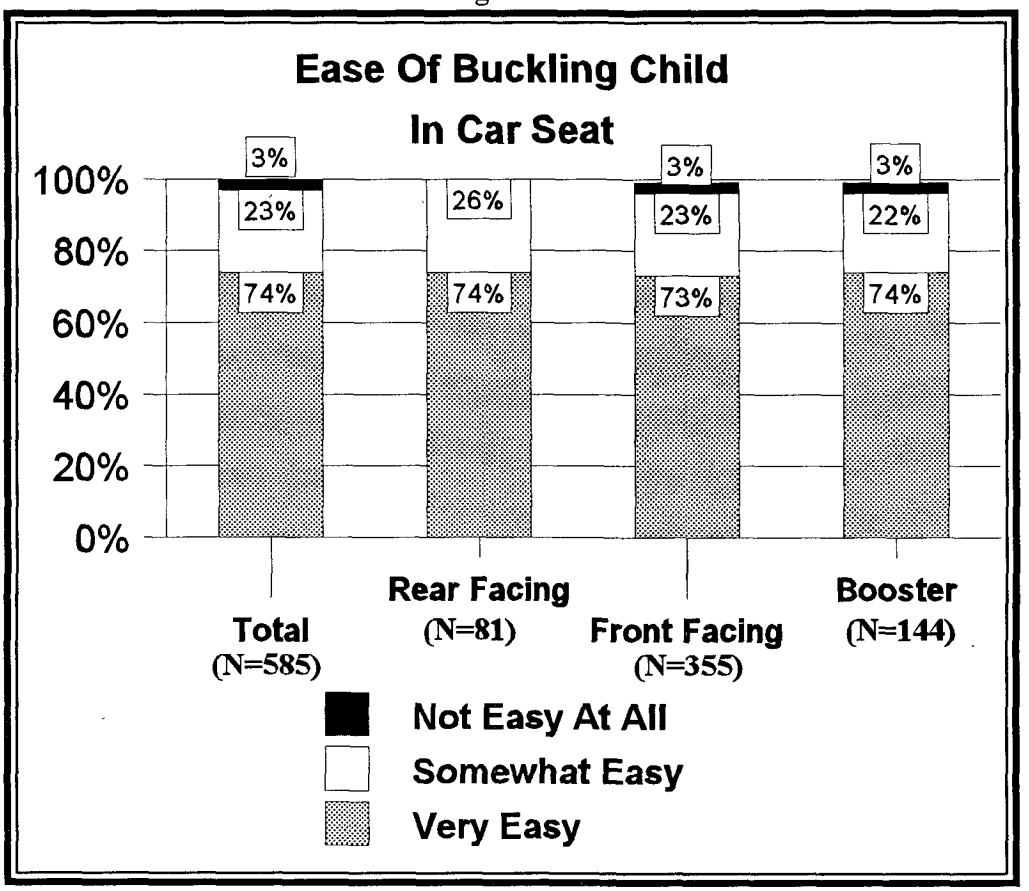
Qx: *How easy or difficult were the instructions to understand? Would you say that the instructions were very easy, somewhat easy, somewhat difficult, or very difficult to understand?*

Base: *Read the child car seat instructions.*

Unweighted N=521

As with installing the car seat in the vehicle, most caregivers considered it easy to properly buckle the child into the car seat. Almost all parents/caregivers answered either that it was very easy (74%) or somewhat easy (23%). The percentage who considered it very easy was about the same across type of seat.

Figure 46



Qx: How easy is it for you to properly buckle your child into the child car seat?
Base: Child at least on occasion rides in a child car seat.
Unweighted N's listed above.

Those respondents who said that it was only somewhat easy to buckle the child in, or not easy at all, were asked what was difficult about it. Most often they said it was difficult to buckle the belt (23%), adjust the straps (23%), or deal with an overly active child (19%).

Table 5
What Is Difficult About Buckling Child Into Car Seat

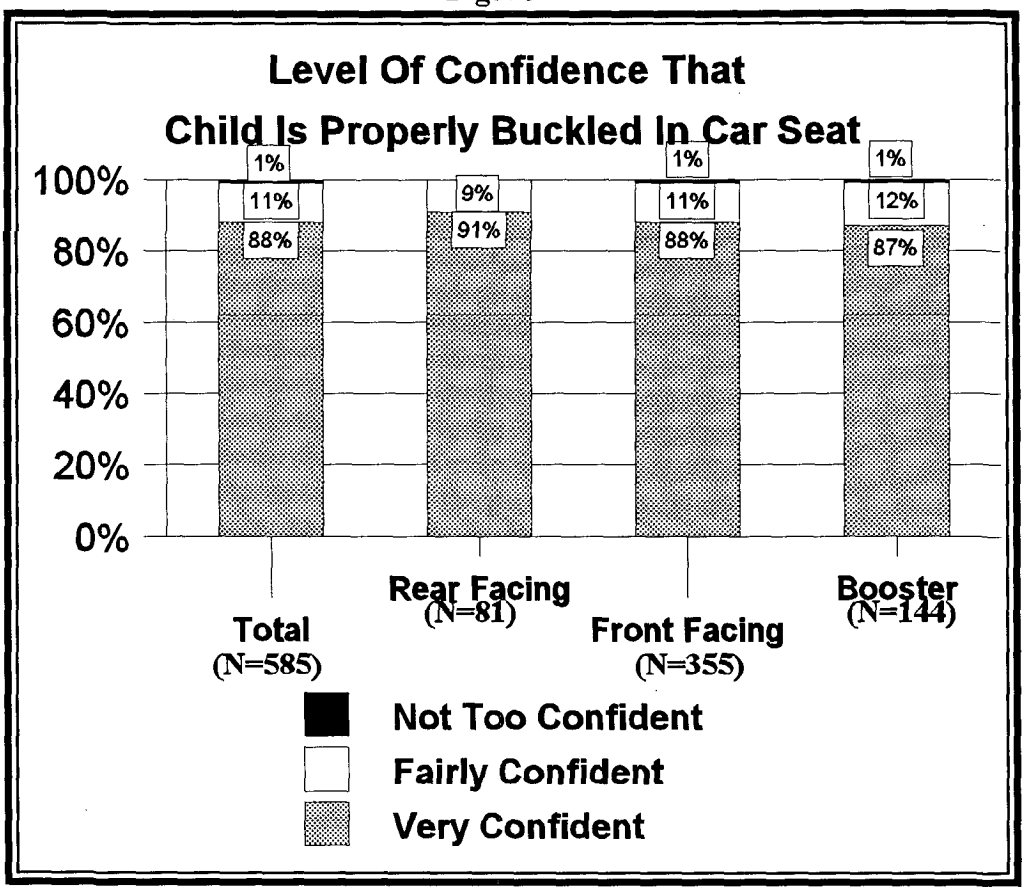
Qx: What is difficult about buckling your child into the child car seat?
Base: Said it was somewhat easy, or not easy at all, to properly buckle child into the child car seat.
Unweighted N=148

Obstacle	Percent
Child Seat Attachment	**56%**
Adjusting shoulder straps to fit properly/tightness of seat belt.	23%
Hard to snap buckle/seat belt.	23%
Buckle hits the child in the head/can't get it over the head.	5%
Any other adjustment mention	4%
Any other child seat attachment mention	5%
Child Movement/Behavior	**26%**
Child doesn't sit still/down.	19%
Child doesn't like car seat.	5%
Any other child movement/behavior mentions	4%
Any other miscellaneous mentions.	**13%**
Don't know/refused/no answer.	**10%**

*Total exceeds 100% due to multiple responses.

Nearly all parents/caregivers felt either very confident (88%) or fairly confident (11%) that their child was properly buckled into the car seat. Once again there was little difference across type of seat.

Figure 47



Qx: How confident are you that the child is properly buckled into the seat. Are you usually very confident, fairly confident, or not too confident?

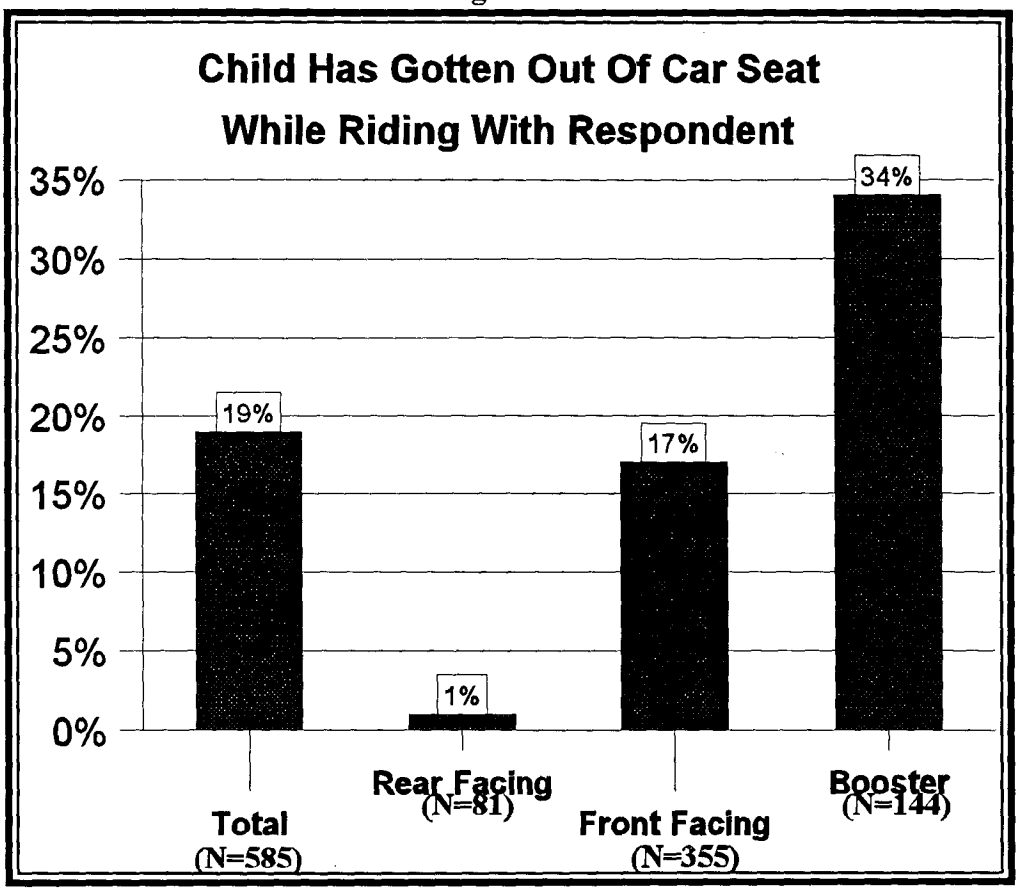
Base: Child at least on occasion rides in a child car seat.

Unweighted N's listed above.

Children Getting Out Of Car Seats

Almost one-in-five parents/caregivers (19%) reported that the child had gotten out of the car seat while riding with them. As expected, this occurred most often among older children who were riding in booster seats (34%).

Figure 48



Qx: Has the (AGE) ever gotten himself/herself out of that child car seat when riding with you?

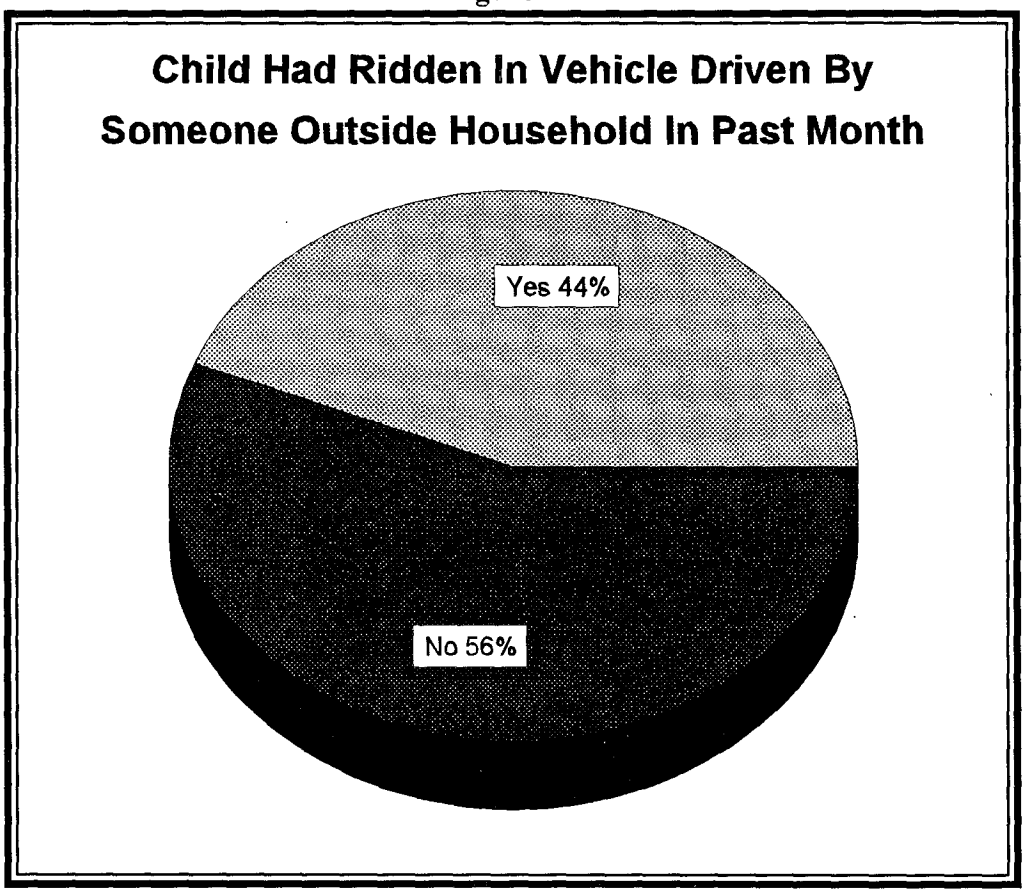
Base: Child at least on occasion rides in a child car seat.

Unweighted N's listed above.

Frequency That Persons Outside Household Drive Child Who Uses Car Seat

Parents/caregivers of children who at least on occasion used car seats were asked if the child had ridden in a vehicle in the past 30 days where someone outside of the household was driving. Figure 49 restricts the analysis only to those parents/caregivers who lived with the child. More than two-out-of-five (44%) answered that this had occurred.

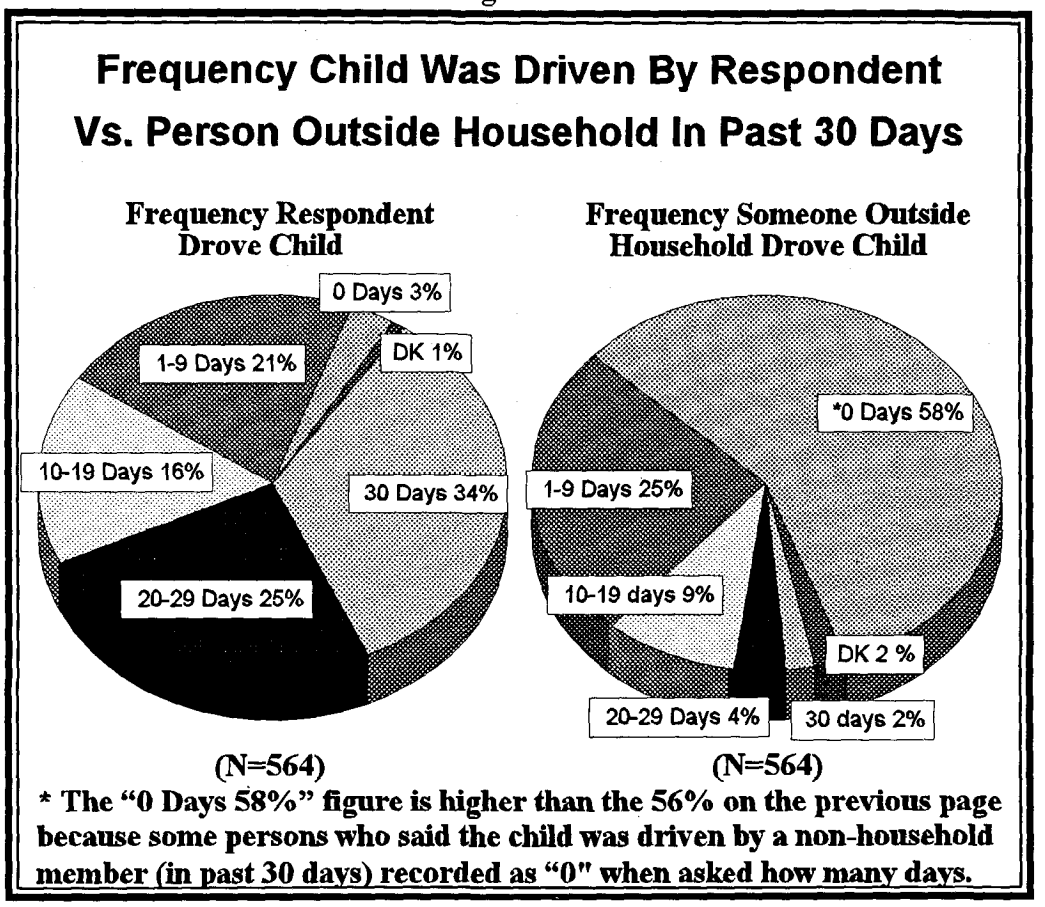
Figure 49



Qx: During the past thirty days, has your (AGE) ridden in a vehicle where someone outside of your household was driving (includes school buses, taxis, and other private vehicles)?
Base: Child at least on occasion uses a car seat, and parent/caregiver lives with the child. Unweighted N=564.

Figure 50 compares the frequency that the selected children were driven by persons outside the household to the frequency that the same children were driven by the responding parents/ caregivers (this analysis again was restricted to parents/caregivers who lived in the same household as the child). As expected, the children were transported on a far less regular basis by the non-household members, which is consistent with the findings in Chapter 2 (see page 23). For example, 59% of parents/caregivers said they drove the child 20 or more days in the past 30, whereas only 7% said the child was driven by a non-household member that number of days.

Figure 50



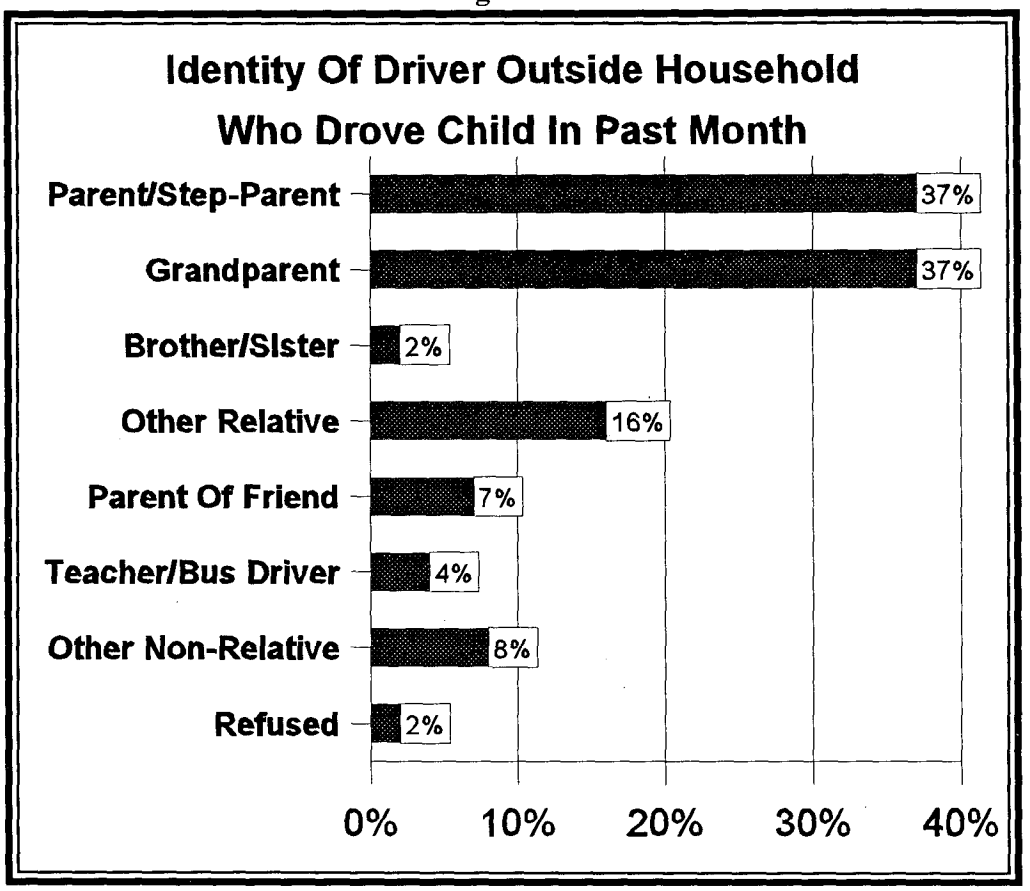
Qx: How many days out of the past thirty days did your (AGE) ride in a vehicle that you drove?

Qx: How many days out of the past thirty days did this child ride in a vehicle driven by someone outside of your household?

Base: Child at least on occasion uses a car seat, and parent/caregiver lives with the child. Unweighted N's listed above.

When asked the identity of the driver outside the household who transported the child in the past 30 days, the parents/caregivers most often answered that it was a grandparent (37%) or a parent/step-parent (37%). Fewer than half as many reported that it was a brother/sister (2%) or some "other relative"(16%). The relatively high percentage for parents/step-parents when looking from the vantage point of the child contrasts with the low percentage obtained from the vantage point of the outside driver (see page 24). At least part of the difference may reflect aspects of custody arrangements and related perceptions. The differing time frames specified in the two questions (past month versus past year) may also be playing a role.

Figure 51



Qx: Who were those drivers? (What is their relationship to the child?)
Base: Child at least on occasion uses a car seat, parent/caregiver lives with the child, and someone outside the household drove the child in the past 30 days.
Unweighted N=262

1998 SURVEY RESULTS

CHAPTER 4

REASONS FOR NON-USE OF CAR SEATS

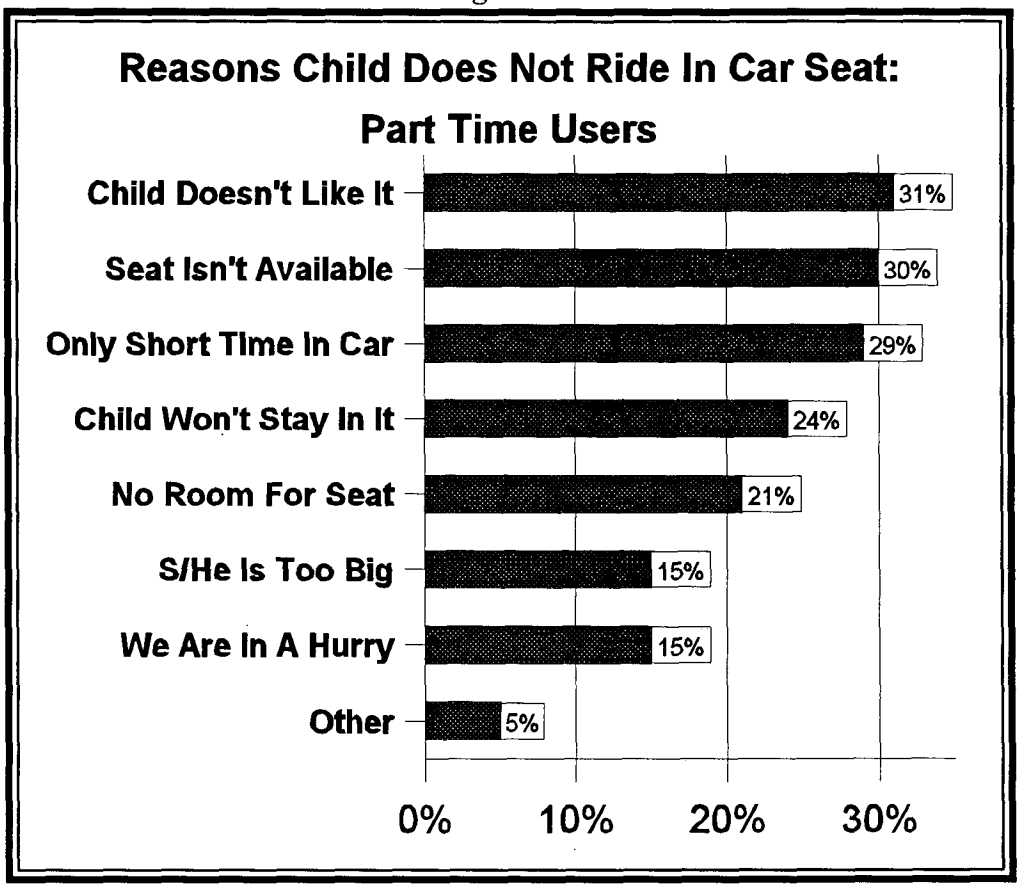
The survey asked a series of questions to identify reasons why children under age 6 were not riding in car seats. Respondents were selected from the parent/caregiver subgroup defined on page 28. If respondents said that they used a car seat with the designated child, but less than all the time, then the survey termed them "part time users." This includes cases where the respondent said that the car seat was used all the time, but admitted occasions of non-use on a follow-up question. The first part of this Chapter focuses exclusively on findings concerning part time car seat users. Readers are cautioned that these results are based on a small number of cases. This is because people will generally claim that the car seat is used "all the time" if the child still uses this type of restraint at all.

The second part of this Chapter examines reasons for non-use of car seats by children under the age of 6 who reportedly do not use car seats at all. Besides reasons for non-use among these "non-users," the Chapter explores their seat belt use, their usual seating location, and whether the child had used a car seat at an earlier age.

Part Time Car Seat Users

Questionnaire testing plus input from experts had identified a number of likely reasons for non-use of car seats. The interviewers read each of these reasons to respondents, asking whether or not it was a factor in the child not using a car seat. The interviewers then gave the respondents the opportunity to volunteer "other" reasons. The reasons most frequently mentioned for non-use of car seats among part time users were that the child did not like the seat (31%), the seat was not available (30%), and the child was only going to be in the car a short time (29%).

Figure 52



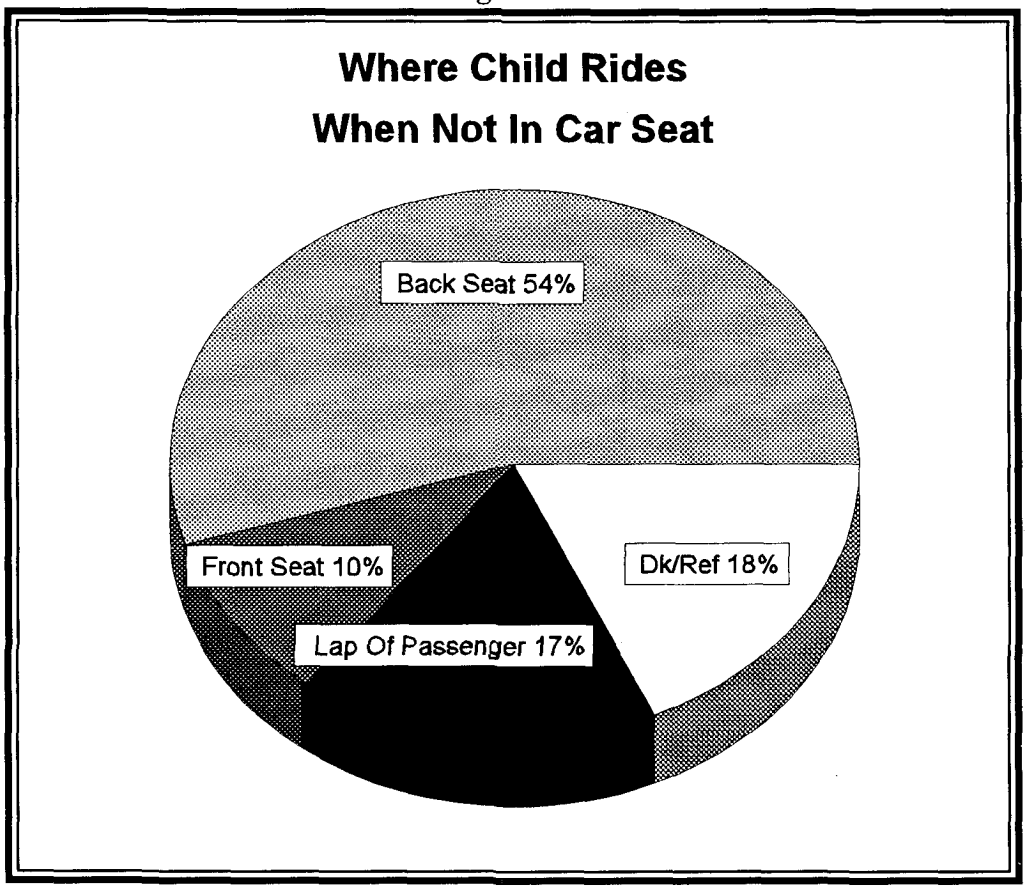
Qx: Please answer yes or no to each of the following statements. When my (AGE) doesn't ride in a child car seat, it is sometimes because. . . . .

Base: Child uses a car seat, but not all of the time.

Unweighted N=115

The respondents were asked where the child usually sits when not in the car seat: on someone's lap, by him/herself in the front seat, or in the back seat. Slightly more than half (54%) answered that the child usually sat in the back. However, about one-in-six (17%) said the child sat on someone's lap while approximately the same percentage (18%) either replied that they did not know or else refused to respond.

Figure 53

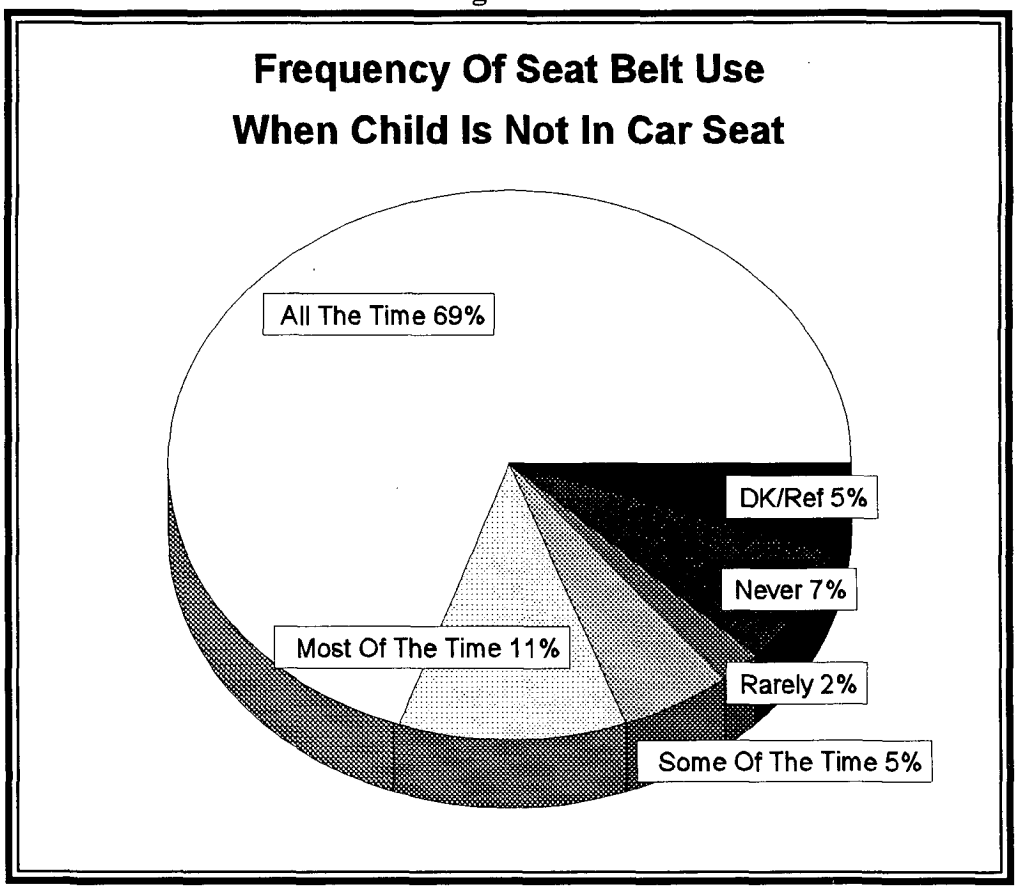


Qx: *When the (AGE) doesn't ride in the child car seat when riding with you, does he/she usually sit on someone's lap, sit by him/herself in the front seat, or sit in the back seat?*
Base: *Child uses a car seat, but not all of the time.*
Unweighted N=115

Most children who were part time car seat users wore a seat belt when they were not in their car seat. Sixty-nine percent reportedly used the seat belt all of the time when not in the car seat, and 11% used it most of the time.

There were a small number of cases where the respondent said that the child usually sat in someone's lap when not riding in a car seat, but also stated that the child used a seat belt when not in a car seat. The interviewers asked these persons if the child was buckled in a seat belt when riding in someone's lap. In six cases the response was affirmative.

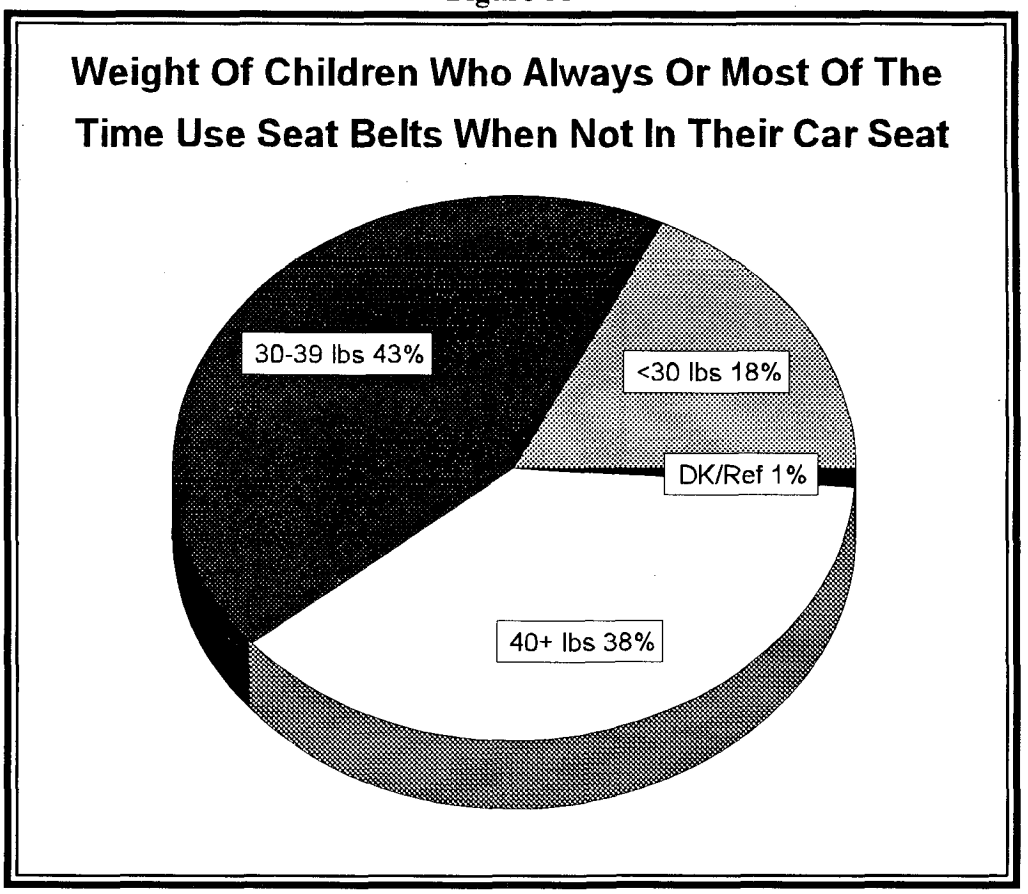
Figure 54



Qx: *When the (AGE) doesn't ride in the child car seat when riding with you, how often is he/she buckled in a seat belt?*
Base: *Child uses a car seat, but not all of the time.*
Unweighted N=115

Children who always or most of the time wore a seat belt when not using a car seat were often too small for the seat belt to fit properly. Most (61%) weighed less than 40 pounds and almost one-in-five (18%) weighed less than 30 pounds.

Figure 55



Qx: *How much does (he/she) weigh?*

Qx: *When the (AGE) doesn't ride in the child car seat when riding with you, how often is he/she buckled in a seat belt?*

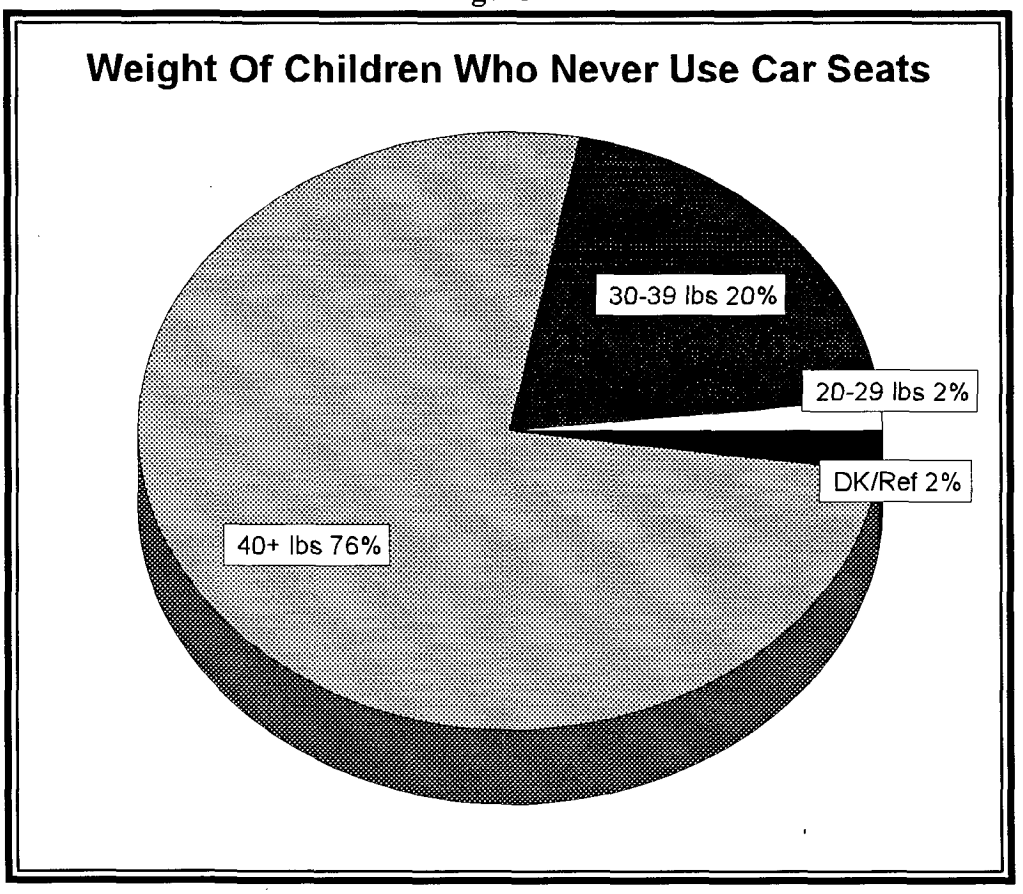
Base: *Child is a part time car seat user who uses a seat belt all or most of the time when not riding in the car seat.*

Unweighted N=89

Never Users of Car Seats

The children who never used car seats were mostly larger children. About three-fourths (76%) were 40 pounds or heavier. Most of the remaining children (20%) were 30 to 39 pounds.

Figure 56

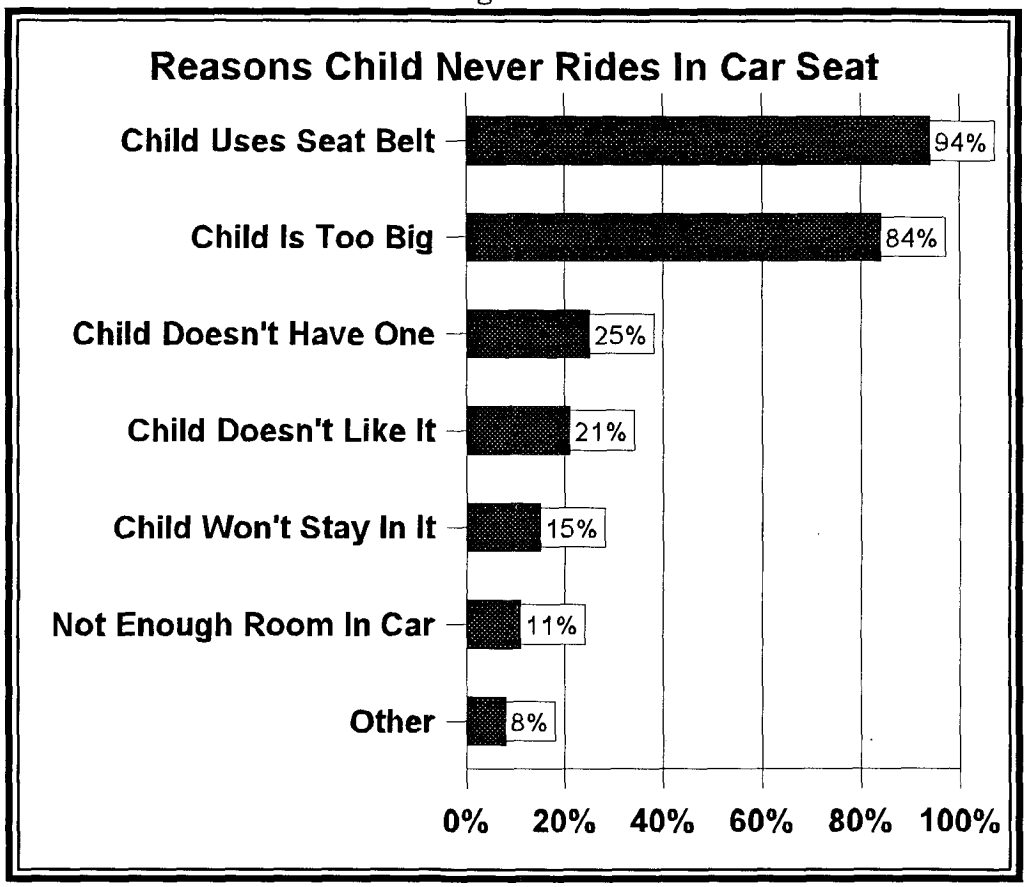


Qx: How much does (he/she) weigh?
Qx: When you are driving and (AGE) rides in the vehicle with you, how often does (he/she) ride in a child car seat? Child car seats include infant seats, toddler seats, and booster seats. Would you say (he/she) rides in a child car seat. . . . .
Base: Child under age 6 never uses a car seat.
Unweighted N=162

When asked the reason why the child never uses a car seat, the respondents usually answered that it was because the child was too big (84%) and was using a seat belt (94%). Other reasons given for not using a car seat included the child did not have one (25%), the child did not like it (21%), and the child won't stay in it (15%).

If the respondent said that the child did not have a car seat, the interviewer asked if there was a particular reason why. Most (60%) answered "no" while 5% said they did not know. Those who gave a reason most frequently indicated that it was because the child was too old and had outgrown the seat.

Figure 57



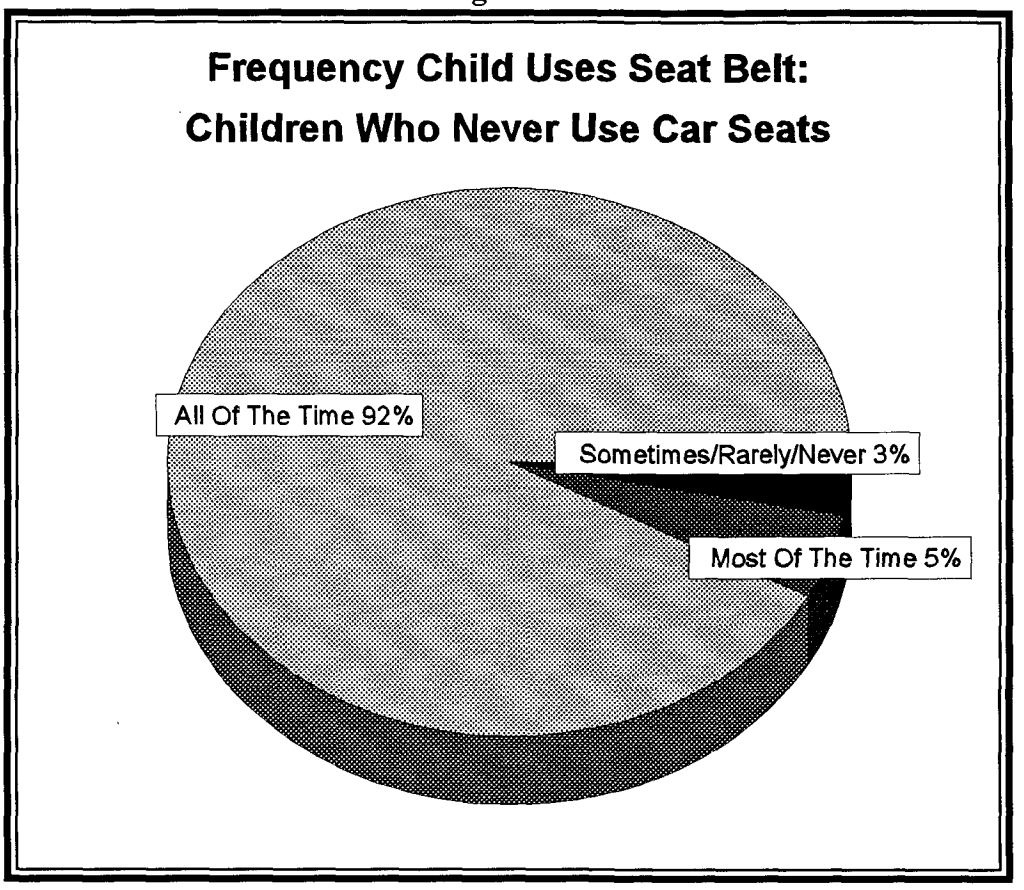
Qx: *Please answer yes or no to each of the following statements to indicate if this is a reason why the (AGE) does not ride in a child car seat. My (AGE) doesn't ride in a child car seat because. . . .*

Base: *Child under 6 never uses a car seat.*

Unweighted N=162

The vast majority of children who never use car seats reportedly wear a seat belt all (92%) or most of the time (5%) when riding in motor vehicles.

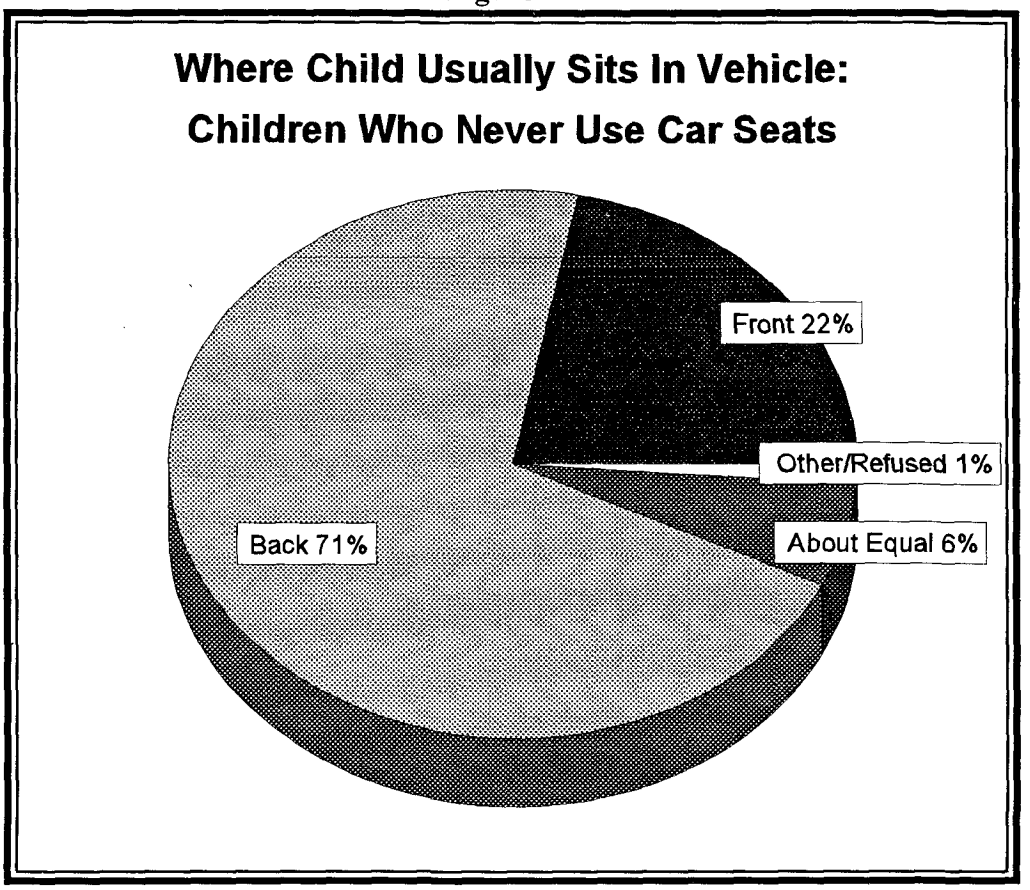
Figure 58



Qx: How often does he/she use a seat belt?
Base: Child under 6 never uses a car seat.
Unweighted N=162

The majority (71%) of children under age 6 who never use car seats tended to sit in the back seat. However, more than one-in-five (22%) usually sat in the front seat when the respondent was driving. Another 6% sat about equally between the front and the back.

Figure 59



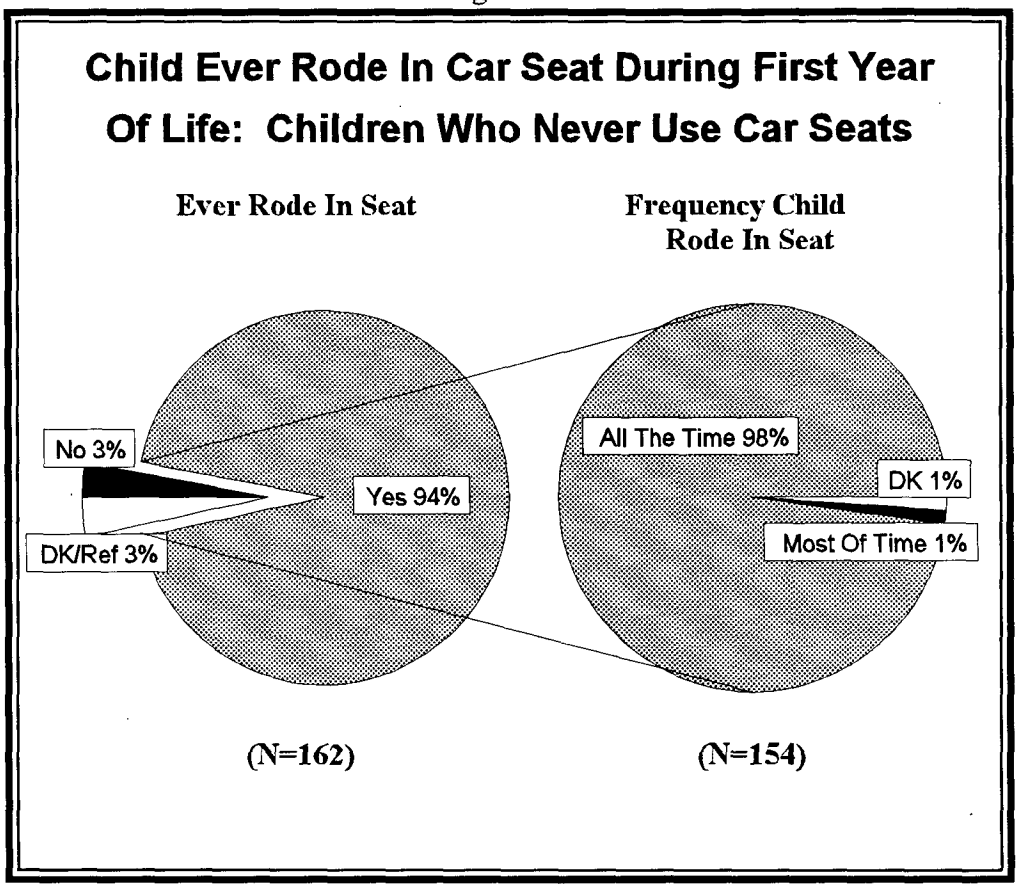
Qx: *Where does (AGE) usually sit in the vehicle when you are driving - - the front seat or the back seat?*

Base: *Child under 6 never uses a car seat.*

Unweighted N=162

Children under age 6 who currently do not ride in car seats typically had used them at an earlier age. The overwhelming majority of these children (94%) reportedly rode in car seats during the first year of life, with virtually all of them (98%) using the car seat "all the time" during infancy according to the respondents. As indicated on page 68, the primary reasons why the children presently did not ride in a car seat were that they were considered too big and were using seat belts.

Figure 60



Qx: Did the (AGE) ever ride in a child car seat during the first year of life?
Qx: How often did he/she use the child car seat during that first year? Would you say all of the time, most of the time, some of the time, or rarely?
Base: Child under 6 never uses a car seat
Unweighted N's listed above.

1998 SURVEY RESULTS

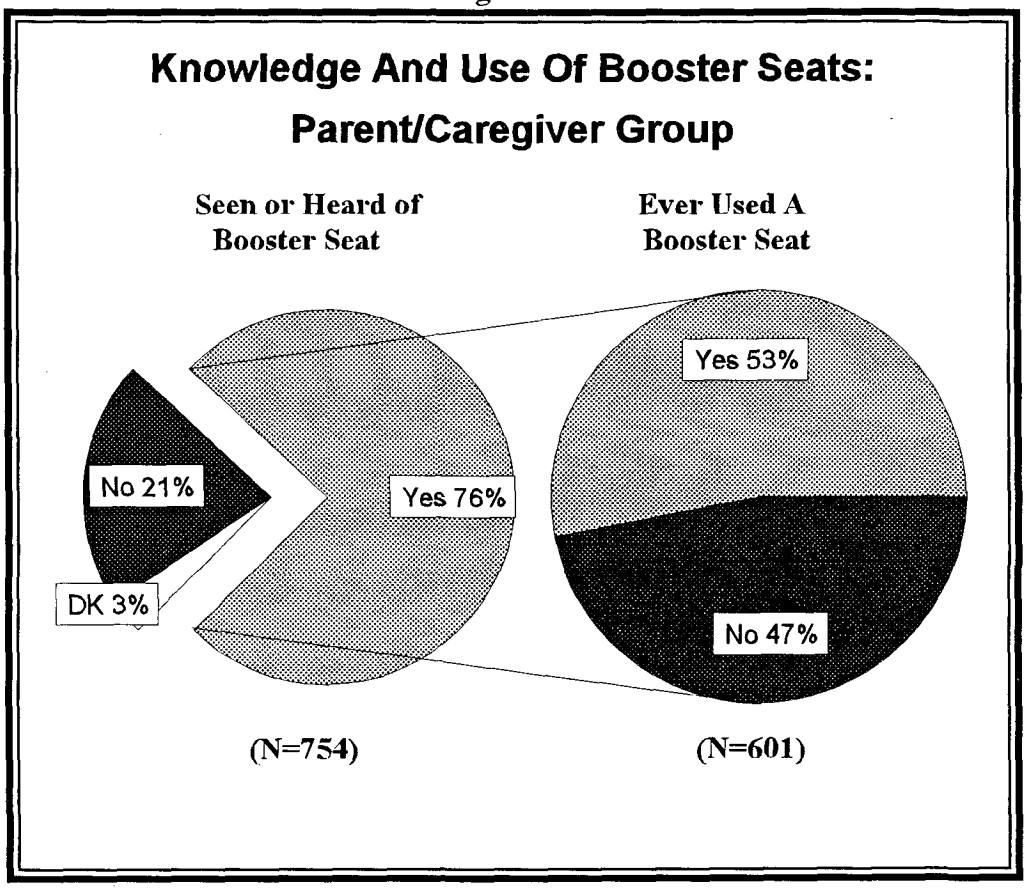
CHAPTER 5

BOOSTER SEAT ISSUES

Awareness Of Booster Seats

Children's use of restraint systems that don't properly fit them can lead to injuries. Booster seats are intended to bridge the gap between the time the child outgrows a front facing toddler seat to the time when the seat belt properly fits the child. Safety professionals recommend that children use booster seats from about 40 to 80 pounds. Yet the data presented in Chapters 3 and 4 show these children often using seat belts instead. One question is whether people are aware of booster seats. Those considered most likely to have heard of them would be the parent/caregiver group. Yet while 76% said they were aware of booster seats, 21% had not heard of them and 3% were unsure. Among those aware of booster seats, 53% said they had used them with their child(ren).

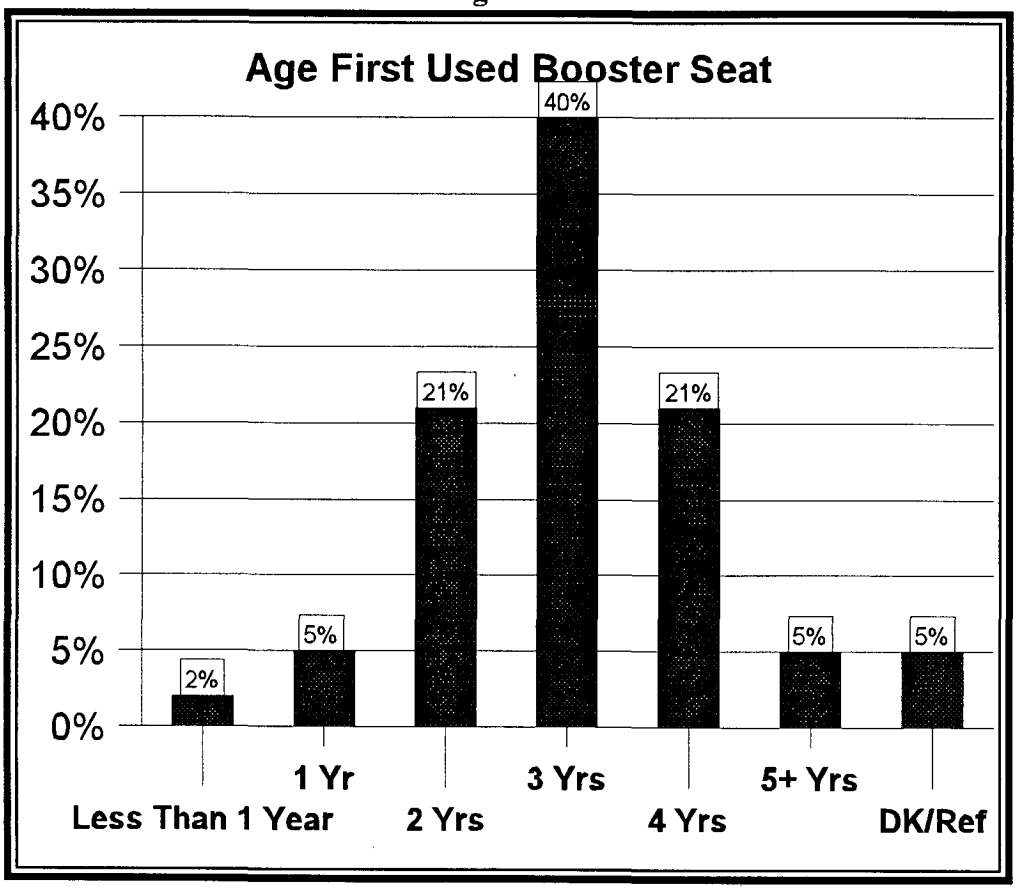
Figure 61



Qx: Before today, had you ever seen or heard of a type of car seat called a booster seat?
Qx: Have you ever used a booster seat when driving with your (child/children)?
Base: Parents/caregivers as defined on page 28
Unweighted N's listed above.

The most frequent age at which parents/caregivers started using booster seats with their child(ren) was age three (40%). However, more than one-fourth (28%) of parents/caregivers who had used booster seats said they had begun using them before the child reached that age.

Figure 62

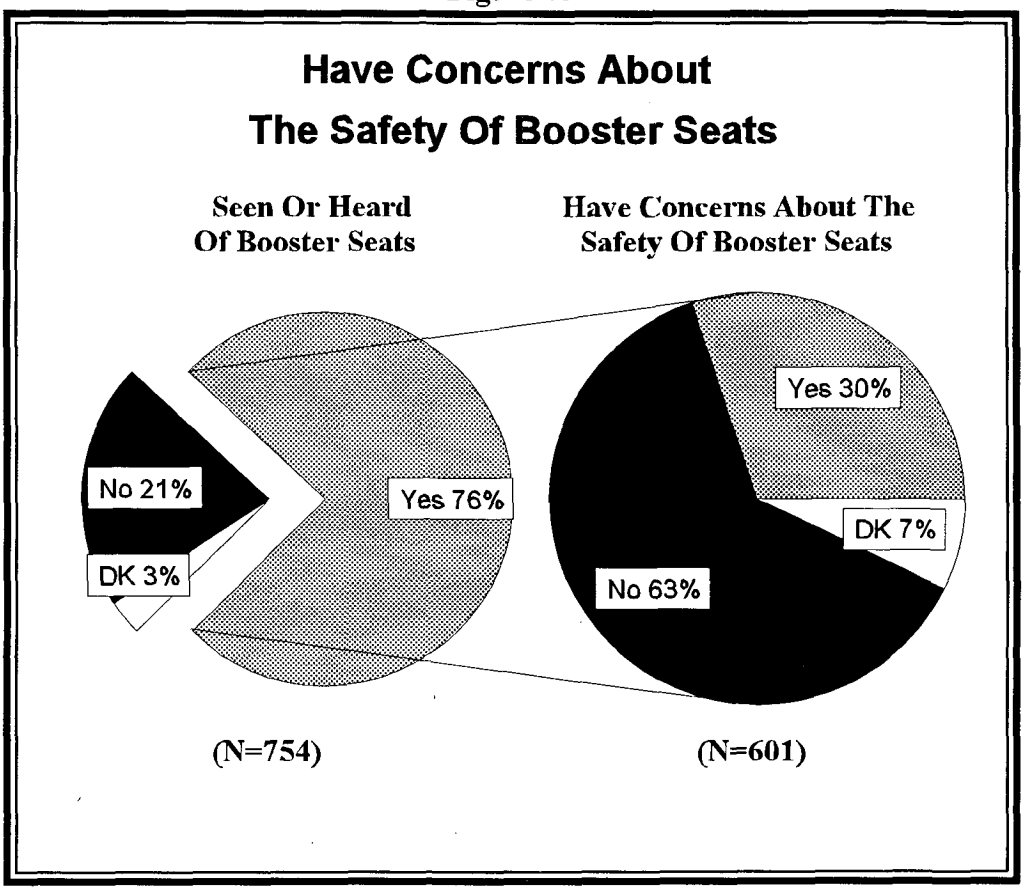


Qx: At what age did you begin using a booster seat for your children?
Base: Parents/caregivers who said they had used a booster seat when driving their children.
Unweighted N=321

Concerns About The Safety Of Booster Seats

During pre-testing of the questionnaire, subjects participating in the testing expressed concern about the safety of booster seats. As a consequence, the 1998 survey added a new question asking if the respondent had any concerns about the safety of booster seats. This question was asked only of parents/caregivers who had said they were aware of booster seats. Among the 76% of parents/caregivers who had seen or heard of booster seats, almost one-third (30%) had concerns about their safety and another 7% were unsure.

Figure 63



Qx: Before today, had you ever seen or heard of a type of car seat called a booster seat?
Qx: Do you have any concerns about the safety of booster seats?
Base: Parents/caregivers as defined on page 28
Unweighted N's listed above.

When asked what concerns they had about the safety of booster seats, the parents/caregivers criticized them as loose fitting and unstable systems that would not adequately restrain the child in a crash. More than half (52%) complained that the restraints were inadequate to hold the child while 30% expressed anxiety that the seat was not securely attached and was unstable.

Table 6
Concerns About Booster Seats

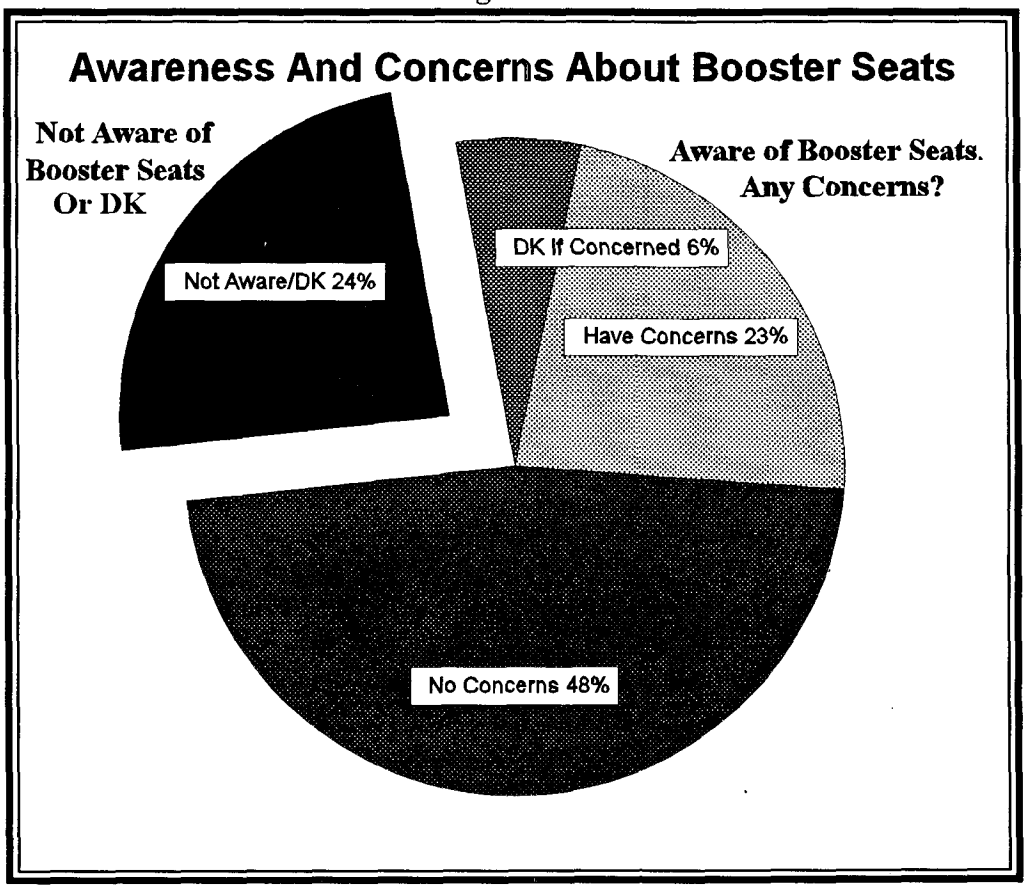
Qx: What are those concerns (about the safety of booster seats)?
Base: Parents/caregivers who said they had concerns about the safety of booster seats.
Unweighted N=184

Concern	Percent
Security of Attachment (Net)	**30%**
Seat isn't securely attached to car's seat/not stable/seat slides/shifts/rocks/ moves around	17%
Seat doesn't have it's own straps/attached by using seat belt straps	8%
Straps can't secure seat tightly enough	6%
Any other security of attachment mentions	1%
Inadequate Restraint (Net)	**52%**
No shoulder straps/restraints	17%
Inadequate restraint/does not fully restrain child (unspecified)	13%
Easy for child to climb/wiggle/escape out of seat	10%
Child/infant could slip/slide out/nothing to keep infant from sliding out of seat	9%
Child could be ejected/thrown/fly out of seat in a sudden stop	6%
All other inadequate restraint capability mentions	2%
Safety concerns/don't know how safe they are (unspecified)	**12%**
How safe they would be in an accident	**9%**
How safe they are compared to regular infant/child safety seats/might not be as secure as regular infant seats	**8%**
My child is too young/small to use it.	**2%**
Know of a child who was injured	*
Any other miscellaneous mentions	**9%**
No answer/don't know/refused	**5%**

*Less than 0.5% Total exceeds 100% due to multiple responses.

In total, 24% of parents/caregivers either said they were not aware of booster seats or else were unsure if they had seen or heard about them (see page 76). Almost one-fourth of parents/ caregivers (23%) had heard of booster seats and had concerns about them (i.e., 30% of the 76% who were aware of booster seats). Six percent were aware of booster seats, but unsure whether they had concerns about their safety. **Fewer than half of all parents/caregivers (48%) could say that they were aware of booster seats, and had no concerns about their safety.**

Figure 64

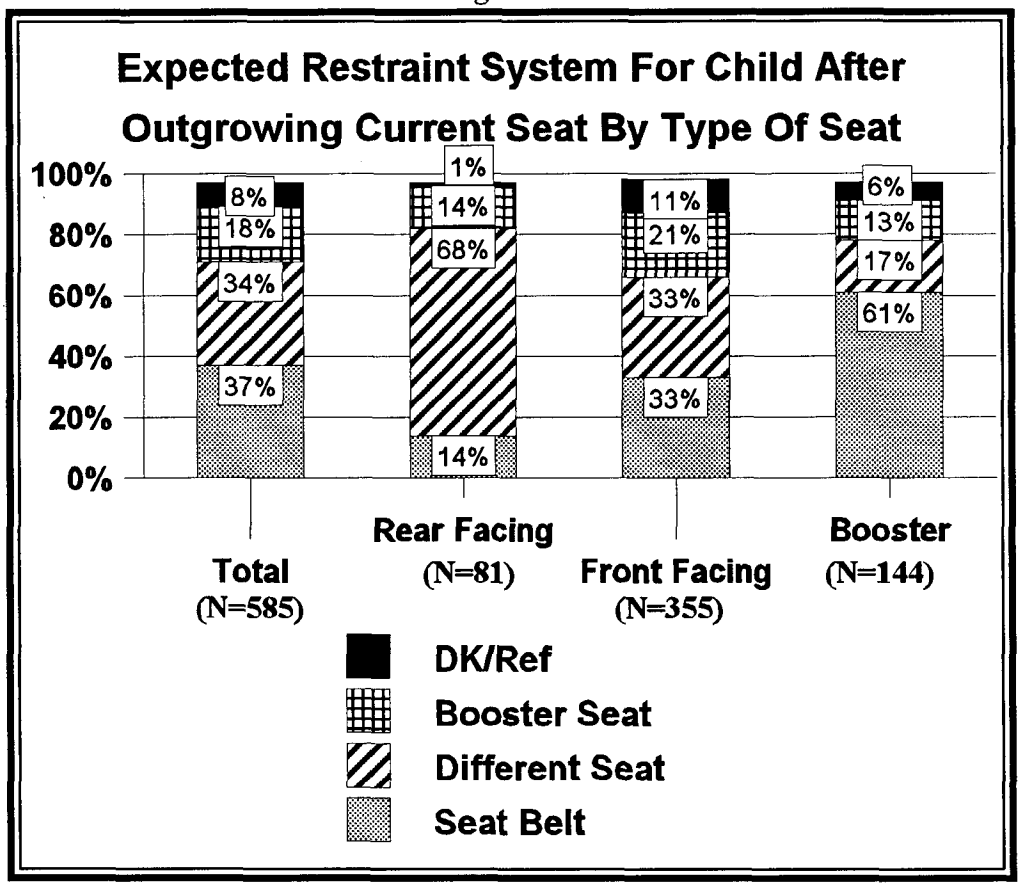


Qx: Before today, had you ever seen or heard of a type of car seat called a booster seat?
Qx: Do you have any concerns about the safety of booster seats?
Base: Parents/caregivers as defined on page 28
Unweighted N=754

Expected Restraint System After Outgrowing Current Seat

If the designated child in the survey at least on occasion rode in a child safety seat, then the interviewers asked the respondents if they expected the child to use "a different type of car seat, a seat belt, or something else" after outgrowing the current seat. In general, children in rear facing seats were expected to move on to other safety seats, although 14% expected the child to use seat belts. Expectations became more varied with front facing safety seats as slightly more than half (55%) said that the child would use a different seat or booster seat while 43% either answered that the child would graduate to seat belts or else that they did not know what would happen.

Figure 65



Qx: When your (AGE) outgrows his/her current child car seat, do you expect him/her to use a different type of car seat, a seat belt, or something else?
Base: Child at least on occasion rides in a child car seat.
Unweighted N's listed above.

1998 SURVEY RESULTS

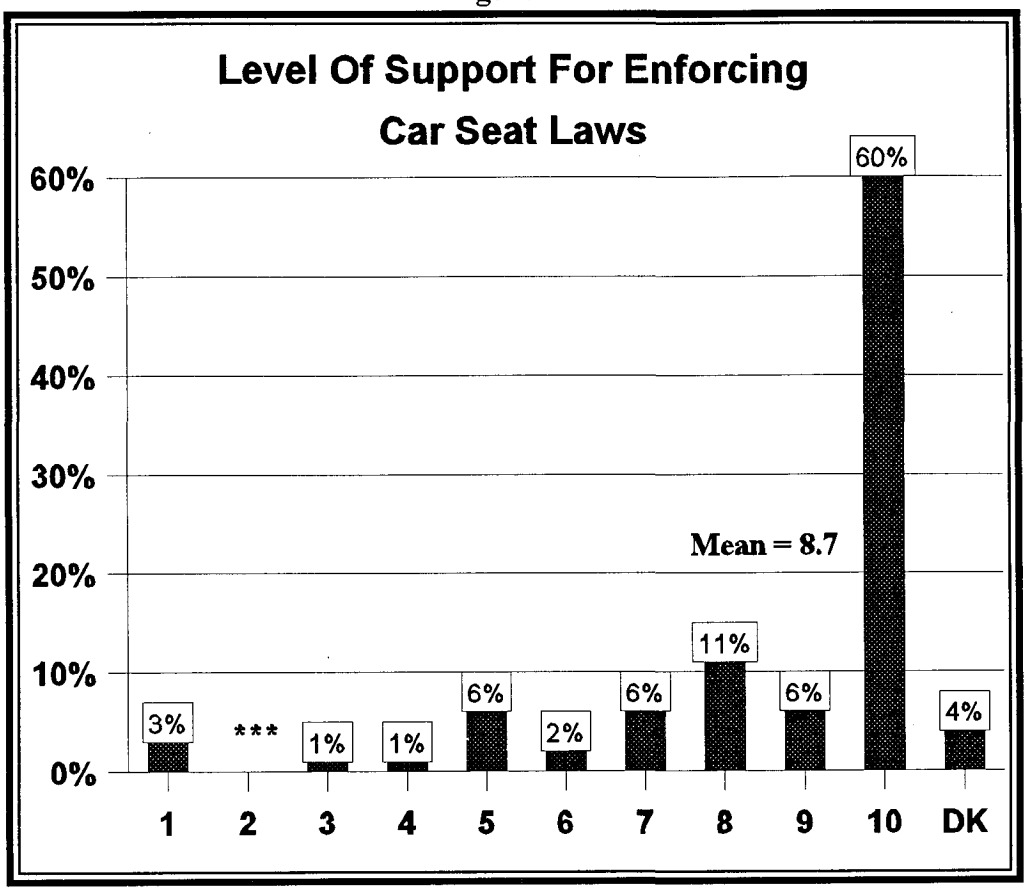
CHAPTER 6

ATTITUDES TOWARD ENFORCEMENT OF CHILD RESTRAINT LAWS

Support For Enforcement Of Car Seat Laws

The public (age 16 and older) favors stringent enforcement of car seat laws. Interviewers asked respondents their opinion of how strict police enforcement of child car seat laws should be. Respondents were asked to answer on a scale of 1 to 10, where 1 meant that police should hardly ever give a ticket for a car seat violation and 10 meant that police should give a ticket at every opportunity. Three-in-five persons (60%) believed that the police should issue a ticket at every opportunity.

Figure 66



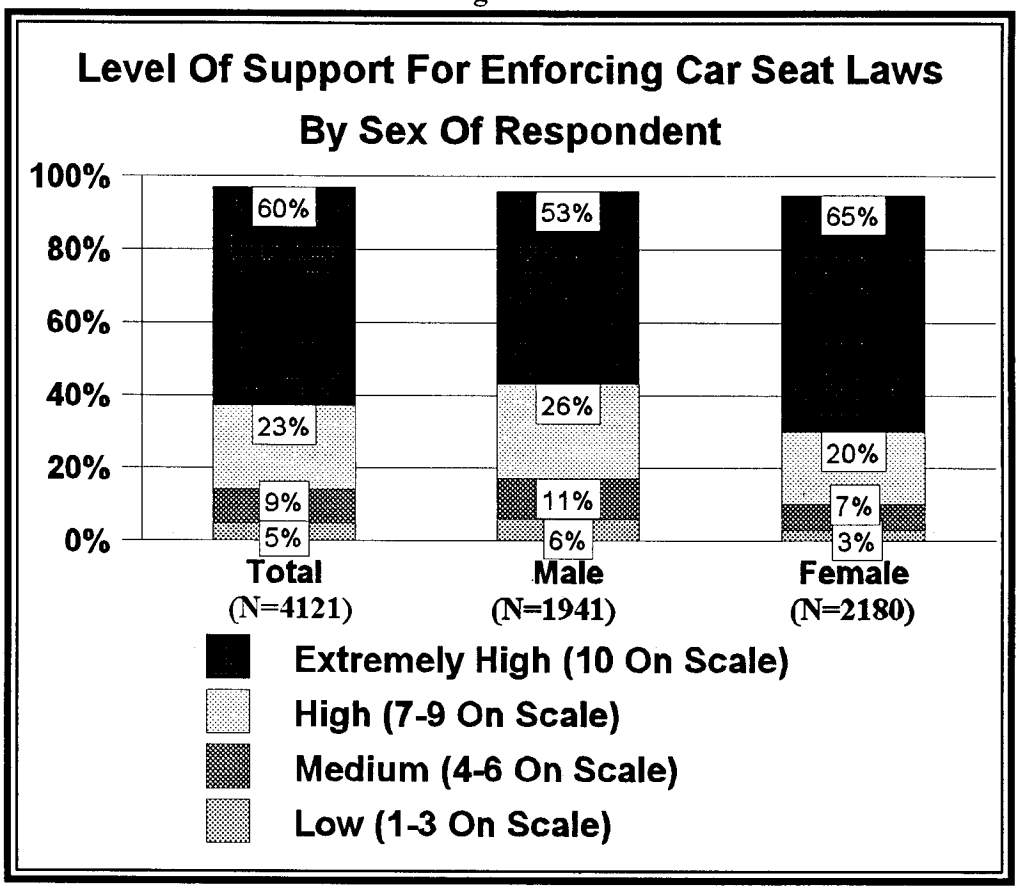
Qx: *How do you personally feel about the police enforcement of child car seat laws? On a scale of 1 to 10, where 1 means police should hardly ever give tickets and 10 means police should give a ticket at every opportunity for violations of child car seat laws, how strict should police enforcement be?*

Base: *Total population age 16+.*

Unweighted N=4121 *** *Less than 0.5%*

Females were more likely to call for strict enforcement of the car seat laws than males: 65% of females believed that police should ticket at every opportunity versus 53% of males.

Figure 67

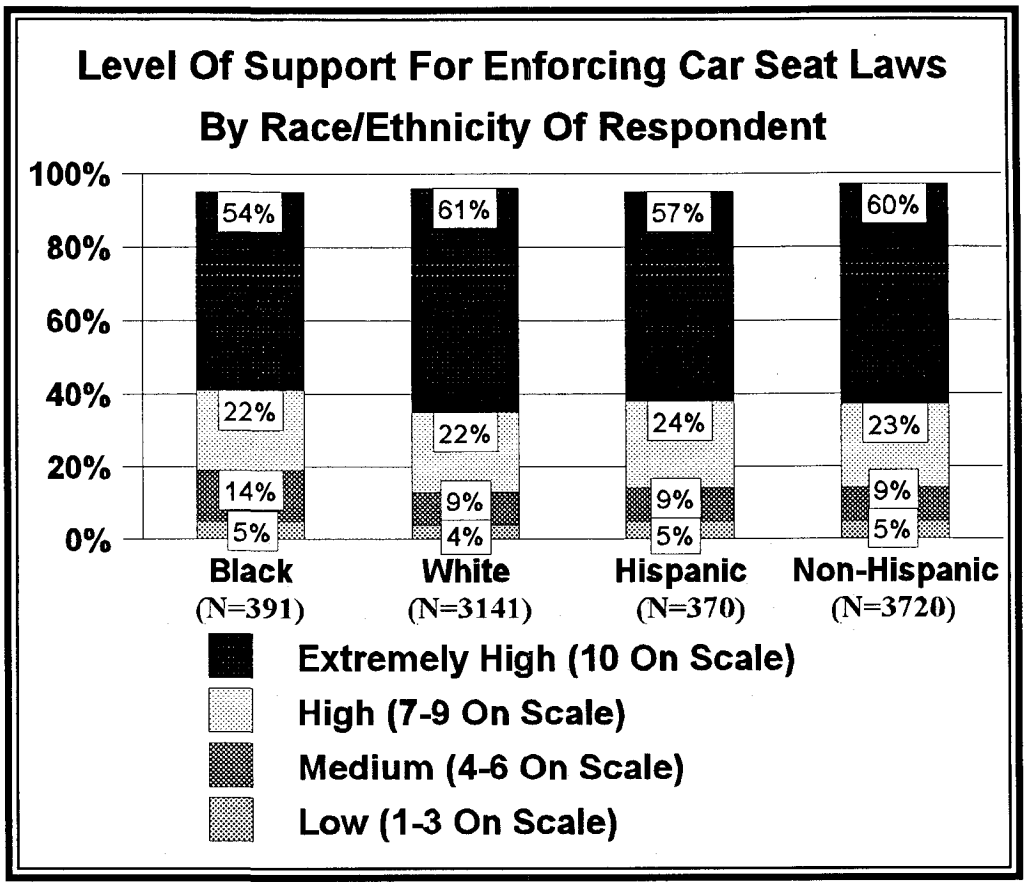


Qx: *How do you personally feel about the police enforcement of child car seat laws? On a scale of 1 to 10, where 1 means police should hardly ever give tickets and 10 means police should give a ticket at every opportunity for violations of child car seat laws, how strict should police enforcement be?*

Base: *Total population age 16+.*

Unweighted N's listed above.

Sixty percent of non-Hispanics favored police giving a ticket at every opportunity for violations compared to 57% of Hispanics. The gap was wider between blacks and whites: 54% of blacks favored ticketing at every opportunity versus 61% of whites.



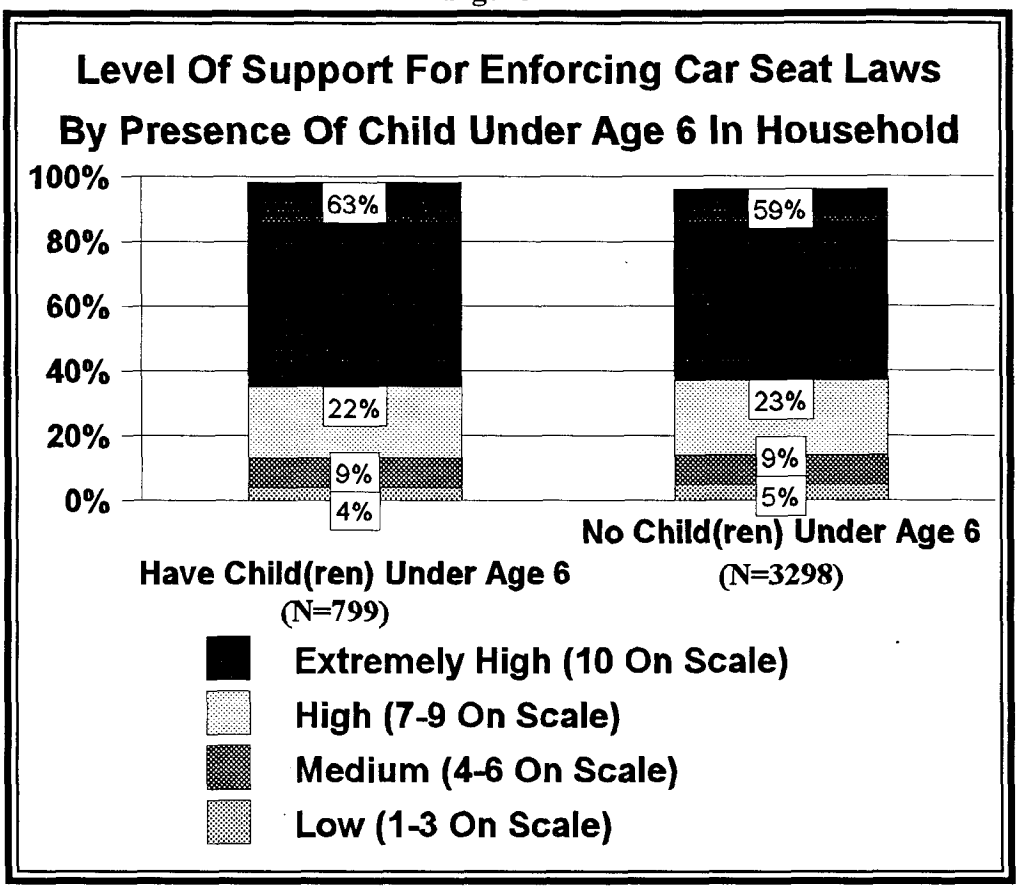
Qx: *How do you personally feel about the police enforcement of child car seat laws? On a scale of 1 to 10, where 1 means police should hardly ever give tickets and 10 means police should give a ticket at every opportunity for violations of child car seat laws, how strict should police enforcement be?*

Base: *Total population age 16+.*

Unweighted N's listed above.

The presence of a young child in the household made relatively little difference in the level of support for enforcing car seat laws. Sixty-three percent of persons who had a child under the age of 6 in the household favored ticketing at every opportunity, as opposed to 59% who did not have a child in that age range living in their household.

Figure 69



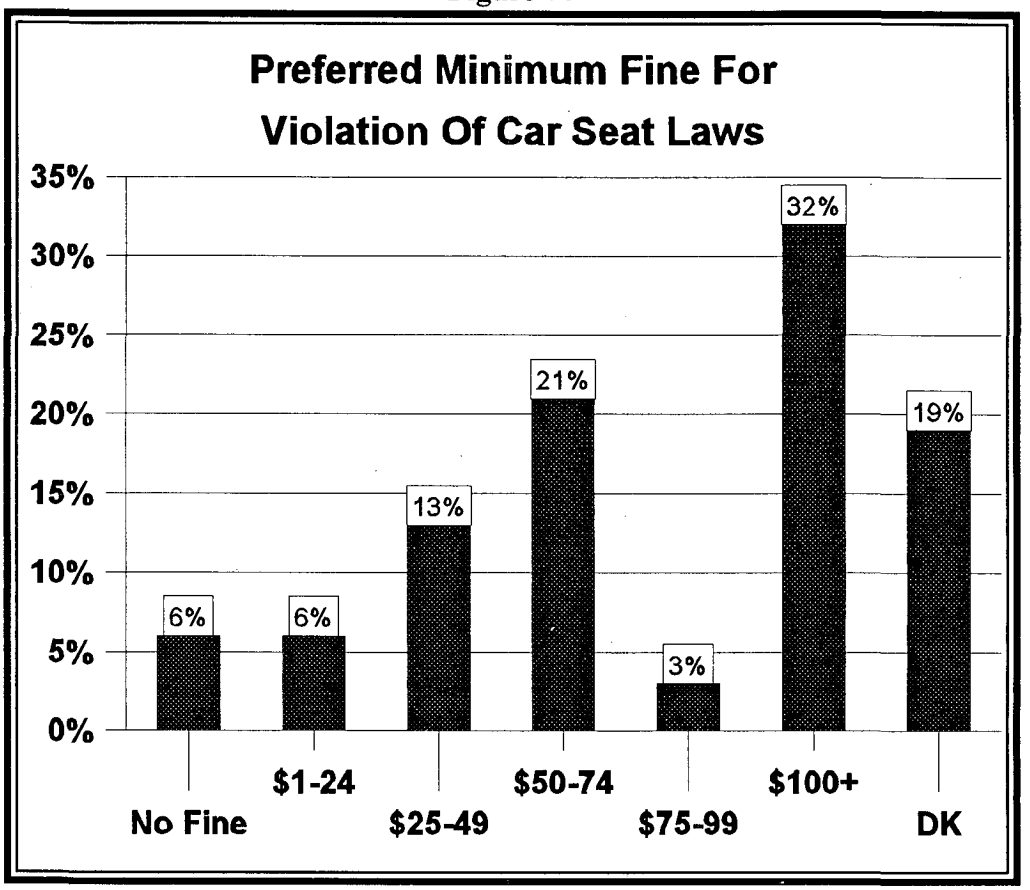
Qx: *How do you personally feel about the police enforcement of child car seat laws? On a scale of 1 to 10, where 1 means police should hardly ever give tickets and 10 means police should give a ticket at every opportunity for violations of child car seat laws, how strict should police enforcement be?*

Base: *Total population age 16+.*

Unweighted N's listed above.

Regardless of their attitude about police enforcement of child car seat laws, respondents age 16 and older were asked what they thought the minimum fine should be for violation of the laws. A majority (56%) believed the fine should be $50 or more, with almost one-third of the public (32%) favoring a fine of $100 or more.

Figure 70

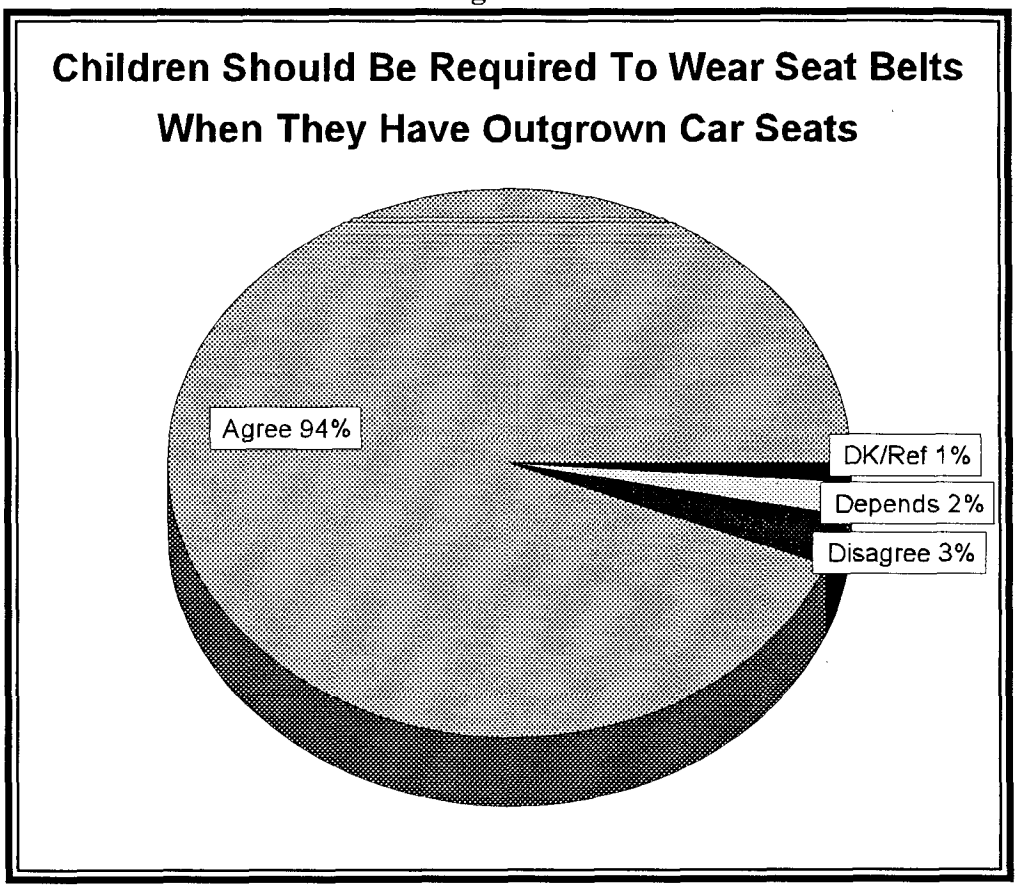


Qx: What do you think the minimum fine should be for violation of child car seat laws?
Base: Total population age 16+
Unweighted N=4121

Attitudes About Occupant Restraint Requirements For Children Who Outgrow Car Seats

Ninety-four percent of persons age 16 and older agreed that children should be required by law to wear seat belts once they have outgrown car seats, while 3% disagreed. Two percent believed that it depended on the age of the child, while 1% said they did not know if there should be a seat belt requirement.

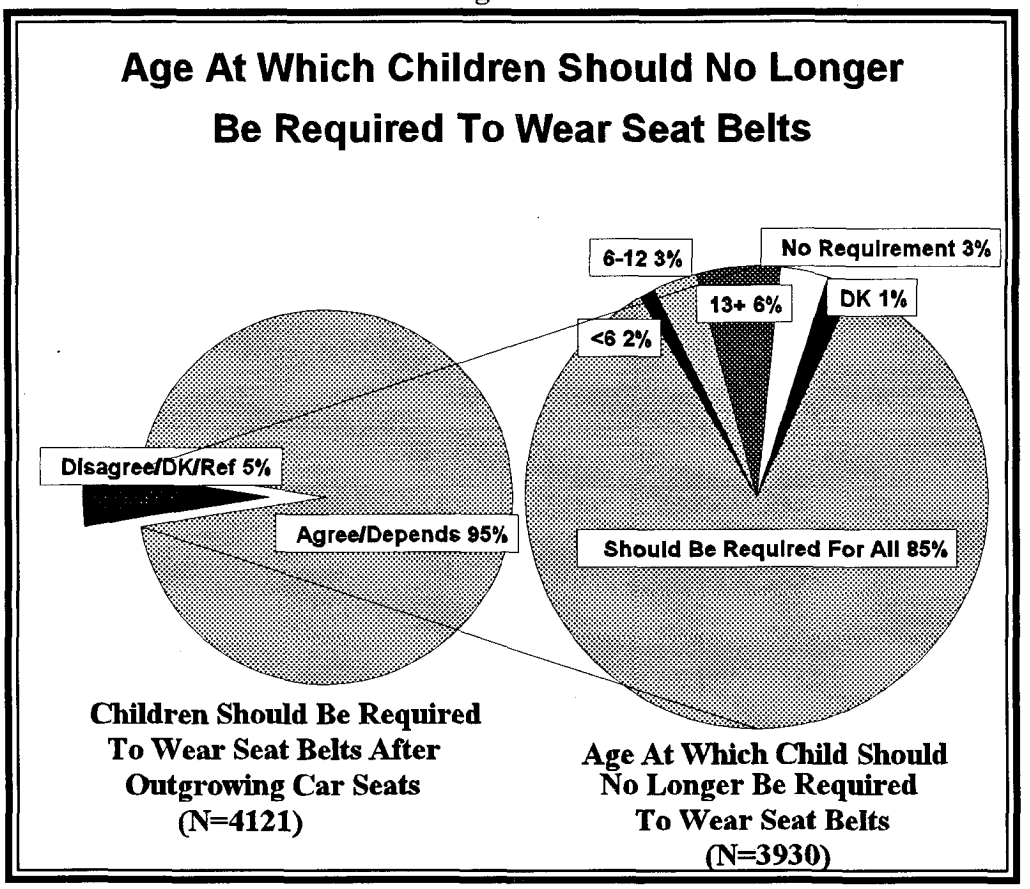
Figure 71



Qx: *What about when children outgrow a child car seat? Do you agree or disagree that they should be required by law to wear seat belts when riding in a vehicle?*
Base: *Total population age 16+*
Unweighted N=4121

Those respondents who agreed that children should be required to wear seat belts after outgrowing car seats, or said it depended on the child's age, were asked if there was an upper age limit beyond which children should not be required to wear seat belts. The vast majority (85%) rejected the notion of an upper age limit by saying that seat belt use should be required for all children (which equated to 81% of the total population age 16 and older). The remaining respondents either offered a specific age as an age limit, reversed their previously stated support for the seat belt requirement, or said they did not know if there should be an age limit.

Figure 72



Qx: *What about when children outgrow a child car seat? Do you agree or disagree that they should be required by law to wear seat belts when riding in a vehicle?*

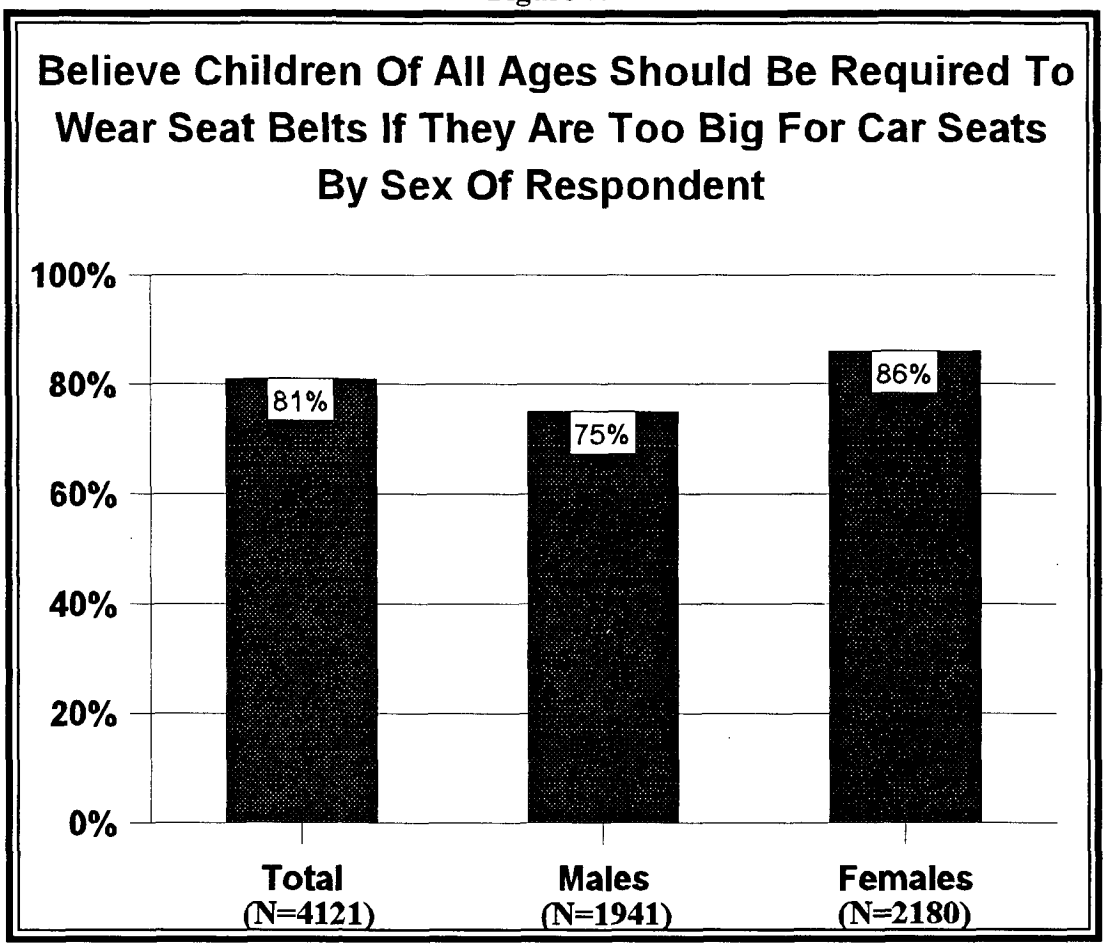
Qx: *How old do you think children should be before they are not required by law to wear seat belts or do you think all children should be required to wear them?*

Base: *Total population age 16+*

Unweighted N's listed above.

As stated on the previous page, 81% of the public age 16 and older believed that all children should be required to wear seat belts after outgrowing car seats (85% of the 95% who agreed there should be a requirement or said it depended on the child's age). Females (86%) were more likely to favor the requirement for all children than were males (75%).

Figure 73



Qx: *What about when children outgrow a child car seat? Do you agree or disagree that they should be required by law to wear seat belts when riding in a vehicle?*

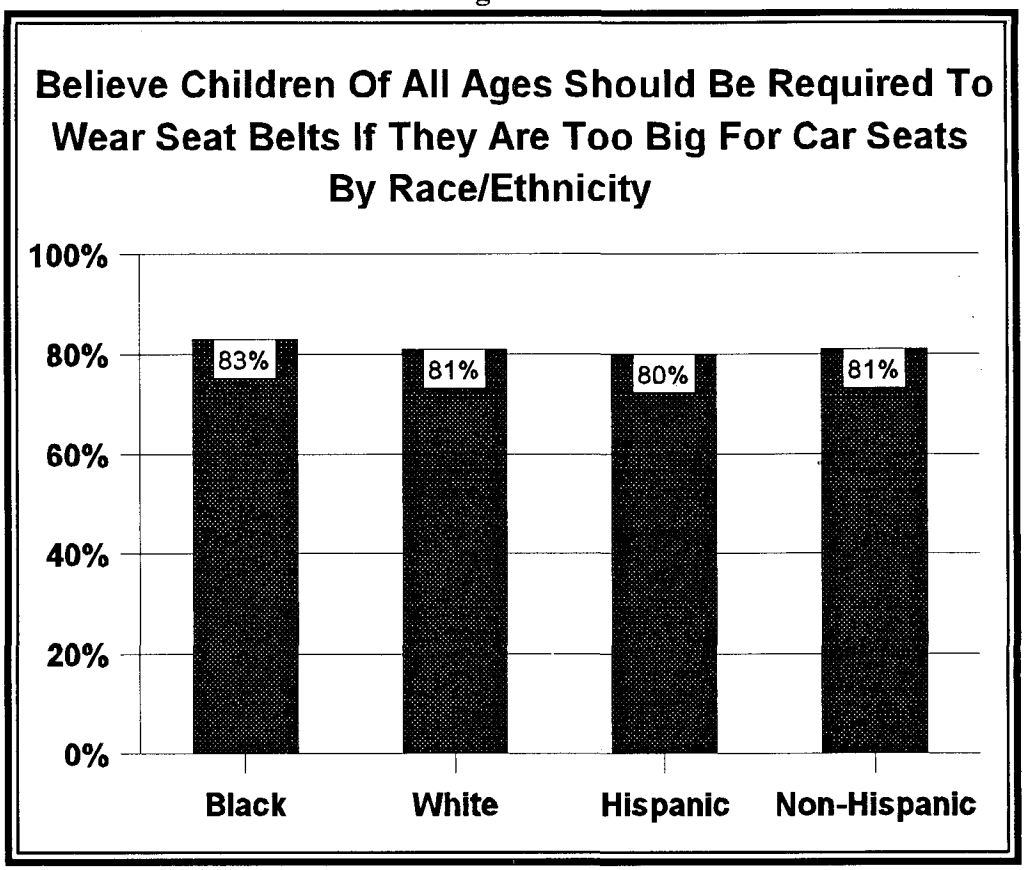
Qx: *How old do you think children should be before they are not required by law to wear seat belts or do you think all children should be required to wear them?*

Base: *Total population age 16+*

Unweighted N's listed above.

The clear majority of persons in each racial/ethnic category analyzed in this report believed that all children should be required by law to wear seat belts after outgrowing car seats: 83% of blacks, 81% of whites, 80% of Hispanics, and 81% of non-Hispanics.

Figure 74



Qx: *What about when children outgrow a child car seat? Do you agree or disagree that they should be required by law to wear seat belts when riding in a vehicle?*

Qx: *How old do you think children should be before they are not required by law to wear seat belts or do you think all children should be required to wear them?*

Base: *Total population age 16+*

Unweighted N's listed above.

RESULTS FROM THE BUCKLE UP AMERICA SURVEYS

CHAPTER 7

THE PUBLIC'S PERCEIVED INFORMATION NEEDS ON CHILD OCCUPANT PROTECTION

1998 MOTOR VEHICLE OCCUPANT SAFETY SURVEY

Besides the Motor Vehicle Occupant Safety Survey, NHTSA conducts other telephone surveys containing questions on occupant protection. Of particular relevance to this report are results from several questions introduced in the most recent Buckle Up America (BUA) Surveys. Since 1998, NHTSA has been conducting these surveys both immediately before and after national mobilization campaigns to enforce occupant protection laws. The national mobilizations occur twice a year, during a one week period that ends with Memorial Day and during Thanksgiving week. In 1998 and 1999, the BUA Surveys were conducted by the same firm that conducted the 1998 Motor Vehicle Occupant Safety Survey, Schulman, Ronca, & Bucuvalas, Inc.

The methods used in conducting the BUA Surveys were the same as those used for the Motor Vehicle Occupant Safety Survey except that:

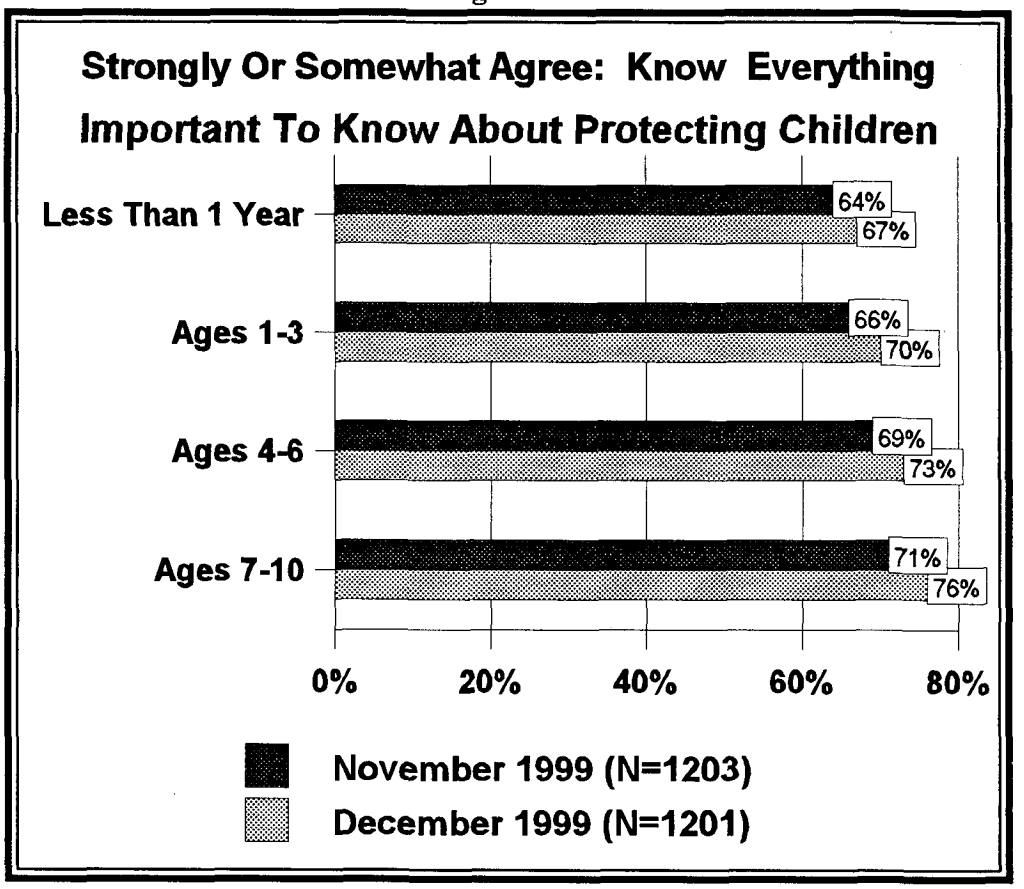
- There was no oversampling of specific age groups;
- The sample size was smaller (approximately 1200);
- The period in the field was shorter (about 1 week).

During the pre-mobilization telephone survey conducted in November 1999, and the post-mobilization survey conducted in December 1999, NHTSA asked a randomly selected and nationally representative sample of persons age 16 and older whether they felt they needed information on how to protect children in a motor vehicle, what information they would find helpful, and where would they like to receive that information. This Chapter summarizes the data collected from both the November and December 1999 BUA Surveys pertaining to those questions.

Level Of Confidence In Knowing How To Protect A Child

Each participant in the November and December 1999 BUA Surveys was read the statement "I feel I know everything that is important to know about how to protect a [CHILD] riding in a motor vehicle." The statement was read four times, each time specifying a specific age range for the child. Respondents were read the statements in descending order of child's age. They could strongly agree, somewhat agree, somewhat disagree, or strongly disagree. As shown in Figure 75, most persons believed they knew everything they needed to know regardless of the child's age, although the proportion who felt confident declined as the age range of the child became younger.

Figure 75



Qx: *I feel I know everything that is important to know about how to protect a [child between the ages of 7 and 10] [child between the ages of 4 and 6] [toddler between the ages of 1 and 3] [infant under the age of 1] riding in a motor vehicle.*

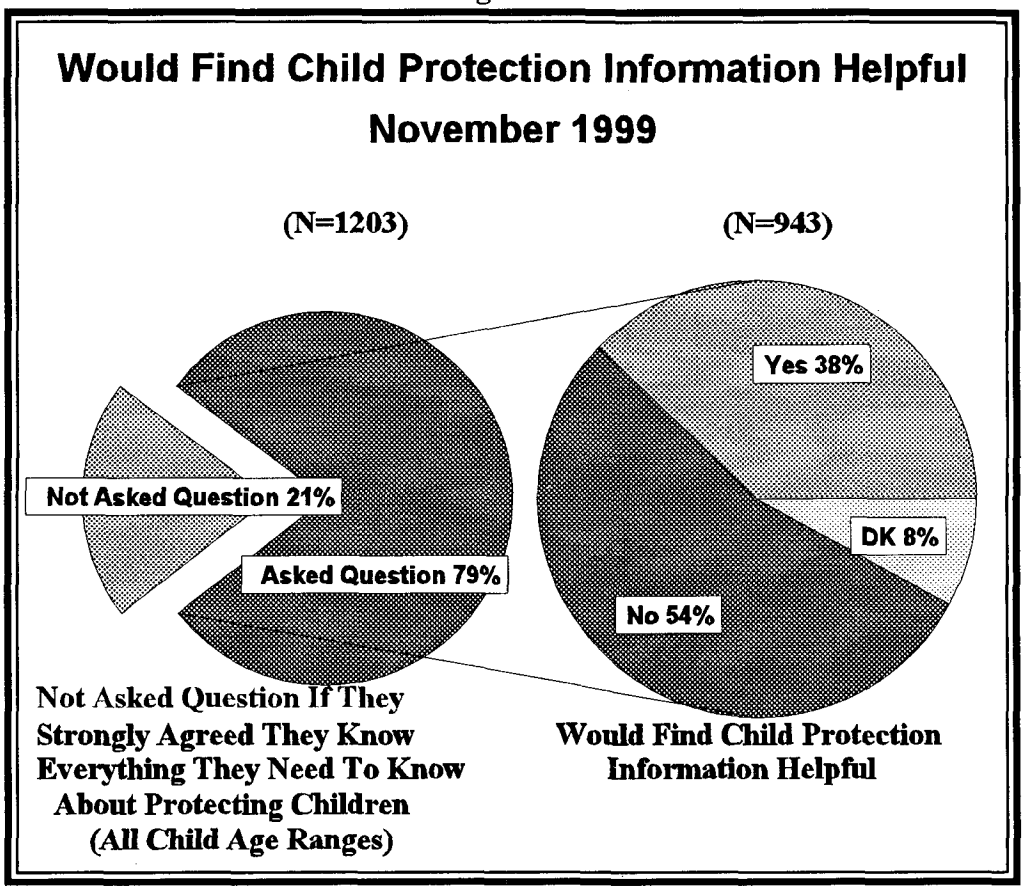
Base: *Total population age 16+*

Unweighted N's listed above.

Desire For Child Protection Information

The interviewers next asked if there was any particular type of information the respondents would find helpful on how to protect a child in a motor vehicle. Excluded from the question were respondents who had strongly agreed, for all 4 age ranges presented to them in the previous series of questions, that they knew everything they needed to know about how to protect a child riding in a motor vehicle. This excluded slightly more than 20% of the sample during both months. Among those respondents who received the question, more than one-third in both November

Figure 76



Qx: I feel I know everything that is important to know about how to protect a [child between the ages of 7 and 10] [child between the ages of 4 and 6] [toddler between the ages of 1 and 3] [infant under the age of 1] riding in a motor vehicle.

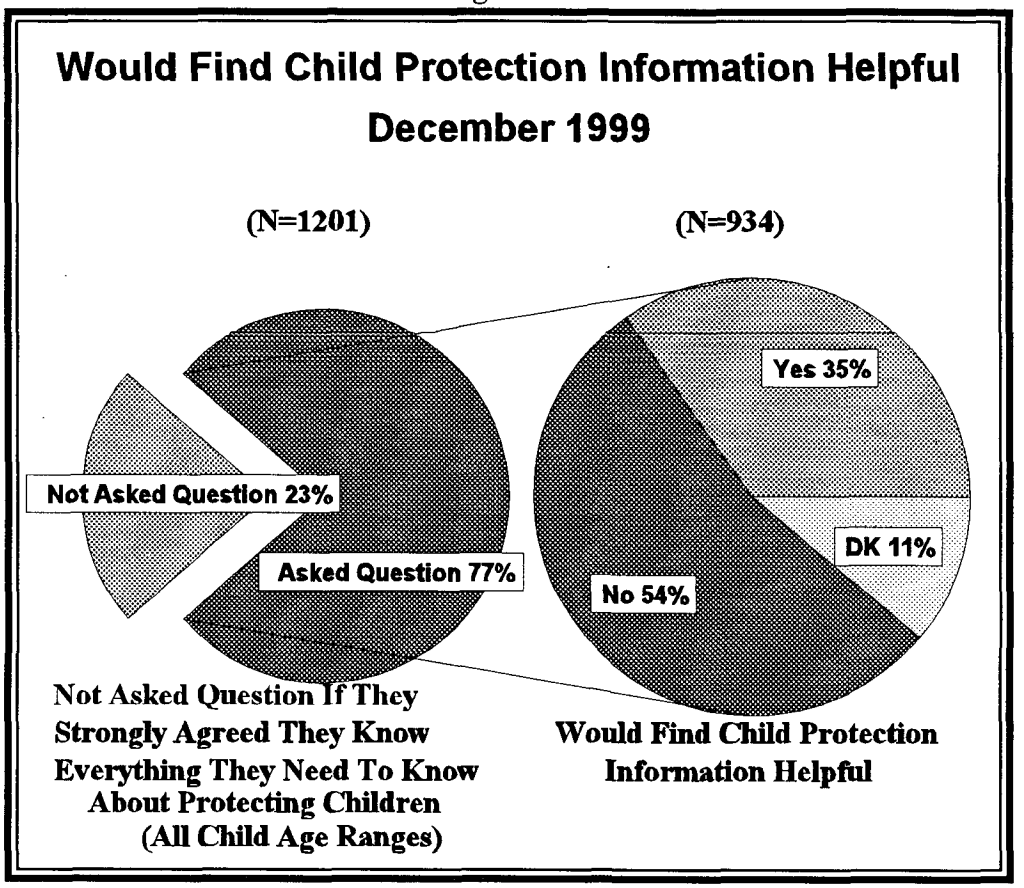
Qx: Is there any particular type of information you would find helpful on how to protect a child in a motor vehicle?

Base: Total population age 16+

Unweighted N's listed above.

(38%) and December (35%) said they would find child protection information helpful. As a percentage of all persons age 16 and older, this equated to 30% and 27% for November and December 1999, respectively.

Figure 77



Qx: *I feel I know everything that is important to know about how to protect a [child between the ages of 7 and 10] [child between the ages of 4 and 6] [toddler between the ages of 1 and 3] [infant under the age of 1] riding in a motor vehicle.*

Qx: *Is there any particular type of information you would find helpful on how to protect a child in a motor vehicle?*

Base: *Total population age 16+*

Unweighted N's listed above.

Those respondents who said that they would find particular information helpful were asked what information that would be. The results are presented in Table 7.

Table 7
Particular Types Of Information The Public Would Find Helpful

Qx: What information would you find helpful?
Base: Said there were particular types of information they would find helpful on how to protect a child in a motor vehicle.
Unweighted N=350 (November) Unweighted N=329 (December)

Type Of Information	Nov.	Dec.
Child Safety (Net)	**69%**	**65%**
Information/Ways To Keep Children Safe/Safety Tips	9%	10%
Information On How To Protect Infants/Kids Under 1 Year	3%	6%
Information On How To Protect Toddlers	*	2%
Information On Where To Correctly Position/Sit A Child In A Car	3%	4%
Safety Seats (SubNet)	**35%**	**35%**
Information On Proper use Of Child Safety Seats	14%	10%
Correct Installation Of Child Safety Seats	11%	11%
Proper Placement For Child Safety Seat	4%	9%
Proper Use Of Child Safety Seat Belts	*	2%
Information On Child Seat Shoulder Straps	1%	1%
Information On Booster Seats	1%	1%
Best Brand Car Seat/Which Car Seats Are Best	7%	4%
Any Other Safety Seat Mentions	4%	2%
Seat Belts (SubNet)	**19%**	**18%**
Seat Belt Safety/Proper Restraint (Unspecified)	10%	7%
Proper Use/How To Use Seat Belts/Proper Buckling Of Seat Belt	9%	10%
Any Other Seat Belt Mentions	*	1%
Air Bags (SubNet)	**5%**	**3%**
Information Regarding Air Bags/Concerns About Air Bags	5%	3%
Any Other Air Bag Mentions	–	*
Any Other Child Safety Mentions	**4%**	**2%**

Table 7 (Continued)
Particular Types Of Information The Public Would Find Helpful

Type Of Information	Nov.	Dec.
Laws/Legal Requirements (Net)	**13%**	**17%**
Laws Pertaining To Children In Motor Vehicles (Unspecified)	3%	3%
Weight Requirement For Safety Seat	3%	2%
Weight Requirement For Booster Seat	*	–
Weight Requirement/More Clarification About Correct Weight (Unsp)	–	2%
Height Requirement/More Clarification About Height (Unspecified)	1%	2%
Age Requirement For Front Seat Travel	1%	2%
Age Requirement For Car Seat	6%	7%
Requirement For Child To Stop Using Car Seat	4%	2%
Any Other Laws/Legal Requirement Mentions	*	1%
Media (Net)	**28%**	**27%**
TV	6%	4%
Radio	2%	1%
Newspaper	1%	*
Magazines	1%	*
Billboards	1%	1%
Pamphlets/Booklets	15%	12%
Seminars	1%	1%
Videos/Videos On Public Safety	1%	1%
DMV/Information From DMV/Driving Manual	2%	1%
Public Service Announcements	3%	2%
Schools/School Level Information	2%	2%
Any Other Media Mentions	8%	11%
Miscellaneous (Net)	**3%**	**5%**
Parents Paying Attention To Driving/Remind Parents To Drive Safely	1%	1%
Any Other Miscellaneous Mentions	2%	4%
DK/Ref	**6%**	**5%**

*Less than 0.5% – Zero cases Total exceeds 100% due to multiple responses.

Preferred Sources For Child Protection Information

The interviewers also asked the respondents "If you wanted to receive information on how to protect children in a motor vehicle, where would you like to be able to get that information?" **Once again, respondents who had strongly agreed that they knew everything they needed to know about how to protect children (of any age) were excluded from this question.** The most frequently cited locations were DMVs, police departments, direct mail, WEB sites, and TV.

Table 8
Preferred Sources For Receiving Child Protection Information

Qx: If you wanted to receive information on how to protect children in a motor vehicle, where would you like to be able to get that information?

Base: Population age 16+, excluding those who strongly agreed that they knew everything that was important to know about protecting children of all ages.

Unweighted N=943 (November) Unweighted N=934 (December)

Information Source	Nov.	Dec.
DMV/Department Of Motor Vehicles	19%	20%
Police/Police Departments	13%	14%
Direct Mail	12%	13%
WEB Site	12%	11%
TV	10%	10%
Public Library	8%	8%
Schools	4%	5%
Newspaper	4%	4%
Supermarket	4%	3%
Post Office	NA	4%
Doctor (Unspecified)	2%	3%
Magazines	3%	1%
Store	NA	3%
Radio	2%	2%
AAA	2%	2%
Pediatrician	2%	1%
Department Of Transportation	NA	2%
Car Dealership	NA	2%
Clinic	1%	1%
Secretary Of State	1%	1%
Insurance Companies	1%	1%
Car Seat Manufacturer	NA	1%
Nurse	*	*
Other	23%	20%
Don't Know/Refused	13%	13%

*Less than 0.5% NA - Not a coded response category. Total exceeds 100% due to multiple responses.

1998 SURVEY RESULTS

CHAPTER 8

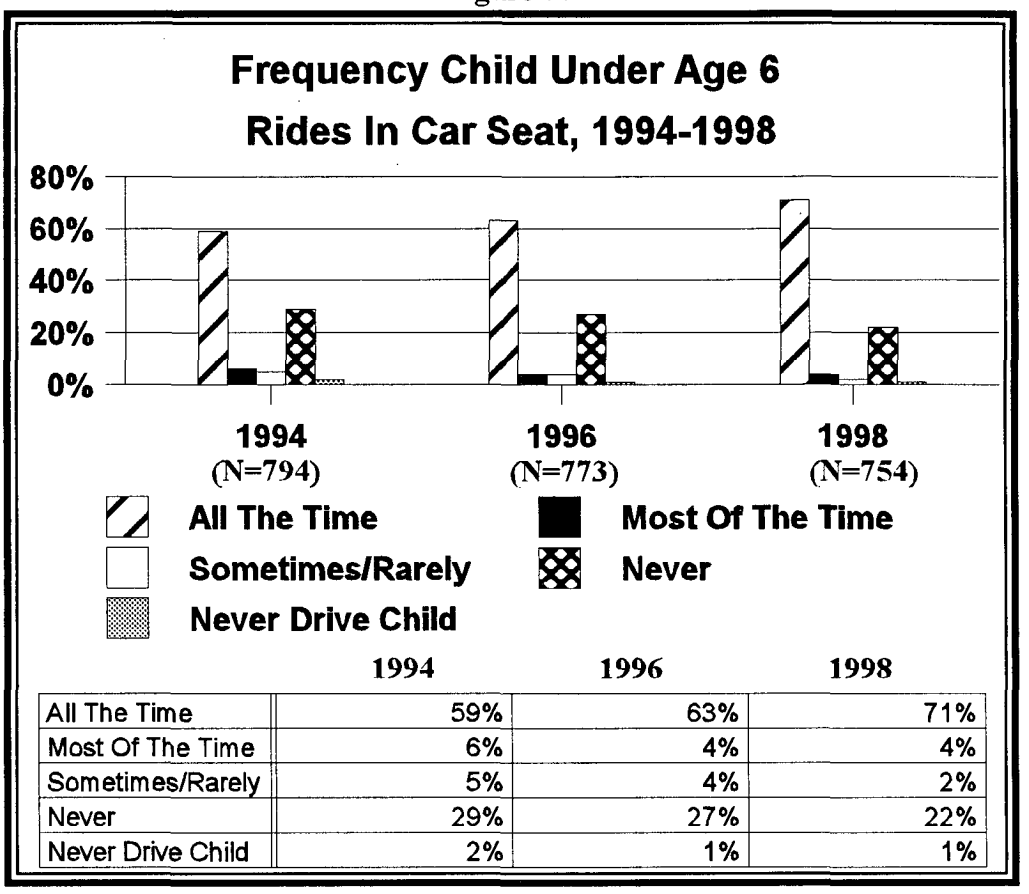
TRENDS

1994-1998

Car Seat Use 1994-1998

The proportion of parents/caregivers who said that the selected child (under age 6) "always" uses a car seat increased from 59% in 1994 to 71% in 1998. Conversely, children in that age range who never use a car seat decreased from 29% in 1994 to 22% in 1998.

Figure 78



	1994	1996	1998
All The Time	59%	63%	71%
Most Of The Time	6%	4%	4%
Sometimes/Rarely	5%	4%	2%
Never	29%	27%	22%
Never Drive Child	2%	1%	1%

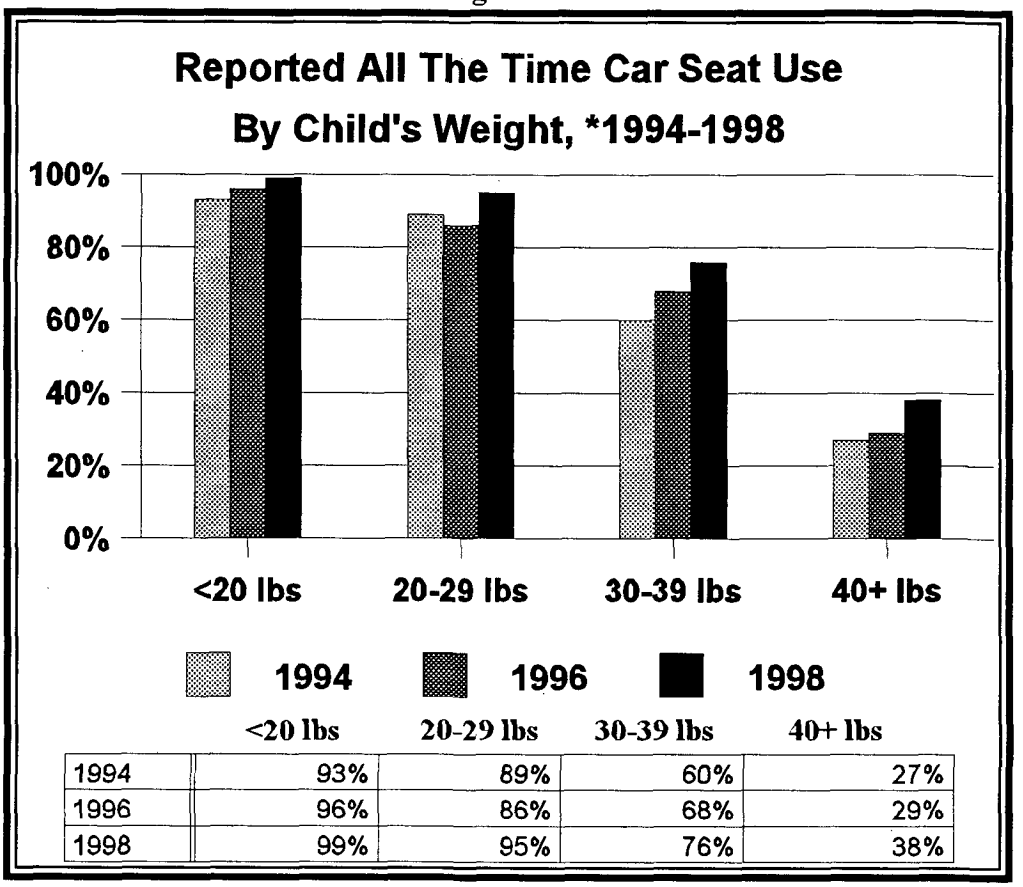
Qx: *When you are driving and (AGE) rides in the vehicle with you, how often does (he/she) ride in a child car seat. *Child car seats include infant seats, toddler seats and booster seats. Would you say (he/she) rides in a child car seat all of the time, most of the time, some of the time, rarely, or never?*

Base: *Parents/caregivers as defined on page 28.*

**This sentence was added to the question in 1998.*

The proportion of children who were reported in 1998 to be using car seats "all of the time" increased across weight ranges from the previous survey. The recorded increase was smallest for those weighing under 20 pounds, largely reflecting that the vast majority of infants (more than 90%) during earlier years already were said to be using car seats full time.

Figure 79



	<20 lbs	20-29 lbs	30-39 lbs	40+ lbs
1994	93%	89%	60%	27%
1996	96%	86%	68%	29%
1998	99%	95%	76%	38%

Qx: *How much does (he/she) weigh?*

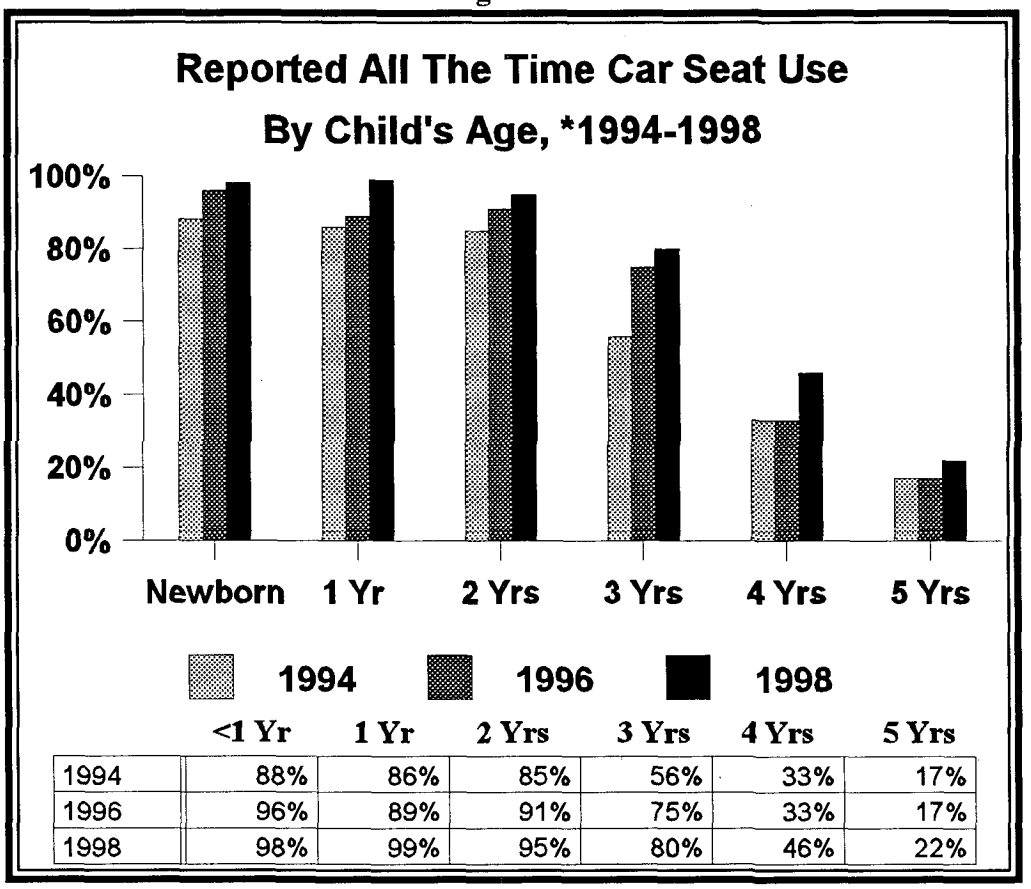
Qx: *When you are driving and (AGE) rides in the vehicle with you, how often does (he/she) ride in a child car seat? Child car seats include infant seats, toddler seats and booster seats. Would you say (he/she) rides in a child car seat all of the time, most of the time, some of the time, rarely, or never?*

Base: *Parents/caregivers as defined on page 28.*

**Minor adjustments have been made to 1994 weight numbers for analytic consistency across years.*

There has been at least a 10 percentage point increase since 1994 in the proportion of children reported to use car seats "all the time" for all age groups specified below except 5-year-olds, with the largest increase occurring among 3-year-olds. In terms of the two most recent survey years, the largest increase between 1996 and 1998 occurred among 4-year-olds.

Figure 80



	<1 Yr	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs
1994	88%	86%	85%	56%	33%	17%
1996	96%	89%	91%	75%	33%	17%
1998	98%	99%	95%	80%	46%	22%

Qx: *What is the age of the (CHILD)?*

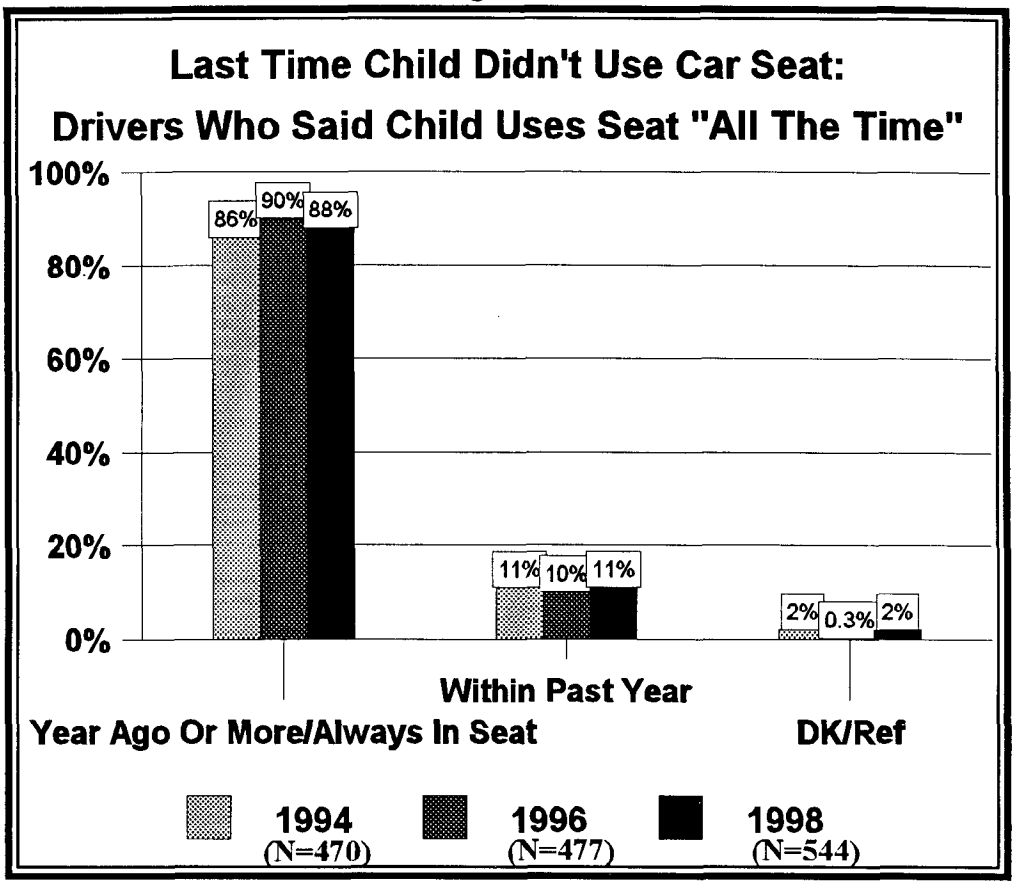
Qx: *When you are driving and (AGE) rides in the vehicle with you, how often does (he/she) ride in a child car seat? Child car seats include infant seats, toddler seats and booster seats. Would you say (he/she) rides in a child car seat all of the time, most of the time, some of the time, rarely, or never?*

Base: *Parents/caregivers as defined on page 28.*

**Minor adjustments have been made to 1994 age numbers for analytic consistency across years.*

In each of the survey years, a proportion of respondents who said that the child "always" used a car seat when riding with them acknowledged on a follow-up question that the child actually had not been in the car seat at some point in the recent past. However, in each of the years, the vast majority answered that any lapse had occurred a year or more ago, or else reiterated that the child was always in the seat.

Figure 81



Qx: *When you are driving and (AGE) rides in the vehicle with you, how often does (he/she) ride in a child car seat? Child car seats include infant seats, toddler seats and booster seats. Would you say (he/she) rides in a child car seat . . .*

Qx: *When was the last time (he/she) did not ride in a child car seat when you were driving?*

**Qx:* *[If "don't know] Has there been any occasion in the past 12 months when (he/she) did not ride in a car seat when you were driving?*

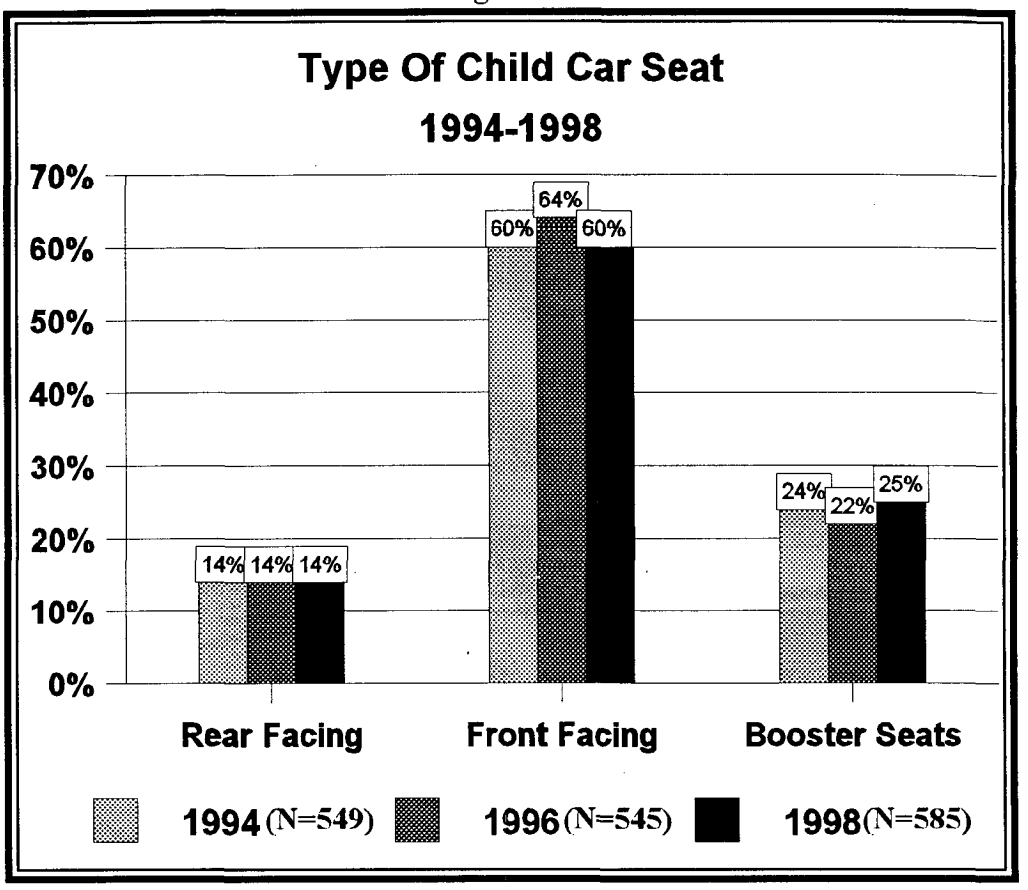
Base: *Drivers who said the child uses a car seat "all the time" when they drive.*

**This follow-up question was added in 1996.*

Type and Location Of Car Seat, 1994-1998

In 1998, one-in-seven children using car seats normally rode in a rear facing position, three-fifths rode in toddler seats in a front facing position, and one-quarter were using booster seats. This was similar to previous years.

Figure 82



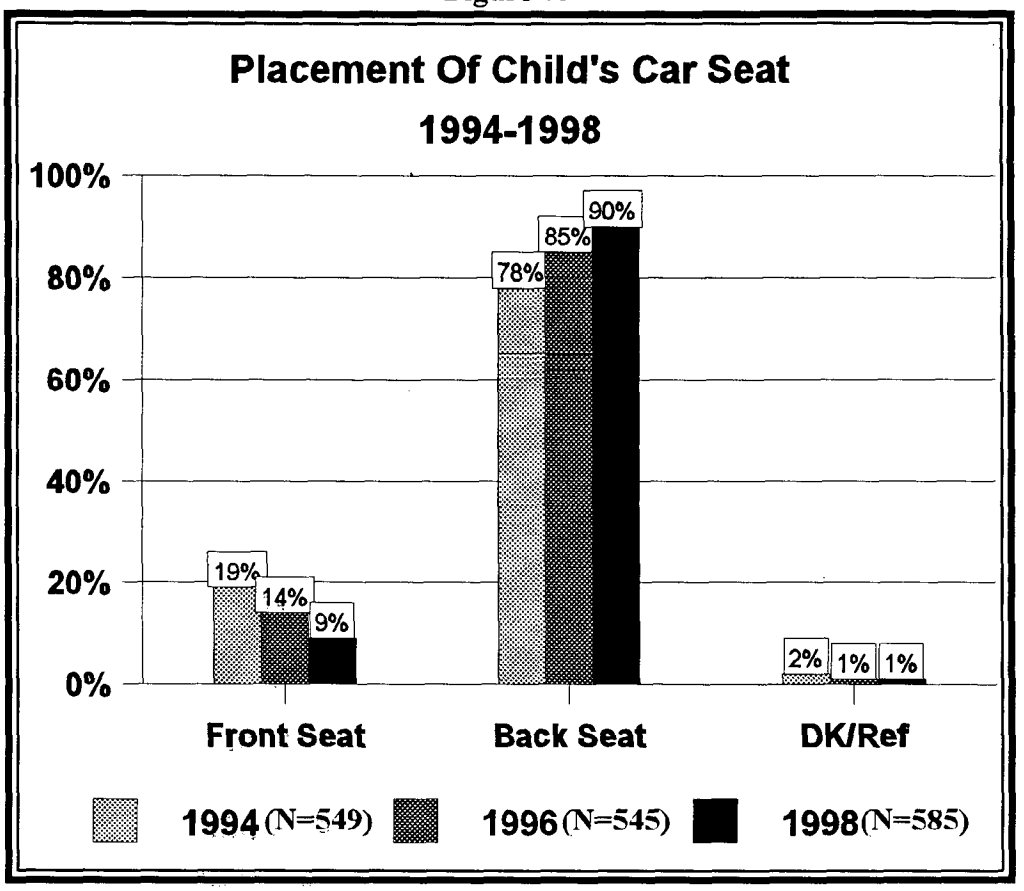
Qx: *When (he/she) is fastened in the child car seat, are there straps over both shoulders, a strap across only one shoulder, or are there no straps over either shoulder?*

Qx: *When you are driving and (he/she) is riding in the child car seat, is it usually front facing or rear facing?*

Base: *Child at least on occasion rides in a child car seat.*

Children riding in car seats increasingly are being placed in the back. Whereas 78% reportedly rode in the back seat in 1994, the figure rose to 85% in 1996 and then 90% in 1998.

Figure 83

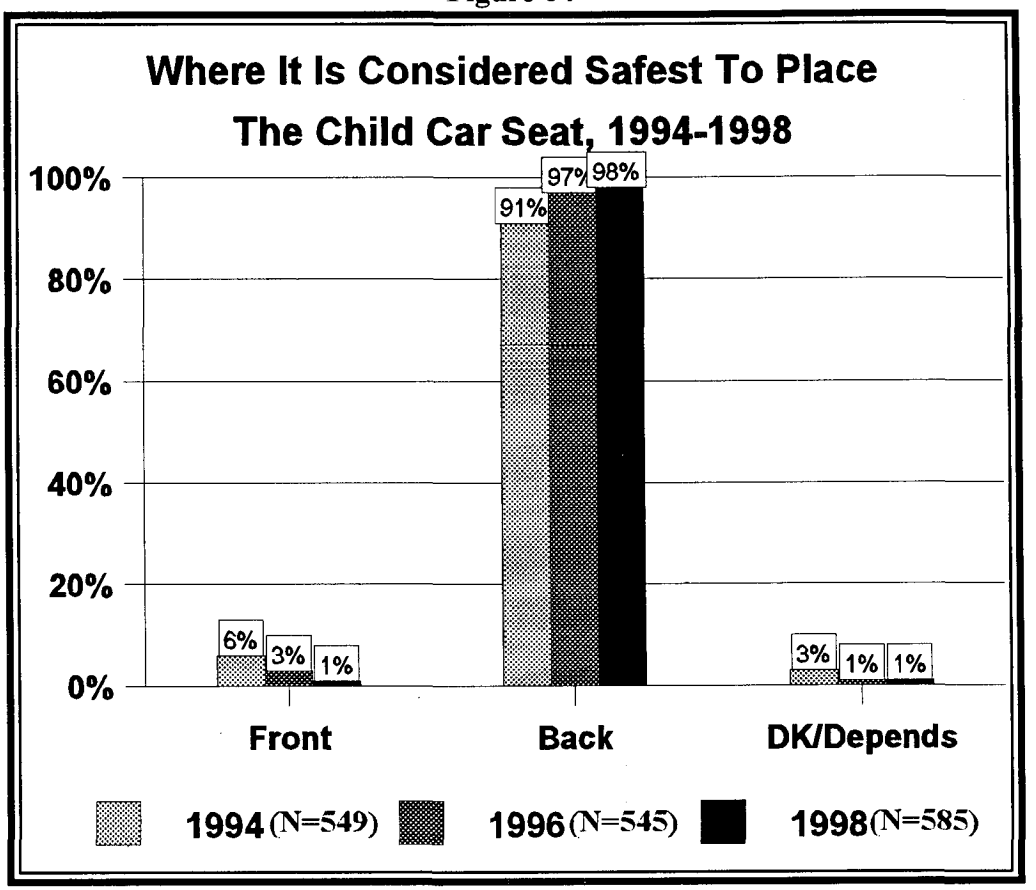


Qx: *When you are driving and (he/she) rides in the child car seat, is it usually in the front seat or the back seat?*

Base: *Child at least on occasion rides in a child car seat.*

Whereas 91% of parents/caregivers in 1994 knew that the back seat was the safest location to place a child car seat in the vehicle, the figure rose to 97% in 1996 and 98% in 1998.

Figure 84

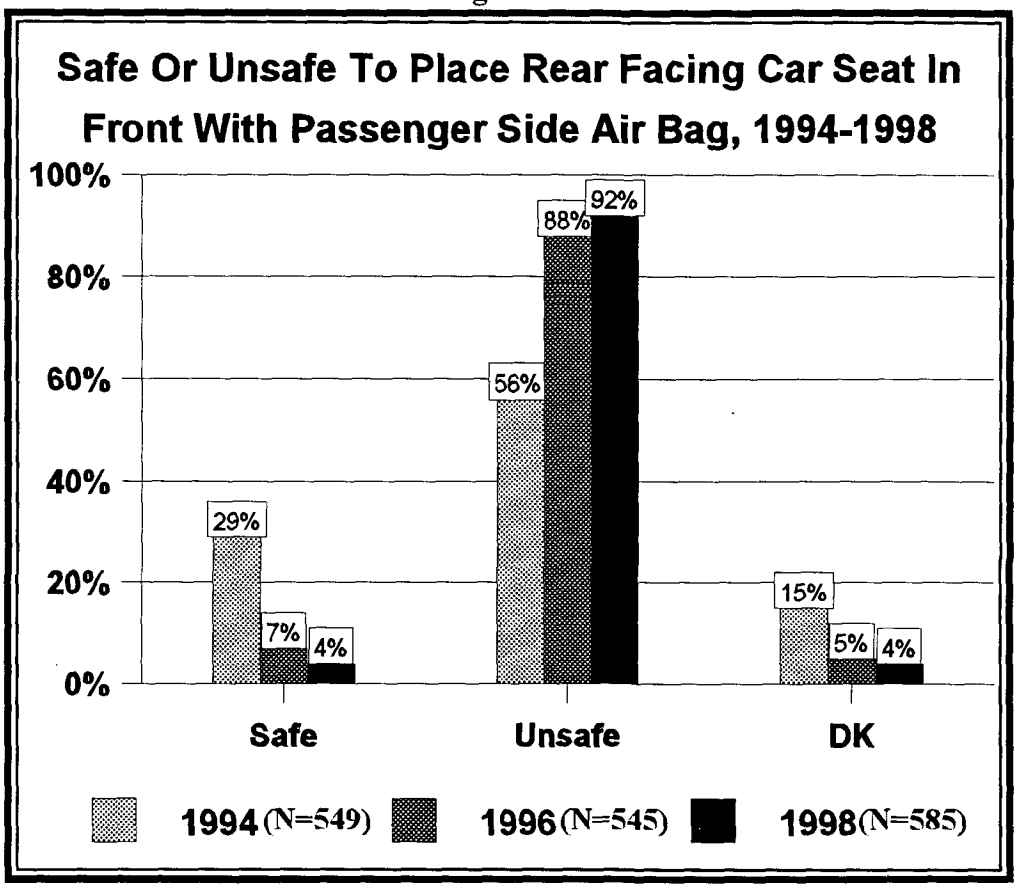


Qx: *Where would you say it is safest to place a child car seat in the vehicle . . . in the front seat or the back seat?*

Base: *Child at least on occasion rides in a child car seat.*

In recent years, far more people have become aware of the danger of placing a rear facing infant seat in the front seat of a vehicle having a passenger side air bag. Whereas only 56% of parents/caregivers in 1994 knew that this was an unsafe action, 88% considered it unsafe in 1996 and 92% considered it unsafe in 1998.

Figure 85



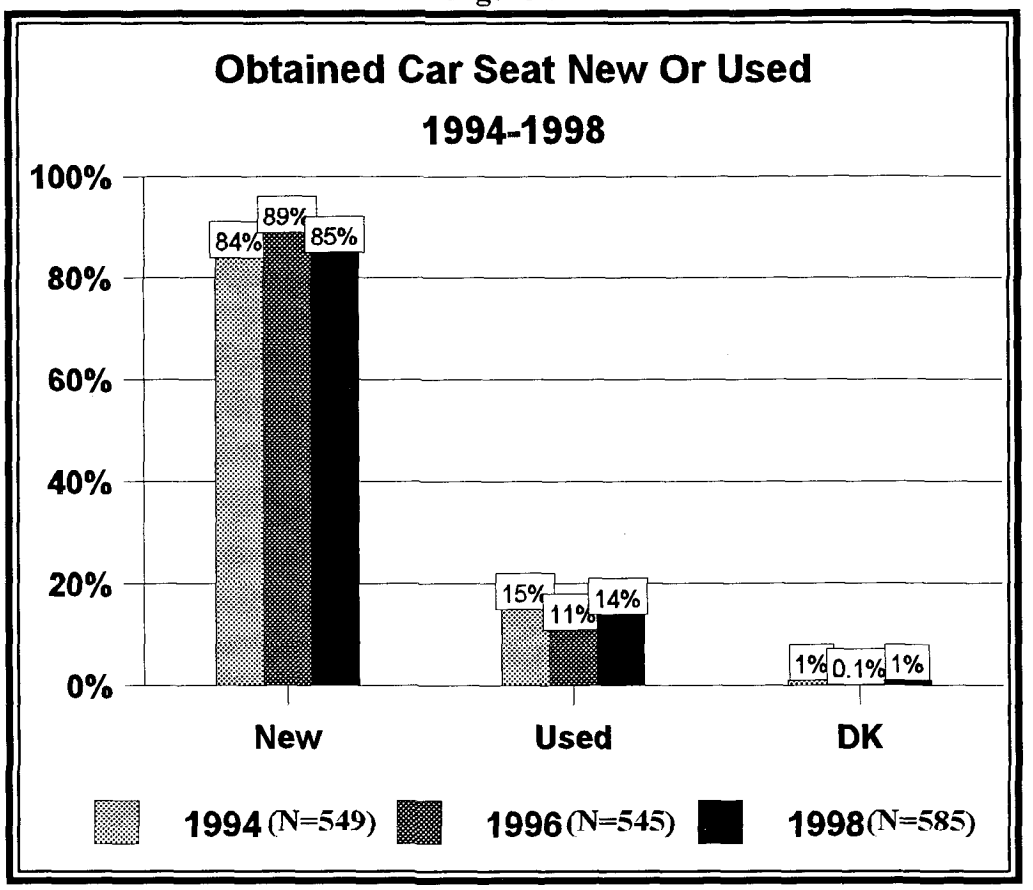
Qx: *Some child car seats are designed so that the child faces backward to the rear of the motor vehicle. Suppose a child is riding in a child car seat facing backward. If the vehicle has a passenger side air bag, is it safe or unsafe to have the child car seat in the front seat?*

Base: *Child at least on occasion rides in a child car seat.*

Acquisition of Car Seat

Eighty-five percent of parents/caregivers in 1998 reported that they obtained the car seat new, compared to 89% in 1996 and 84% in 1994.

Figure 86

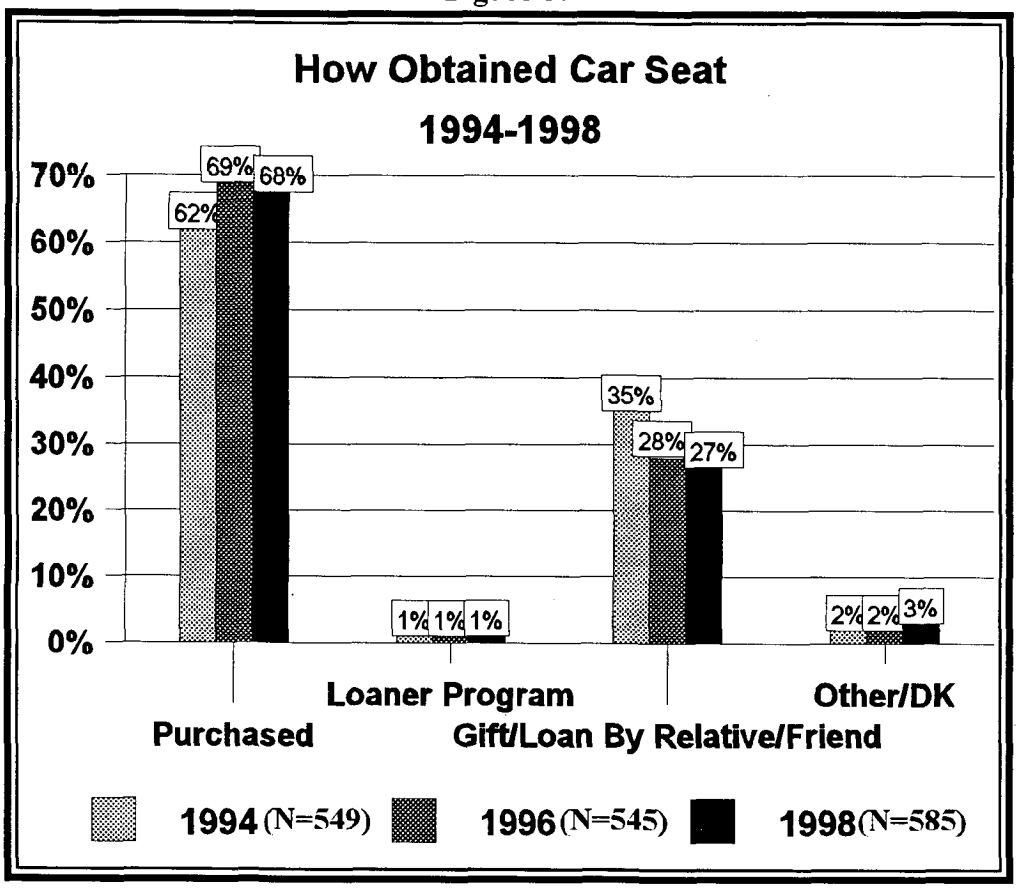


Qx: *Now thinking about the child car seat the (AGE) usually rides in, did you get the child car seat new or used?*

Base: *Child at least on occasion rides in a child car seat.*

There was no noticeable difference between the past two surveys in whether or not parents/caregivers had purchased the car seat. In both 1998 and 1996, about two-thirds of parents/caregivers had purchased the car seat, while slightly more than one-quarter had received it as a gift or loaner from a relative or friend.

Figure 87



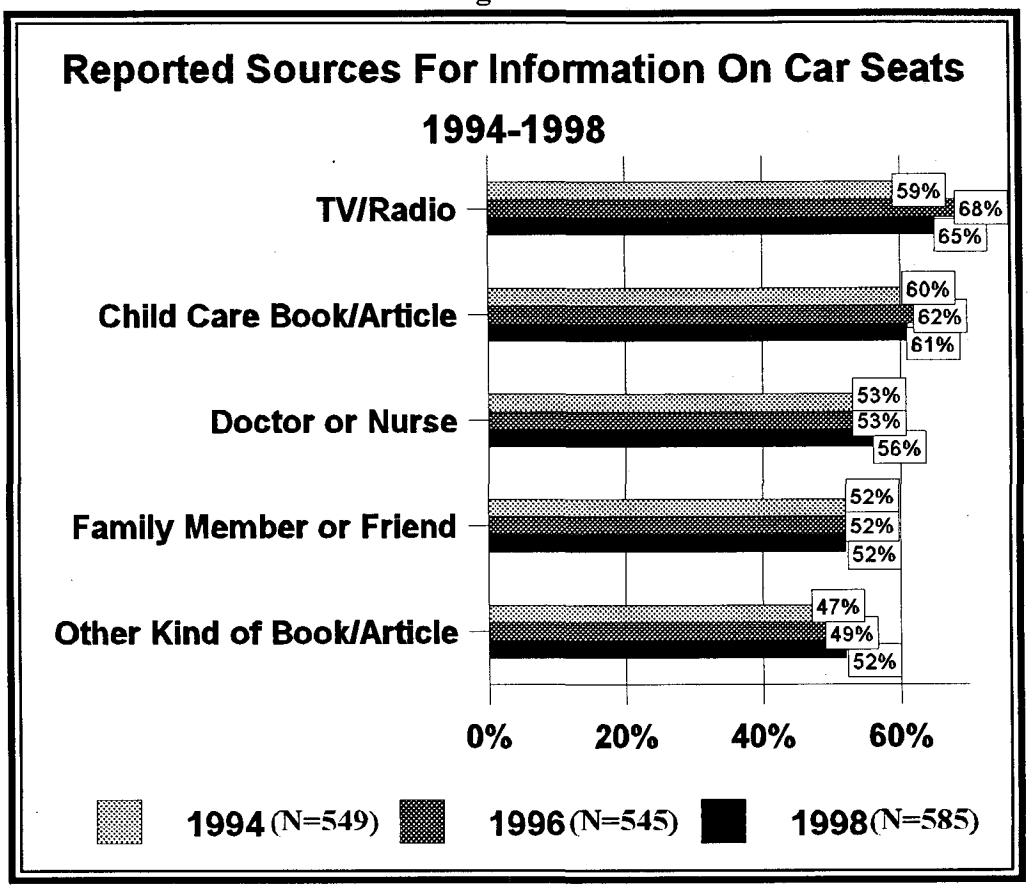
Qx: *Did you purchase the child car seat, did you get it as a gift or loaner from a relative or friend, or did you get it from a loaner program?*

Base: *Child at least on occasion rides in a child car seat.*

Sources For Information On Car Seats

Little to no difference emerged across years in reported sources for information on car seats. The largest observed difference was an increase in those who cited tv and/or radio: from 59% in 1994 to 68% in 1996 and 65% in 1998. Relatively few persons identified a safety hotline as an information source in either 1994 (3%), 1996 (2%), or 1998 (2%).

Figure 88



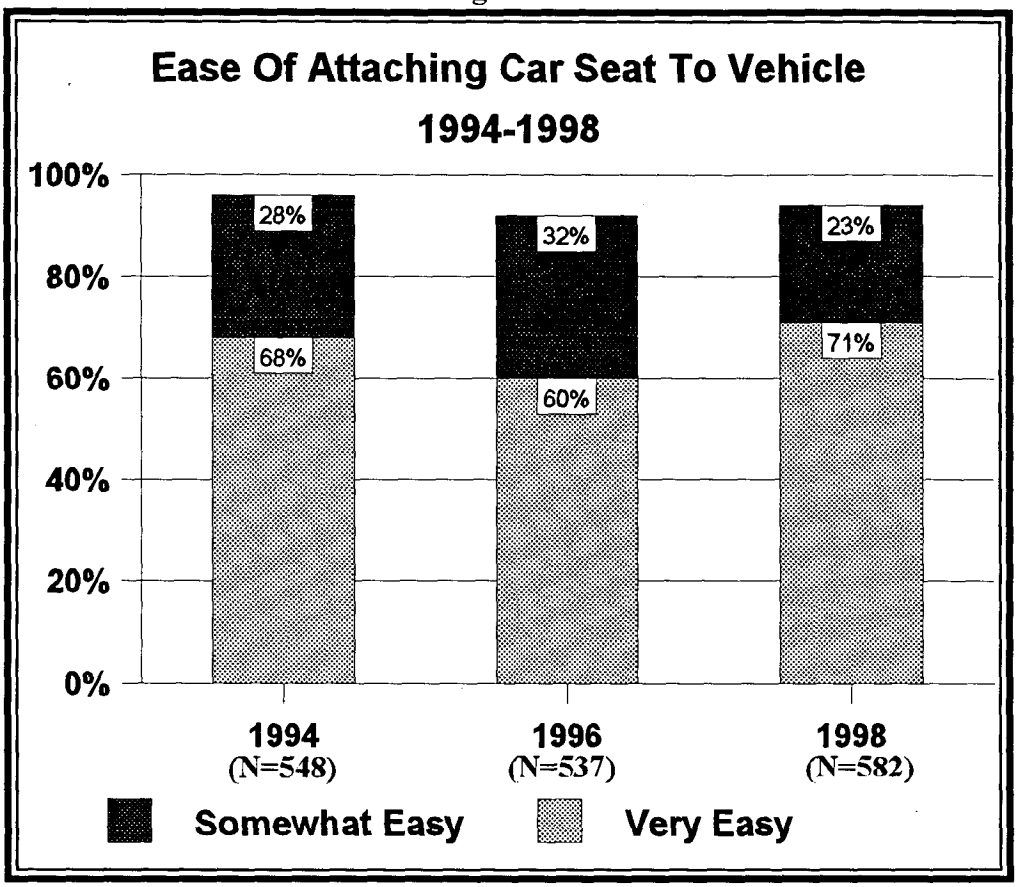
Qx: *Did you ever read or hear of any information or receive any advice about the need to use child car seats from any of the following sources? Did you get any information from . . ?*

Base: *Child at least on occasion rides in a child car seat.*

Ease of Use

Compared to 1994 (68%), parents/caregivers in 1996 (60%) were less likely to say that it was very easy to attach the child car seat to the vehicle they usually drive. The 1998 figure rebounded to slightly above the 1994 figure as 71% of parents/caregivers in that year answered that attaching the car seat to the vehicle was very easy.

Figure 89

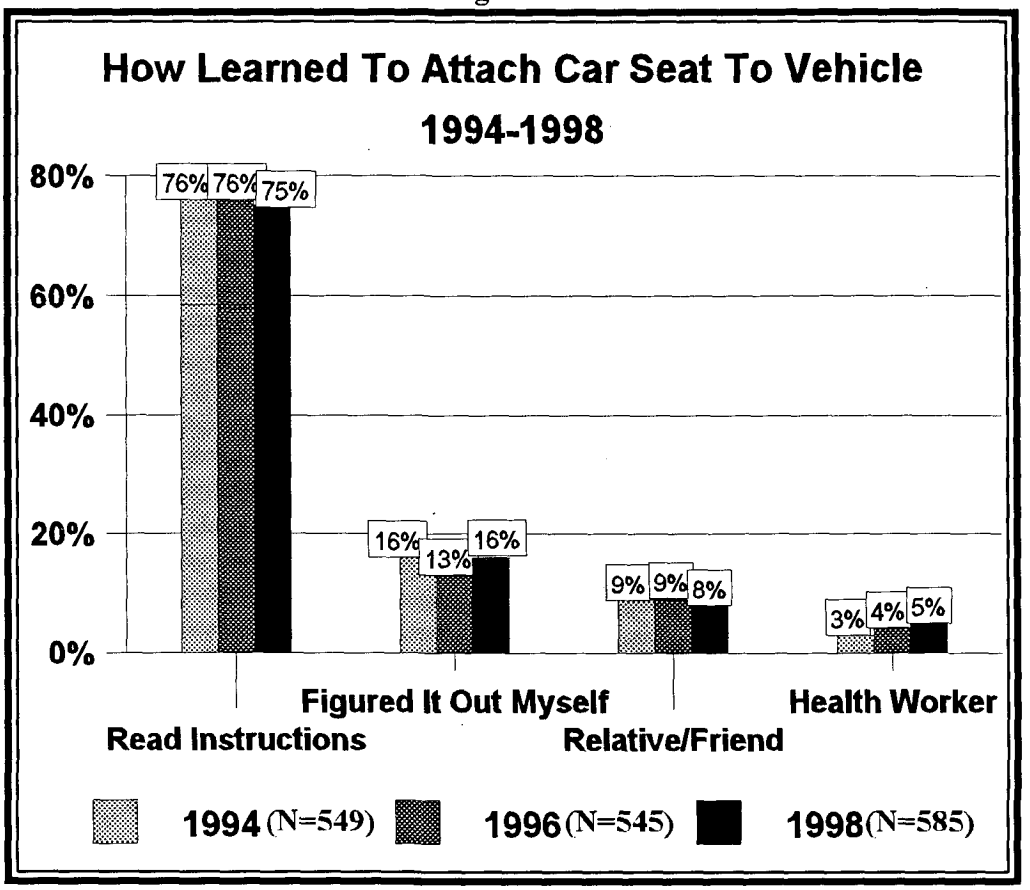


Qx: *How easy is it for you to attach the child car seat to the vehicle you usually drive . . . very easy, somewhat easy, or not easy at all?*

Base: *Child at least on occasion rides in a child car seat, and the car seat did not come attached to the vehicle.*

There was little difference across the survey years in the reported source for learning how to attach the car seat to the vehicle. For each survey, about three-quarters of parents/caregivers said that they determined how to attach the seat by reading the instructions.

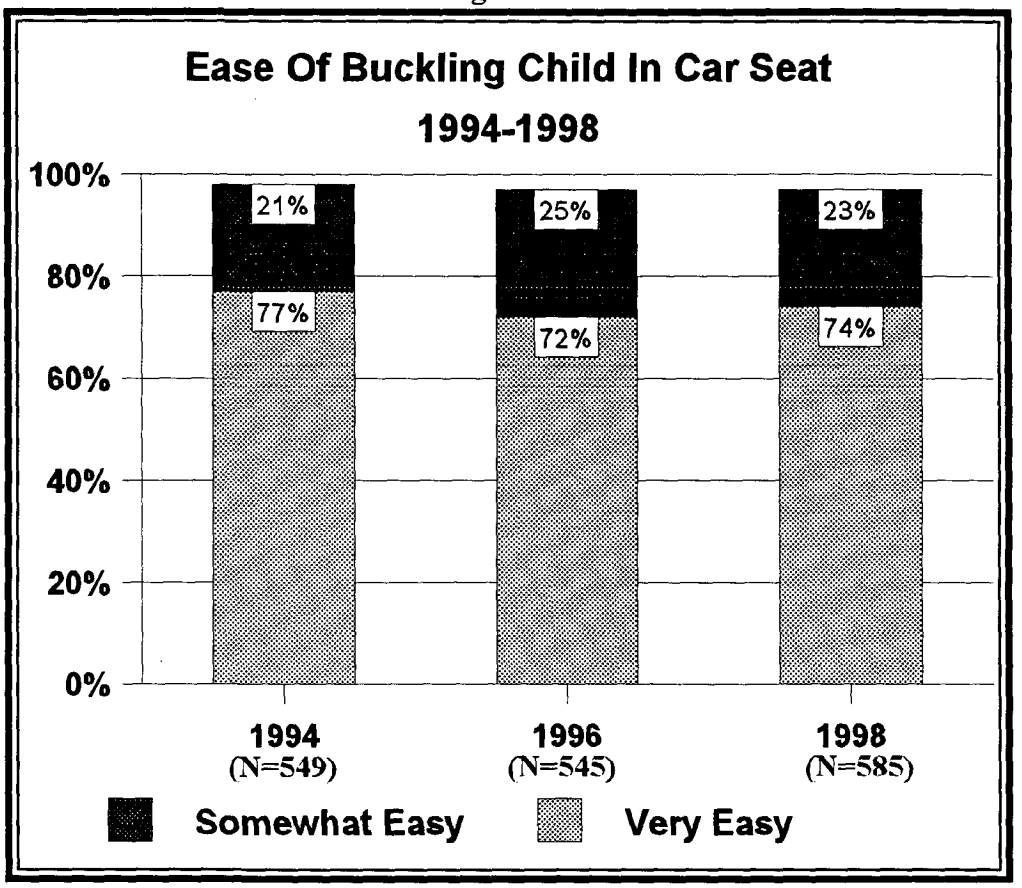
Figure 90



Qx: How did you learn to attach the child car seat to the vehicle?
Base: Child at least on occasion rides in a child car seat.
Total responses per year exceeds 100% due to multiple responses.

More than seven-in-ten parents/caregivers considered it very easy to properly buckle their child into the car seat regardless of the survey year.

Figure 91



Qx: *How easy is it for you to properly buckle your child into the child car seat?*
Base: *Child at least on occasion rides in a child car seat.*

Part Time Car Seat Users

In each survey year, only a small number of parents/caregivers reported that the selected child was a car seat user, but not on every trip (between 100 and 150 cases each year). Because of the small numbers, readers should exercise caution when reviewing the findings as most differences between years were not statistically significant (see chart in Appendix A).

In 1998, parents/caregivers were less prone than in previous years to attribute occasional non-use of a car seat by the child to the shortness of the trip, being in a hurry, and the child not liking the car seat. Unavailability of the car seat became the second most frequently cited reason for non-use.

Table 9
Reasons Child Does Not Ride In Car Seat: Part Time Users
1994-1998

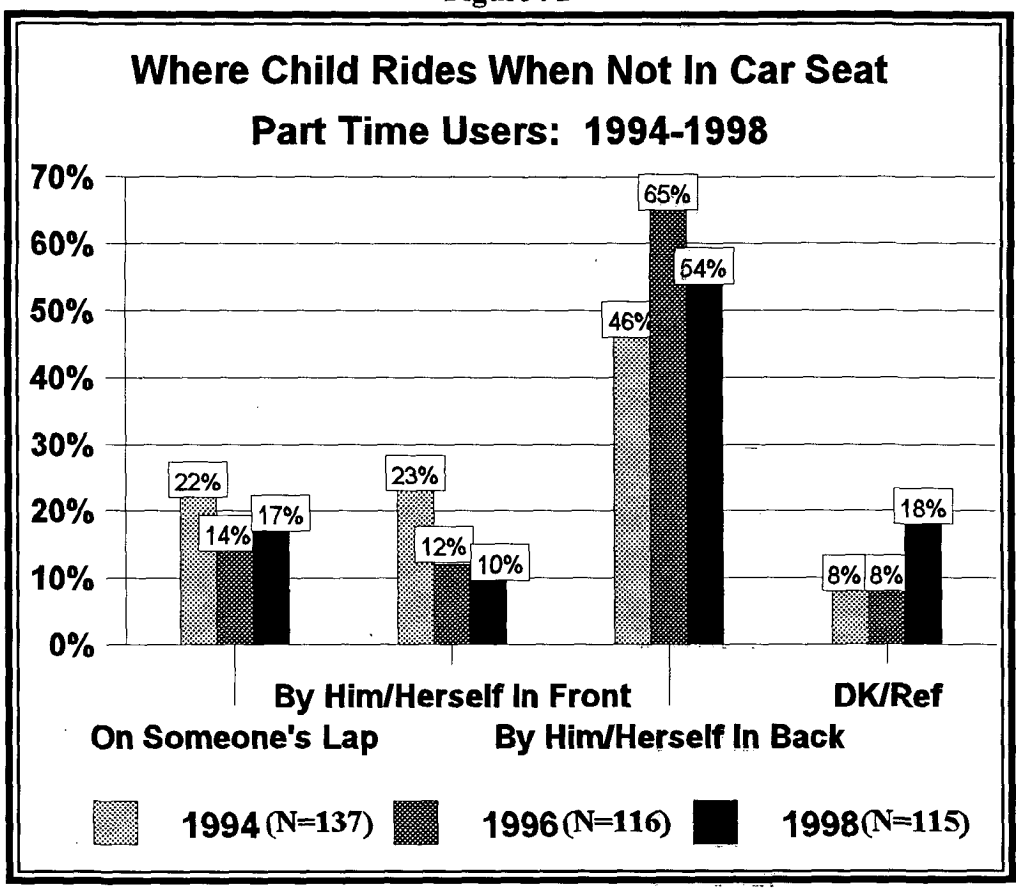
Qx: ***Please answer yes or no to each of the following statements. When my (AGE) doesn't ride in a child car seat, it is sometimes because . . . . . .***

Base: ***Child uses a car seat, but not all of the time.***

Reason	1994 (N=137)	1996 (N=116)	1998 (N=115)
Child Doesn't Like It	37%	39%	31%
Seat Isn't Available	28%	26%	30%
Only Short Time In Car	46%	39%	29%
Child Won't Stay In It	29%	25%	24%
No Room For Seat	30%	16%	21%
S/He Is Too Big	20%	19%	15%
We Are In A Hurry	28%	25%	15%
Other	13%	7%	5%

When not in the car seat, the interviewers asked the parents/caregivers if the child usually sat on someone's lap, by him/herself in the front seat, or in the back seat. Most responded that the child typically sat in the back, although the obtained figure was lower in 1998 (54%) than in 1996 (65%). In 1998, parents/caregivers were more than twice as likely not to respond to the question at all compared to the previous two survey years.

Figure 92

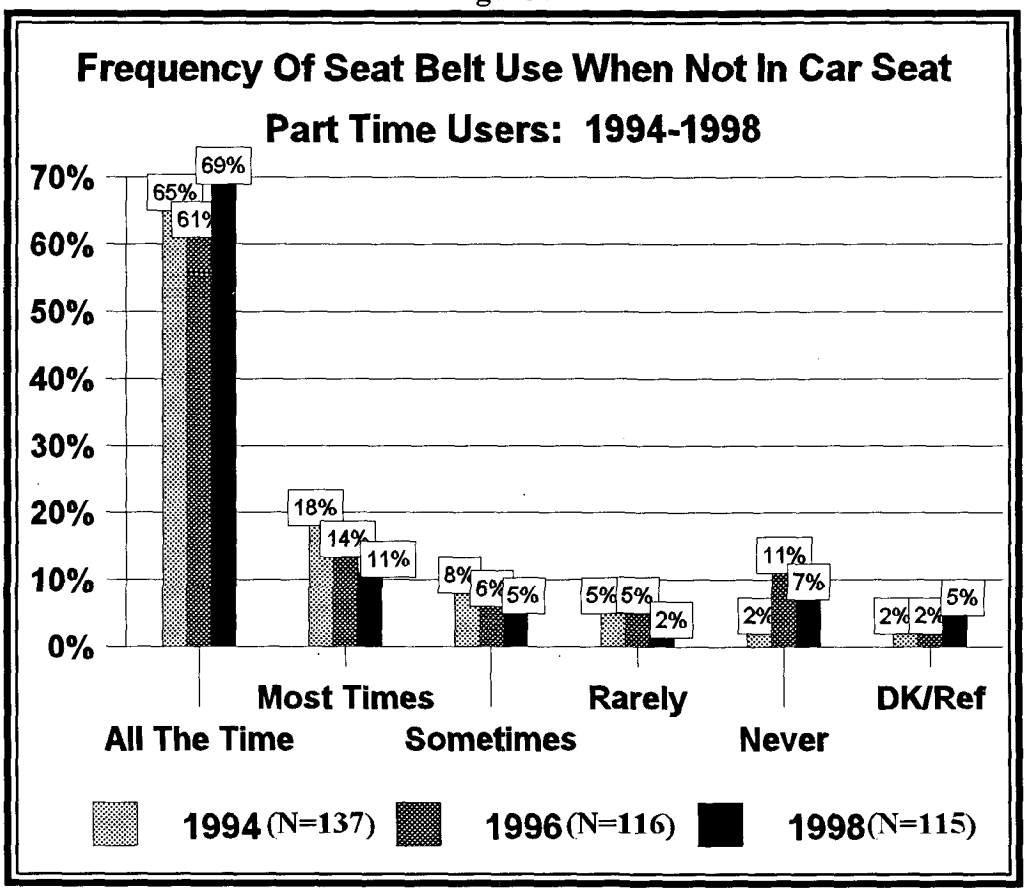


Qx: *When the (AGE) doesn't ride in the child car seat when riding with you, does he/she usually sit on someone's lap, sit by him/herself in the front seat, or sit in the back seat?*

Base: *Child uses a car seat, but not all of the time.*

In 1998, most parents/caregivers (69%) continued to report that the child used a seat belt "all the time" when not riding in a car seat, with some suggestions that there had been an increase from two years earlier (61%).

Figure 93



Qx: *When the (AGE) doesn't ride in the child car seat when riding with you, how often is he/she buckled in a seat belt?*

Base: *Child uses a car seat, but not all of the time.*

Never Users Of Car Seats

Those children under age 6 who never used car seats generally were viewed as too big for the seats and had been moved to seat belts. This finding was consistent across survey years.

Table 10
Reasons Child Never Rides In Car Seat
1994-1998

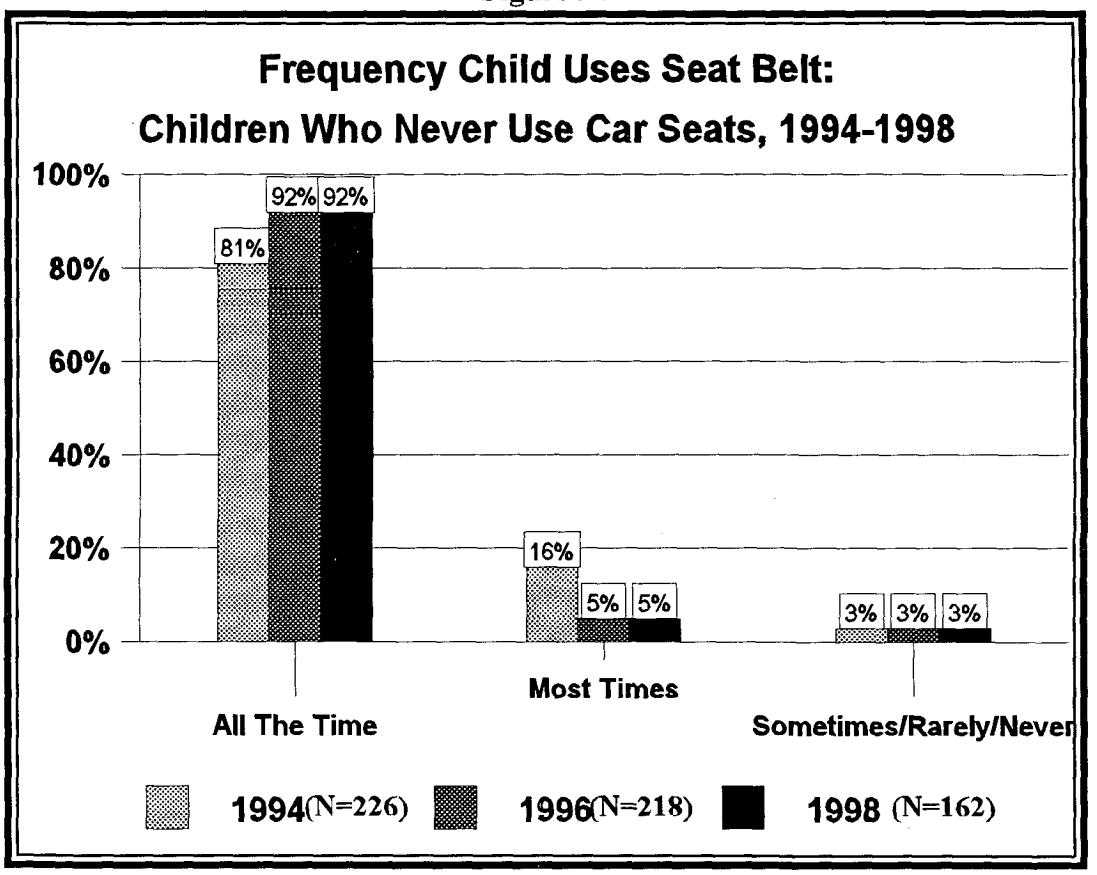
Qx: ***Please answer yes or no to each of the following statements to indicate if this is a reason why the (AGE) does not ride in a child car seat. My (AGE) doesn't ride in a child car seat because . . . . . .***

Base: ***Child under 6 never uses a car seat.***

Reason	1994 (N=226)	1996 (N=218)	1998 (N=162)
Child Uses Seat Belt	94%	96%	94%
Child Is Too Big	77%	86%	84%
Child Doesn't Have One	27%	31%	25%
Child Doesn't Like It	22%	16%	21%
Child Won't Stay In It	20%	11%	15%
Not Enough Room In Car	16%	12%	11%
Other	10%	3%	8%

There was virtually no change between 1996 and 1998 in reported seat belt use for children who never use car seats. Reported usage in both those years was somewhat higher than in 1994.

Figure 94

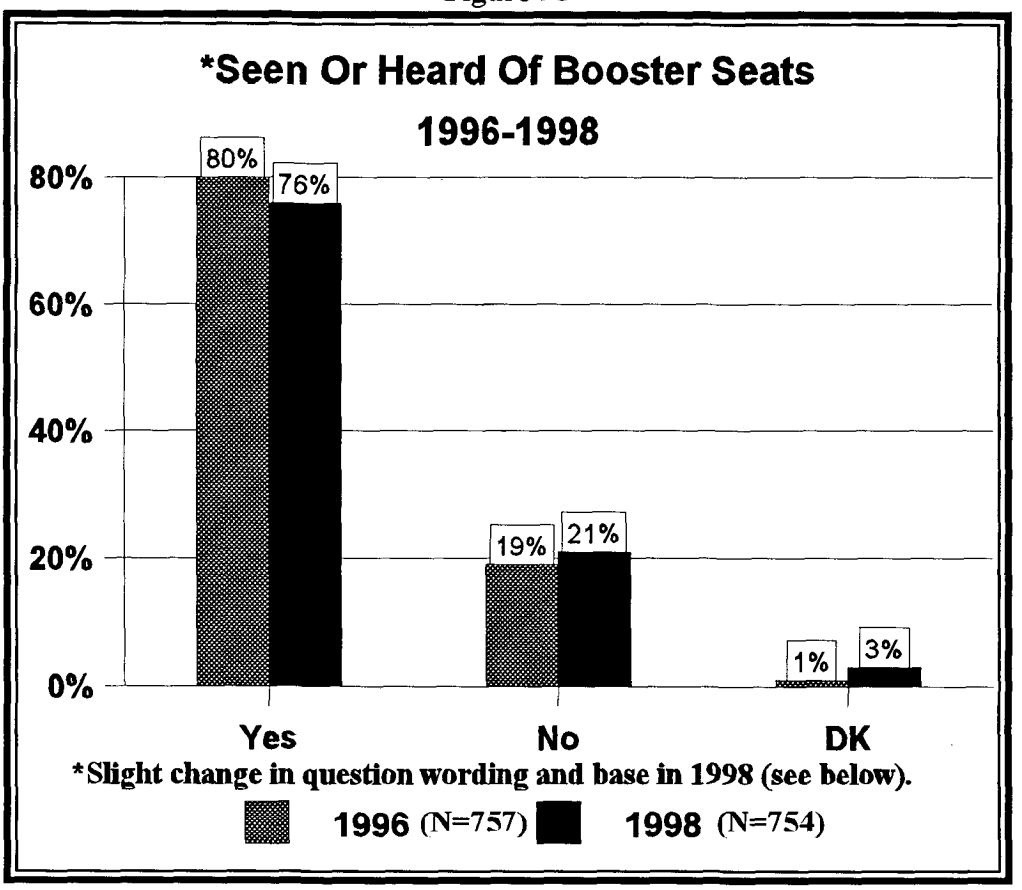


Qx: *How often does he/she use a seat belt?*
Base: *Child under 6 never uses a car seat.*

Booster Seats

In 1994, booster seat use was determined by asking respondents if there were straps over both shoulders, one shoulder, or neither shoulder. The term "booster seat" was not used. In 1996, questions were added asking if parents/caregivers had ever heard of booster seats, and whether they had used one. Questions about concerns over the safety of booster seats were added in 1998. There was no evidence of increased awareness of booster seats in 1998. To the contrary, a smaller percentage in 1998 than in 1996 said they had seen or heard of booster seats. However, the difference was small, and the question wording and base changed slightly from 1996 to 1998.

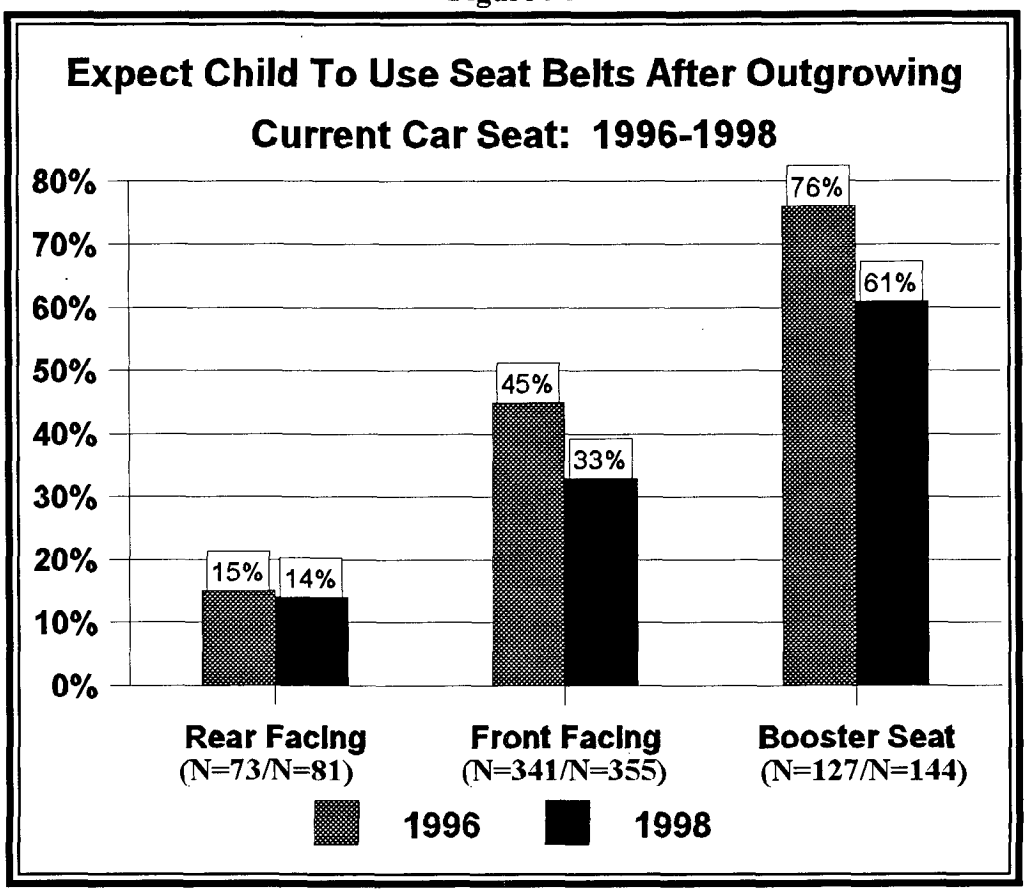
Figure 95



Qx(1996): Have you ever seen or heard of a type of car seat called a booster seat?
Base: Parents/caregivers whose child either currently uses a car seat or had used one some time in the past (98% of parents/caregivers in the sample).
Qx(1998): Before today, had you ever seen or heard of a type of car seat called a booster seat?
Base: Parents/caregivers as defined on page 28.

In both survey years, there were fewer than 100 cases in the sample of infants riding in rear facing seats, with essentially no difference in the small percentage of those children expected to use seat belts after outgrowing their current infant car seat. However, the data suggested that parents/caregivers were more likely in 1998 than in 1996 to consider adding additional intermediate steps (i.e., graduating to another car seat) for older children before having them move to seat belt use.

Figure 96



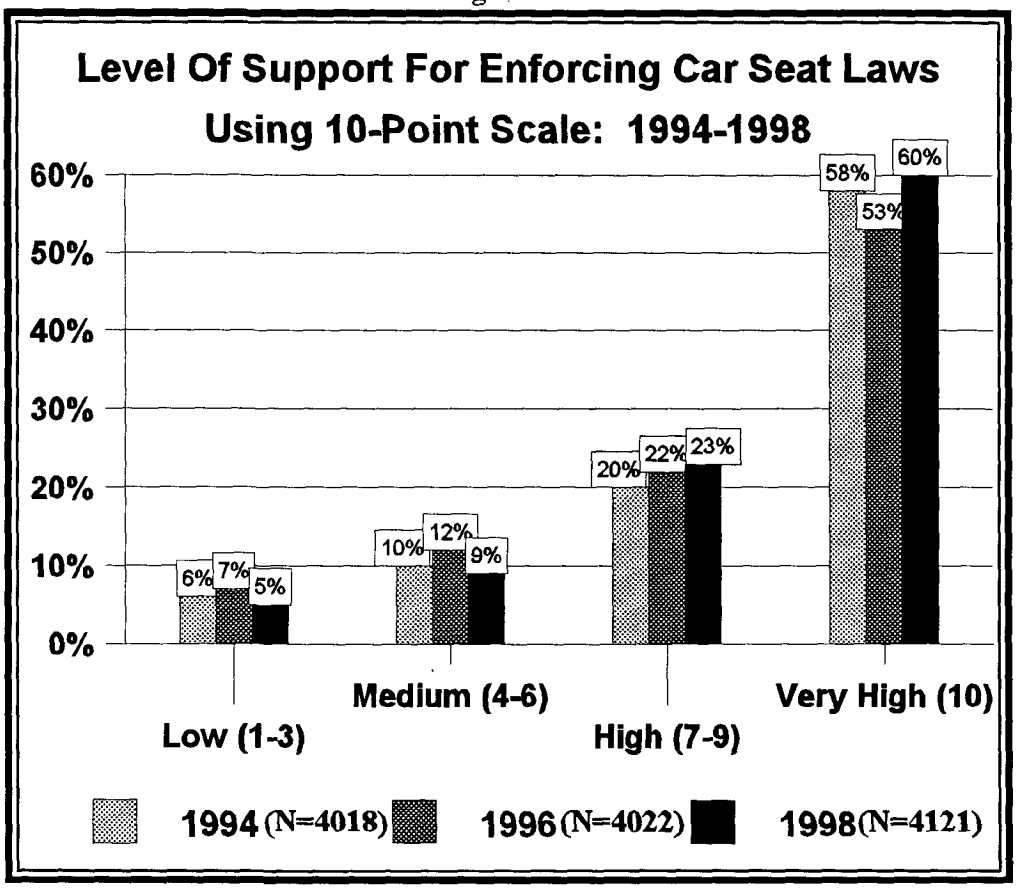
Qx: *When your (AGE) outgrows his/her current child car seat, do you expect him/her to use a different type of car seat, a seat belt or something else?*

Base: *Child at least on occasion rides in a child car seat.*

Support For Enforcing Car Seat Laws

In 1998, 60% of the public believed that police should give a ticket at every opportunity for violations of car seat laws. This compared to 53% in 1996 and 58% in 1994.

Figure 97



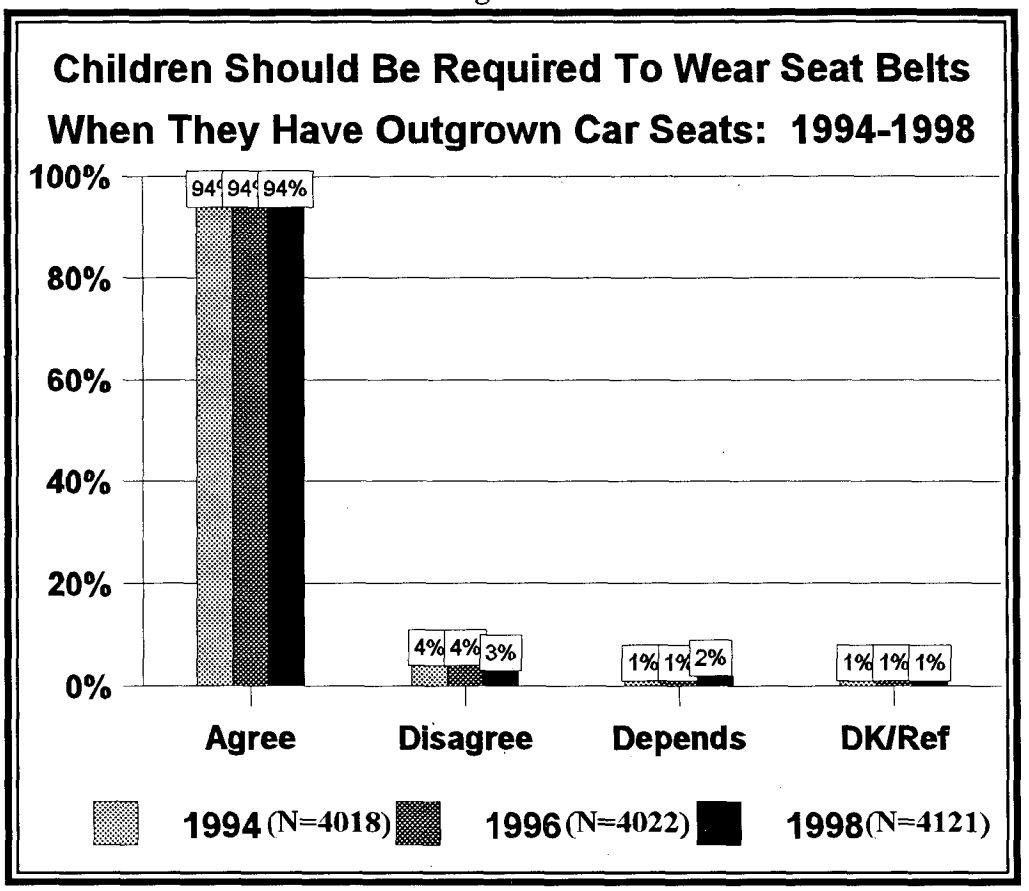
Qx: *How do you personally feel about the police enforcement of child car seat laws? On a scale of 1 to 10, where 1 means police should hardly ever give tickets and 10 means police should give a ticket at every opportunity for violations of child car seat laws, how strict should police enforcement be?*

Base: *Total population age 16+.*

Support For Laws Requiring Seat Belt Use After Child Has Outgrown Car Seat

In each of the survey years, 94% of the public agreed that children who have outgrown child car seats should be required by law to wear seat belts when riding in a vehicle.

Figure 98



Qx(1994/1996): What about when children under the age of 6 outgrow a child car seat? Do you agree or disagree that they should be required by law to wear seat belts when riding in a vehicle?

Base: Total population age 16+.

Qx(1998): What about when children outgrow a child car seat? Do you agree or disagree that they should be required by law to wear seat belts when riding in a vehicle?

Base: Total population age 16+.

1998 SURVEY RESULTS

APPENDIX A

*PRECISION OF SAMPLE ESTIMATES

***Reprinted from:**

Boyle, J. and K. Sharp. 1998 Motor Vehicle Occupant Safety Survey: Methodology Report. DOT-HS-809-029. Washington DC: U.S. Department of Transportation, National Highway Traffic Safety Administration.

Precision of Sample Estimates

The objective of the sampling procedures used on this study was to produce a random sample of the target population. A random sample shares the same properties and characteristics of the total population from which it is drawn, subject to a certain level of sampling error. This means that with a properly drawn sample we can make statements about the properties and characteristics of the total population within certain specified limits of certainty and sampling variability.

The confidence interval for sample estimates of population proportions, using simple random sampling without replacement, is calculated by the following formula:

$$\text{var}(x) = z \sqrt{\frac{p(q)}{n-1}}$$

Where:

var (x)	=	the expected sampling error of the mean of some variable, expressed as a proportion
p	=	some proportion of the sample displaying a certain characteristic or attribute
q	=	(1 - p)
z	=	the standardized normal variable, given a specified confidence level (1.96 for samples of this size).
n	=	the size of the sample

The sample sizes for the surveys are large enough to permit estimates for subsamples of particular interest. Table 5, on the next page, presents the expected size of the sampling error for specified sample sizes of 8,000 and less, at different response distributions on a categorical variable. As the table shows, larger samples produce smaller expected sampling variances, but there is a constantly declining marginal utility of variance reduction per sample size increase.

TABLE 5
Expected Sampling Error (Plus or Minus)
At the 95% Confidence Level
(Simple Random Sample)

Size of Sample or Subsample	Percentage of the Sample or Subsample Giving A Certain Response or Displaying a Certain Characteristic for Percentages Near: 10 or 90	20 or 80	30 or 70	40 or 60	50
8,000	0.7	0.9	1.0	1.1	1.1
4,000	0.9	1.2	1.4	1.5	1.5
3,000	1.1	1.4	1.6	1.8	1.8
2,000	1.3	1.8	2.0	2.1	2.2
1,500	1.5	2.0	2.3	2.5	2.5
1,300	1.6	2.2	2.5	2.7	2.7
1,200	1.7	2.3	2.6	2.8	2.8
1,100	1.8	2.4	2.7	2.9	3.0
1,000	1.9	2.5	2.8	3.0	3.1
900	2.0	2.6	3.0	3.2	3.3
800	2.1	2.8	3.2	3.4	3.5
700	2.2	3.0	3.4	3.6	3.7
600	2.4	3.2	3.7	3.9	4.0
500	2.6	3.5	4.0	4.3	4.4
400	2.9	3.9	4.5	4.8	4.9
300	3.4	4.5	5.2	5.6	5.7
200	4.2	5.6	6.4	6.8	6.9
150	4.8	6.4	7.4	7.9	8.0
100	5.9	7.9	9.0	9.7	9.8
75	6.8	9.1	10.4	11.2	11.4
50	8.4	11.2	12.8	13.7	14.0

NOTE: Entries are expressed as percentage points (+ or -)

However, the sampling design for this study included a separate, concurrently administered oversample of youth and young adults (age 16-39). Both the cross-sectional sample and the oversample of the youth/younger adult population were drawn as simple random samples; however, the disproportionate sampling of the age 16-39 population introduces a design effect that makes it inappropriate to assume that the sampling error for total sample estimates will be identical to those of a simple random sample.

In order to calculate a specific interval for estimates from a sample, the appropriate statistical formula for calculating the allowance for sampling error (at a 95% confidence interval) in a stratified sample with a disproportionate design is:

$$ASE = 1.96 \sqrt{\sum_{h}^{g} [W^2 \{(1-f_h)(S^2_h/n_h - 1)\}]}$$

h^{1-g}

where:

ASE	=	allowance for sampling error at the 95% confidence level;
h	=	a sample stratum;
g	=	number of sample strata;
w_h	=	stratum h as a proportion of total population;
f_h	=	the sampling fraction for group h -- the number in the sample divided by the number in the universe;
s^2_h	=	the variance in the stratum h -- for proportions this is equal to $p_h (1.0 - p_h)$;
n_h	=	the sample size for the stratum h.

Although Table 5 above provides a useful approximation of the magnitude of expected sampling error, precise calculation of allowances for sampling error requires the use of this formula. To assess the design effect for sample estimates, we calculated sampling errors for the disproportionate sample for a number of key variables using the above formula. These estimates were then compared to the sampling errors for the same variables, assuming a simple random sample of the same size. The two strata (h^1 and h^2) in the disproportionate sample were all respondents age 16-39 and all respondents age 40 and over respectively. The proportion for the 16-39 year old stratum (w^1) was 45.7 percent while the proportion for the 40 and over stratum (w^2) was 54.3 percent.

As shown in Table 6 below, the disproportionate sampling increases the confidence interval by about 2 percent, compared to a simple random sample of the same size. This means that sample design introduces almost no measurable loss in sampling precision for total population

estimates, while increasing the precision of sampling estimates for the target population aged 16-39 years old. Since the difference in sampling precision between the stratified disproportion sample and a simple random sample is less than one tenth of percentage point in each case, the sampling error table for a simple random sample will provide a reasonable approximation of the precision of sampling estimates in the survey.

TABLE 6
Design Effect on Confidence Intervals for Sample Estimates Between Disproportionate Sample Used in Occupant Protection Survey And a Proportionate Sample of Same Size

	---------- CONFIDENCE INTERVALS ---------- PERCENTAGE POINTS ± AT 95% CONFIDENCE LEVEL		
	HYPOTHETICAL PROPORTIONATE SAMPLING*	CURRENT DIS-PROPORTIONATE SAMPLING	DIFFERENCE IN CONFIDENCE INTERVALS ABOUT ESTIMATES
USE NEW VARIABLES			
Driven in the past year	*.61*	*.63*	*+3.2%*
Drunk alcohol in past year	*1.39*	*1.37*	*-1.3%*
Always use safety belt	*.93*	*.94*	*+0.7%*
Dislike seat belts	*1.55*	*1.61*	*+3.4%*
Always use passenger belt (front)	*1.40*	*1.40*	*0.0%*
Favor (a lot) seat belt laws	*1.45*	*1.48*	*+2.0%*
Secondary enforcement	*1.41*	*1.44*	*+2.0%*
Ever ticketed by police for seatbelt	*.85*	*.83*	*- 2.6%*
Recall Crash dummies	*1.11*	*1.17*	*+5.0%*
Ever injured in vehicle accident	*.94*	*.97*	*+2.9%*
Drives a car for work almost every day	*2.64*	*2.76*	*+4.3%*
Set a good example for others (reason for using seat belts)	*1.43*	*1.47*	*+2.6%*
Driver-side only Air Bag in vehicle	*2.04*	*2.08*	*+1.6%*
Race: Black/African American	*0.66*	*0.65*	*-0.5%*
Ethnicity: Hispanic	*0.63*	*0.61*	*-4.0%*
Male/Female	*1.08*	*1.10*	*+2.2%*
AVERAGE DIFFERENCE IN CONFIDENCE INTERVALS			*+1.94%*

* Total sample proportions using SRS formula

Estimating Statistical Significance

The estimates of sampling precision presented in the previous section yield confidence bands around the sample estimates, within which the true population value should lie. This type of sampling estimate is appropriate when the goal of the research is to estimate a population distribution parameter. However, the purpose of some surveys is to provide a comparison of population parameters estimated from independent samples (e.g. annual tracking surveys) or between subsets of the same sample. In such instances, the question is not simply whether or not there is any difference in the sample statistics which estimate the population parameter, but rather is the difference between the sample estimates statistically significant (i.e., beyond the expected limits of sampling error for both sample estimates).

To test whether or not a difference between two sample proportions is statistically significant, a rather simple calculation can be made. Call the total sampling error (i.e., var (x) in the previous formula) of the first sample s1 and the total sampling error of the second sample s2. Then, the sampling error of the difference between these estimates is sd which is calculated as:

$$sd = \sqrt{s1^2 + s2^2}$$

Any difference between observed proportions that exceeds sd is a statistically significant difference at the specified confidence interval. Note that this technique is mathematically equivalent to generating standardized tests of the difference between proportions.

An illustration of the pooled sampling error between subsamples for various sizes is presented in Table 7. This table can be used to indicate the size of difference in proportions between drivers and non-drivers or other subsamples that would be statistically significant.

TABLE 7. Pooled Sampling Error Expressed as Percentages For Given Sample Sizes (Assuming P=Q)																	
Sample Size																	
4000	14.1	10.0	7.1	5.9	5.1	4.7	4.3	4.0	3.8	3.6	3.5	3.0	2.7	2.5	2.4	2.3	2.2
3500	14.1	10.0	7.1	5.9	5.2	4.7	4.3	4.1	3.8	3.7	3.5	3.0	2.7	2.6	2.4	2.3	
3000	14.1	10.0	7.2	5.9	5.2	4.7	4.4	4.1	3.9	3.7	3.6	3.1	2,8	2.7	2.5		
2500	14.1	10.0	7.2	6.0	5.3	4.8	4.5	4.2	4.0	3.8	3.7	3.2	2.9	2.8			
2000	14.2	10.1	7.3	6.1	5.4	4.9	4.6	4.3	4.1	3.9	3.8	3.3	3.1				
1500	14.2	10.2	7.4	6.2	5.5	5.1	4.7	4.5	4.3	4.1	4.0	3.6					
1000	14.3	10.3	7.6	6.5	5.8	5.4	5.1	4.8	4.7	4.5	4.4						
900	14.4	10.4	7.7	6.5	5.9	5.5	5.2	4.9	4.8	4.6							
800	14.4	10.4	7.8	6.6	6.0	5.6	5.3	5.1	4.9								
700	14.5	10.5	7.9	6.8	6.1	5.7	5.5	5.2									
600	14.6	10.6	8.0	6.9	6.3	5.9	5.7										
500	14.7	10.8	8.2	7.2	6.6	6.2											
400	14.8	11.0	8.5	7.5	6.9												
300	15.1	11.4	9.0	8.0													
200	15.6	12.1	9.8														
100	17.1	13.9															
50	19.8																
	50	**100**	**200**	**300**	**400**	**500**	**600**	**700**	**800**	**900**	**1000**	**1500**	**2000**	**2500**	**3000**	**3500**	**4000**
Sample Size																	