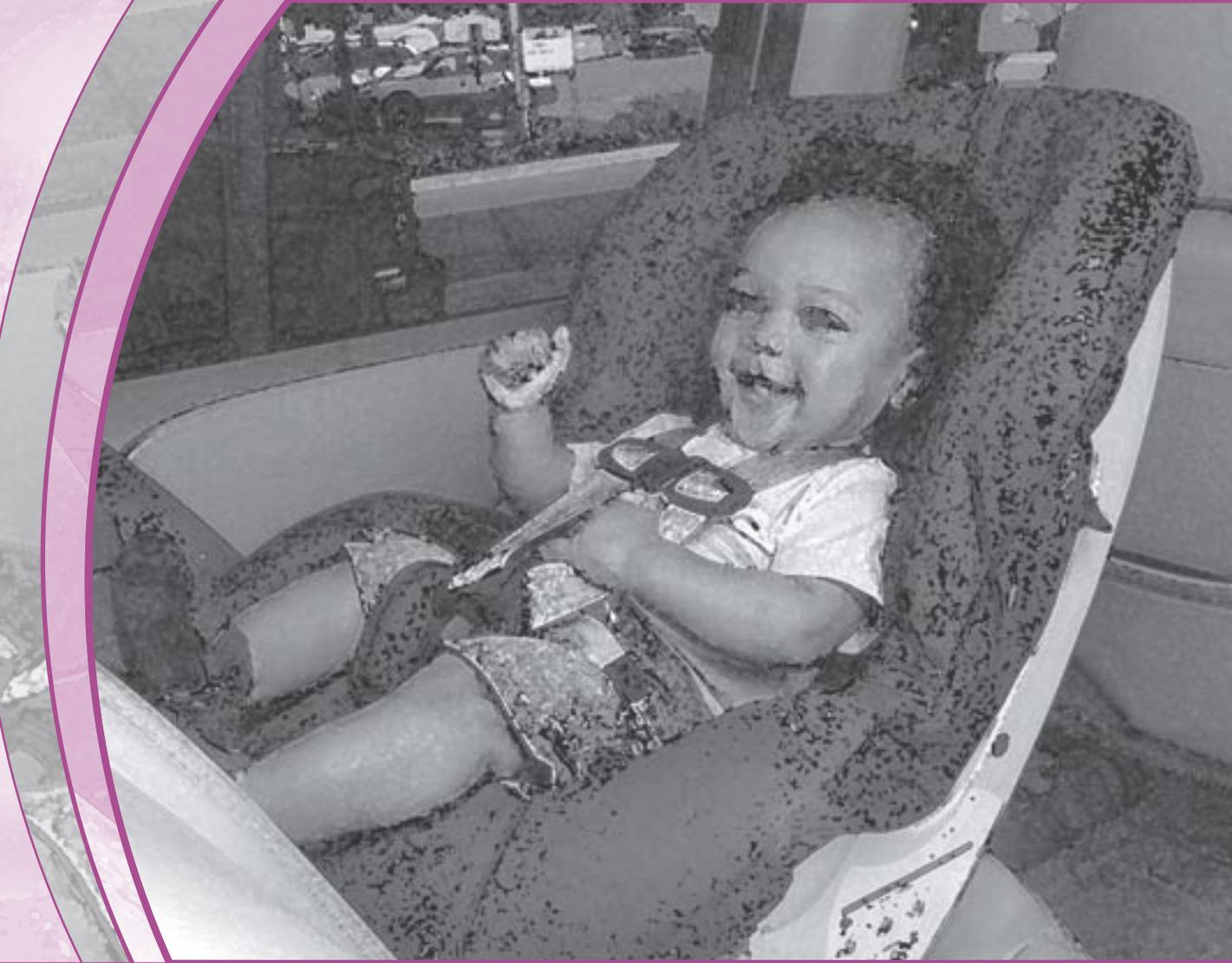


NATIONAL HIGHWAY TRAFFIC
SAFETY ADMINISTRATION



2007 Motor Vehicle Occupant Safety Survey

VOLUME 5

Child Safety Seat Report

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Technical Report Documentation Page

1. Report No. DOT HS 810 978		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle 2007 Motor Vehicle Occupant Safety Survey Volume 5 Child Safety Seat Report				5. Report Date April 2009	
				6. Performing Organization Code	
7. Author(s) John M. Boyle and Cheryl Lampkin Schulman, Ronca and Bucuvalas, Inc.				8. Performing Organization Report No.	
9. Performing Organization Name and Address Schulman, Ronca & Bucuvalas, Inc. 8403 Colesville Road, Suite 820 Silver Spring, MD 20910				10. Work Unit No. (TRAIS)	
				11. Contract or Grant No. DTNH22-05-C-05089	
12. Sponsoring Agency Name and Address National Highway Traffic Safety Administration Office of Behavioral Safety Research 1200 New Jersey Avenue SE. Washington, DC 20590				13. Type of Report and Period Covered Survey conducted Jan. 9, 2007 to April 30, 2007	
				14. Sponsoring Agency Code	
15. Supplementary Notes					
16. Abstract <p>The 2007 Motor Vehicle Occupant Safety Survey was the sixth in a series of periodic national telephone surveys on occupant protection issues conducted for the National Highway Traffic Safety Administration (NHTSA). Data collection was conducted by Schulman, Ronca & Bucuvalas, Inc., a national survey research organization. The survey used two questionnaires, each administered to a randomly selected national sample of about 6,000 persons age 16 or older. Interviewing began January 9, 2007 and ended April 30, 2007. 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 ("2007 Motor Vehicle Occupant Safety Survey. Volume 1. Methodology Report").</p> <p>Among drivers who lived with children age 12 or younger, most indicated that the youngest child typically rode in the back seat. Parents/caregivers of children under the age of 9 usually said the (referent) child either used a child car seat all the time (77%) or never (18%). If the child never used a car seat, it usually was because the child had graduated to seat belt use. However, 23% of the children who never used a car seat but wore seat belts said the shoulder belt cut across their face or neck on most trips, 23% usually put the shoulder belt behind their back, and 12% put the shoulder belt under their arm. Many children ages 6 through 8 discontinued using child car seats (including booster seats). Although booster seats are recommended for most children ages 4 through 8, the survey found only 40% of children in that age range using them and another 24% using front-facing child safety seats. While most parents/caregivers (92%) had heard of booster seats, 17% of these had concerns about their safety.</p>					
17. Key Words Survey Occupant Protection Car Seats Child Safety Seats			18. Distribution Statement Booster seats Car Seat Use Seating Position Document is available through the National Technical Information Service, Springfield, VA 22161 and free of charge at www.nhtsa.dot.gov .		
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages 164	
				22. Price	

EXECUTIVE SUMMARY

The 2007 Motor Vehicle Occupant Safety Survey (MVOSS) was the sixth in a series of periodic 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 6,000 persons age 16 and older (with younger ages over-sampled). Interviewing began January 9, 2007 and ended April 30, 2007.

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 (Volume 1).

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 74% saying the child never rode in the front seat in the past 30 days and 8% claiming it occurred just a few times. Children were more likely to sit in the front seat if the child was older and there was no frontal passenger air bag in the respondent's primary vehicle.
- **Change From A Year Ago In Youngest Child's Seating Position.** Half (50%) of children ages 1 to 12 were reported less likely now than a year ago to ride in the front seat. Another 30% were thought to be just as likely as they were a year ago to ride in the front, while 12% were considered more likely now than a year ago to ride in the front.
- **Reasons Why 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 was older or bigger (46%), the child preferred the front (16%), and the child and driver were the only ones in the vehicle (15%). The most often given reasons why children were less likely to ride up front were that it was safer in back (47%) and the child was too young (21%).

Transporters Of Young Children Under Age 9

- **Driving A Young Child Not In Household.** Almost half of all drivers had driven a motor vehicle in the past year with a child under the age of 9 as a passenger, but many of these (23%) did not actually live with a child in that age range. If drivers had transported children

under age 9 but did not live with the children, their frequency of driving young children tended to be low: 47% said they did this only a few days a year and 33% 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 That They Drove).** Most often, the driver transporting a child not living in the household was a grandparent (41%). When asked the frequency they drove young children, grandparents tended to report a greater amount compared to other relatives.

2007 Car/Booster Seat Use

- **Parent/Caregiver Analytic Group.** The survey selected a subgroup of drivers to ask detailed questions about children's use of child car seats, designated "parents/caregivers." These were: (a) parents of children under age 9 (usually parents living with the child, but also 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 9 who at least on occasion drove with them (usually a grandparent, sibling, or other relative living with the child).
- **Frequency Of Child Car Seat Use.** Parents/caregivers usually said either that the selected child used a car seat "all of the time" (77%) or else never used a car seat (17%). If the child never used a car seat, it usually was because the child had graduated to seat belt use. Ninety-five percent or more of children under 40 pounds in weight reportedly used car seats (including booster seats) "all of the time." The majority of children stopped using car seats by age 7. Children who have outgrown front facing child safety seats should ride in booster seats until the vehicle seat belts fit properly, which is usually at age 8 or when they are 4'9" tall.
- **Type Of Car Seat by Age.** For the best possible protection, infants should be kept in the back seat in rear facing child safety seats as long as possible up to the height or weight limit of the particular seat. At a minimum, the infant should be kept rear facing until a minimum of age 1 and at least 20 pounds. Children who reach 20 pounds before one year of age should ride rear facing in a child safety seat recommended at a higher weight. Most infants who used car seats (80%) did ride in a rear facing position. But 13% reportedly rode in front facing child safety seats. Front facing child safety seats predominated among one-year-olds (86% of those using car seats), two-year-olds (95%), and three-year-olds (78%). Booster seats accounted for 16% of car seat users among three-year-olds, and then nearly tripled to 43% at age 4. After age 4, booster seats became the predominant child restraint used by children.
- **Usual Location In Vehicle Where Child's Car Seat Is Placed.** The vast majority of parents/caregivers (97%) stated that the child usually sat in the back when riding in a car seat in a vehicle that the parent/caregiver was driving. This was true regardless of whether the child used a rear facing infant seat (95%), a front facing toddler seat (98%), or a booster

seat (98%). If there was a frontal passenger air bag in the respondent's primary vehicle, then 99% of children in car seats usually 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 (99%) considered the back seat the safest location to place a child car seat in a vehicle. One percent incorrectly believed the front seat was the safest.
- **Acquisition Of Car Seat.** Most car seats (94%) were obtained new; less than one-in-ten (6%) were acquired used. More than four-in-five car seats (83%) were purchased, while 14% were acquired as a gift or loaner from a relative or friend.
- **Mailing Back Car Seat Registration Cards.** Almost two-thirds (64%) of parents/caregivers who said they obtained the car seat new also said that a registration card came with the seat. Of these, 48% mailed back the card.
- **Source Of Information.** Of several information sources read by the interviewers, 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 books or articles (54%), from family or friends (54%), from TV or radio (49%), or from a doctor or nurse (48%).
- **Ease Of Attaching Car Seat To Vehicle.** Parents/caregivers reported that they had relatively little difficulty installing their children's car seats regardless of the type of seat. Three-in-five (60%) said it was very easy to attach the car seat to the vehicle they usually drove; 32% considered it somewhat easy. However, 24% of parents/caregivers acknowledged that they had in the past driven with the child in the car seat and later found the car seat was not securely attached. Most often, respondents said they learned how to attach the child car seat to the vehicle by reading the instructions (64%), usually from the owner's manual.
- **Frequency Car Seat Moved To Another Vehicle.** Transfer of car seats from one vehicle to another occurs with regularity for some parents/caregivers. One-in-eight respondents (13%) said they move the child car seat from one vehicle to another at least a few days a week. An additional 21% do so a few days a month.
- **LATCH System.** In 2003, a series of questions was added to the survey to assess knowledge and use of the new attachment system called LATCH (Lower Anchors and Tethers for Children). LATCH is intended to make safety seat installation easier by providing a means of attaching the car seat to the vehicle seat without having to use the vehicle seat belt. LATCH child safety seats have a lower set of attachments that connect to bars ("anchors") in the vehicle seat of LATCH-equipped motor vehicles, and most of the child seats have an upper tether to attach to a top anchor in the vehicle. LATCH is required in nearly all passenger vehicles and all child safety seats (not required for booster seats, car beds, and vests) manufactured after September 1, 2002, although it was available in some

models before that date. Thus awareness and use of the LATCH system at this time is in its early stages. Among parents/caregivers of children that were using child car seats, 39% had heard of LATCH. About two-thirds (66%) of those who had heard of LATCH said they had used the LATCH system. In general, parents/caregivers of children using infant or toddler seats were still using the vehicle seat belt to attach the car seat to the vehicle (87%). However, more than seven-in-ten (71%) parents/guardians of children using front facing toddler seats reported that the seat had an upper tether, which they usually reported using. In cases where respondents said they did not use the tether on all trips, most often they indicated that it was because there was no place in the vehicle to which they could attach it (51%).

- **Ease Of Buckling Child In Car Seat.** As with installing the car seat in the vehicle, most parents/caregivers considered it easy to properly buckle the child into the car seat. Almost all parents/caregivers answered either that it was very easy (77%) or somewhat easy (18%).
- **Use Of Safety Seat Inspection Stations.** Inspection stations are places where parents and other caregivers can go to have trained technicians check whether they are correctly installing the child seat in their vehicle and properly buckling their child into the seat. More than one-in-four (26%) of the parents/caregivers driving a child who uses a car seat said they had gone to an inspection station. Most often, it was sponsored by local police (40%) or fire or rescue units (27%). About one-in-three (31%) parents/caregivers who had gone to an inspection station indicated that the technician had found something wrong with how they attached the seat or buckled in their child. However, 40% of parents/caregivers said the person checking the car seat suggested they do something differently in how they attach the seat. Most often the suggestion was to make the seat belt that secures the child seat to the vehicle tighter (46%). Most (67%) said that they had been given the opportunity at the inspection station to attach the seat and buckle in their child under the guidance of the technician. And in the majority of cases (57%) the respondent was the last person to adjust the car 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 four-in-ten (44%) answered that this had occurred. Children were transported on a far less regular basis by non-household members compared to the parents/caregivers who lived with the children. When asked the identity of the driver outside the household who transported the child in the past 30 days, parents/caregivers most often answered that it was a grandparent (42%) or a bus driver (22%).

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 they were only going to be in the car a short time (49%), the seat was not available (28%), and there was no room for

the seat (24%). Most children who were part time car seat users wore a seat belt when they were not in their car seat (71% “all the time”).

- **Children Who Never Use Car Seats.** When asked the reason why the child never uses a car seat, the respondents usually answered that it was because the child would be using a seat belt (93%) or that the child was too big (82%). Yet when wearing a seat belt with a shoulder strap, 23% of the children had the belt cut across their face or neck on most trips, 23% usually put the shoulder belt behind the back, and 12% usually put the shoulder belt under the arm.
- **Age At Which Child Is Believed Ready To Begin Wearing Seat Belt.** Parents/caregivers of children who did not use child safety seats at all leaned towards a slightly younger age than the user groups as the threshold point when a child is ready to begin wearing a seat belt. They most frequently gave age 6 as the transition point, compared to age 8 by parents/caregivers of part time and full time car seat users. Overall, 43% of the parents/caregivers of non-users gave an age of 6 or younger as the point when a child is ready to begin wearing a seat belt compared to 33% of the part time users and 30% of the full time users.

Booster Seat Issues

- **Use Of Booster Seats.** Booster seats are considered the appropriate restraint for most children roughly between the ages of 4 and 8.¹ However, the data collected from the parents/caregivers showed only 40% of children in that age range using booster seats, with another 24% using front facing child safety seats. Booster seat usage peaked at ages 5 (50%) and 6 (51%), but was only 20% by age 8.
- **Awareness Of Booster Seats.** Most parents/caregivers (92%) had heard of booster seats. Of those who were aware of booster seats, 67% 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 four (33%); the most frequent weight was 40-49 pounds (34%).
- **Most Important Reason To Use Booster Seats.** About one-third of respondents said the most important reason for using a booster seat was to make the seat belt fit the child properly (36%). Nearly as many (32%) said it was to make the child safer.
- **Concerns About Booster Seats.** Among the parents/caregivers who had seen or heard of booster seats, almost one-fifth (17%) had concerns about their safety. When asked what

¹ An increasing number of front facing child safety seats have become available that can be used for weights greater than the traditional 40 pound limit. This is considered an acceptable option for children who weigh more than 40 pounds.

concerns they had, the parents/caregivers criticized them as loose fitting and unstable systems that would not adequately restrain the child in a crash.

- **Expected Restraint System After Outgrowing Current Seat.** If the referent 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. The results showed few parents/caregivers expecting children in rear facing (5%) or front facing (12%) child safety seats to move directly to seat belts.

Attitudes Toward Enforcement Of Child Restraint Laws

- **Support For Enforcement.** The public (age 16 and older) favors stringent enforcement of car seat laws. Almost three-in-five persons (56%) believed that the police should issue a ticket at every opportunity. Even more (67%) believed the fine should be \$50 or more. Indeed, one-half of the respondents (51%) said the fine should be \$100 or more.
- **Legal Requirements For Children Who Outgrow Car Seats.** Ninety-five 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 (87%) rejected the notion of an upper age limit by saying that seat belt use should be required for all children (which equated to 84% of the total population age 16 and older).

Trends (1994-2007)

- **Children In Back.** The 1998 survey introduced questions asking about the seating position of the youngest child in the household age 12 or younger. In 1998, 30% reportedly rode in the front seat on half or more of their trips with the respondent during the past 30 days. The figure dropped to 14% in 2007.
- **Change In Definition Of Parents/Caregivers.** Criteria for defining parents/ caregivers were expanded for the 2000 survey in order to include all ages where booster seats are the recommended restraint system for children. Thus respondents entered the question series for parents/caregivers if there was a referent child under the age of 9, as opposed to under the age of 6 in the earlier surveys. As a consequence, 2000, 2003 and 2007 survey results came from a somewhat different subgroup than in 1994-1998, thereby affecting comparability of results. But since the majority of child restraint questions were asked only of parents or caregivers of children who used a car seat, and the 2007 survey showed that child car seat users were predominantly under the age of 6, the effect on survey results of the change in

definition may have been negligible for most questionnaire items. Therefore, some trend data are presented.

- **Car Seat Use.** Data collected from parents/caregivers suggest continued increase in child restraint use among children age 3 and older, and children weighing 30 or more pounds. An exceptionally large increase occurred during 2007 for children ages 5 through 7. Car seat use among children under age 3, and children weighing less than 30 pounds has been consistently high.
- **Placement Of Child's Car Seat.** Parents/caregivers of children using car seats were asked the seating location of the child when riding with them. The percentage that said that the child is usually in the back seat when riding in a car seat has risen almost 20 percentage points since 1994, from 78% to 97% in 2007.
- **Safest Perceived Location For A Car Seat.** Similar to the 1996, 1998, 2000 and 2003 surveys, almost all parents/caregivers in 2007 whose (referent) child used a car seat knew that the back seat was the safest location to place a child car seat in the vehicle (99% in 2007).
- **Support For Enforcement.** In 2007, 56% of the public believed that police should give a ticket at every opportunity for violations of car set laws. There was no appreciable change from 1994 (58%).
- **Legal Requirements For Children Who Outgrow Car Seats.** In each previous 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. For 2007, it was 95%.

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INTRODUCTION

Background

The Motor Vehicle Occupant Safety Survey is conducted periodically for the National Highway Traffic Safety Administration (NHTSA). It is a national telephone survey composed of two questionnaires, each administered to several thousand 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, emergency medical services, and crash injury experience. For the 2007 survey, each questionnaire was administered to approximately 6,000 individuals.

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 2007 survey contained numerous items from the earlier surveys allowing the agency to monitor change over time in knowledge, attitudes, and (reported) behavior related to motor vehicle occupant safety. The 2007 survey also included new questions dealing with such areas as wireless phone features and use while driving, inspection stations for child restraints, and new LATCH and tether child car seat attachments.

The following report presents findings from the 2007 Motor Vehicle Occupant Safety Survey pertaining to child car seats. 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 under age 9; 4) car seat installation, inspection, and training; 5) reasons for non-use of car seats by children; 6) booster seat issues; and 7) enforcement of child restraint laws. An eighth section examines MVOSS trends between 1994 and 2007 on selected child restraint issues.

Methodology

The 2007 Motor Vehicle Occupant Safety Survey was conducted by Schulman, Ronca, & Bucuvalas, Inc. (SRBI), a national survey research organization. SRBI conducted a total of 11,918 telephone interviews among a national population sample. To reduce the burden on respondents, the survey employed two questionnaires. A total of 5,908 interviews were completed with Version 1 and 6,010 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 6,000 persons age 16 and older, including oversamples of persons age 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.

2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

The survey was conducted from January 9, 2007 to April 30, 2007. For a complete description of the methodology and sample disposition, including computation of weights, refer to the 2007 Motor Vehicle Occupant Safety Survey, Volume I. Methodology Report. This 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 219 out of more than 12,000 cases) were analyzed as a separate multi-racial group that could include both Hispanics and non-Hispanics, and the Hispanic analytic subgroup included both African Americans/Blacks and Whites.

The abbreviations DK and Ref are frequently listed as response categories in the report. DK stands for “Don’t Know” and Ref stands for Refused. For most questions, the persons who answered “Don’t Know” vastly outnumbered those who refused to answer the question.

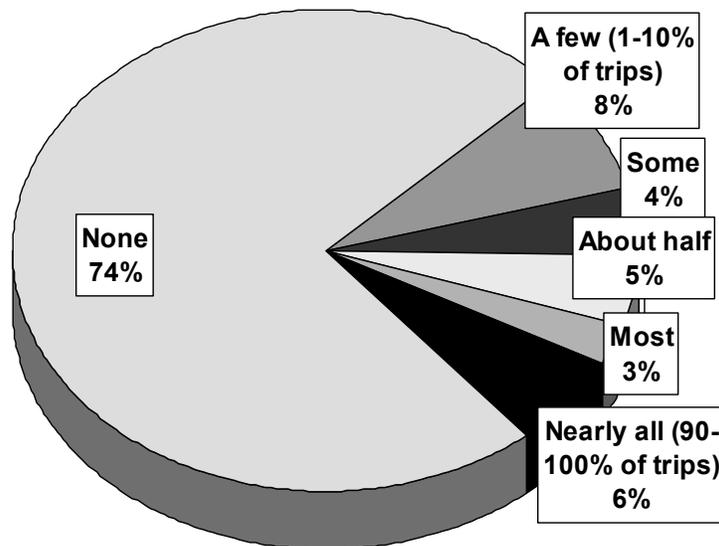
2007 SURVEY RESULTS

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**. Seventy-four percent said the child never rode in the front seat in the past 30 days when riding with them, and 8% claimed it occurred just a few times. Six percent of children rode in the front seat nearly all of the time.

Figure 1
Proportion Of Trips That The Youngest Child Rode In The Front Seat In The Past 30 Days

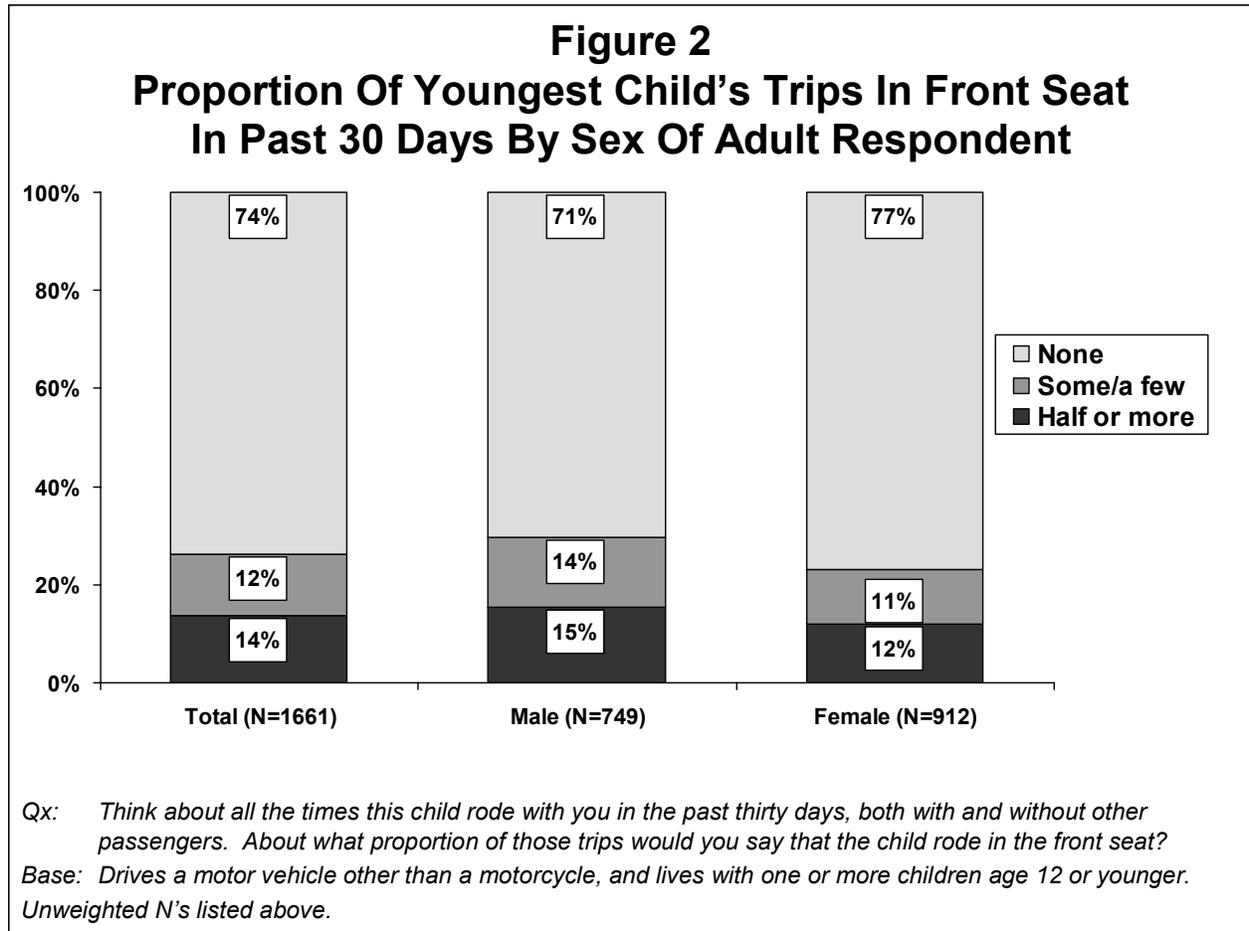


Qx: Think about all the times this child rode with you in the past thirty days, both with and without other passengers. About what proportion of those trips would you say that the child rode in the front seat?

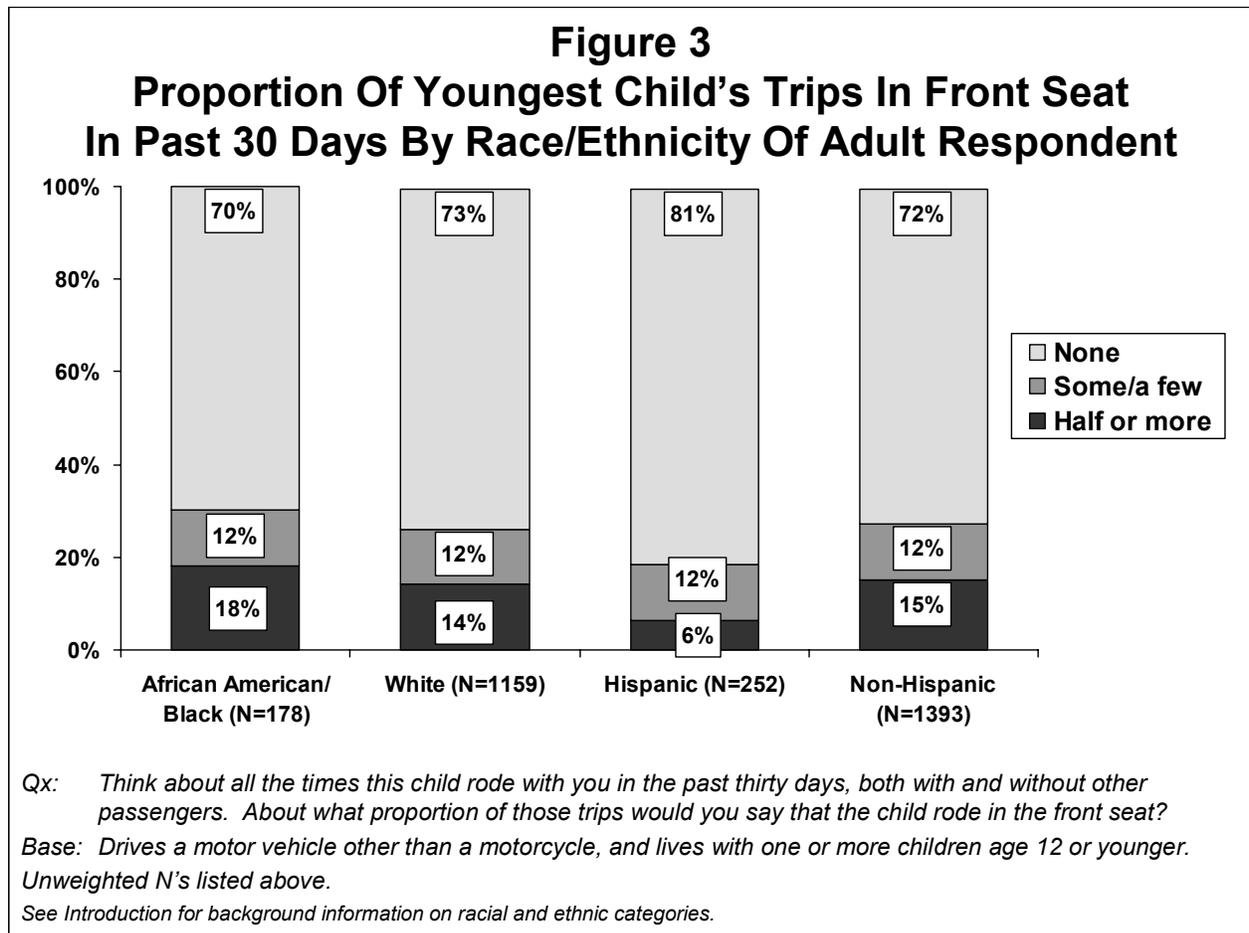
Base: Drives a motor vehicle other than a motorcycle, and lives with one or more children age 12 or younger.
Unweighted N=1661

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Seventy-seven percent of female drivers said the child never rode in the front versus 71% of male drivers.



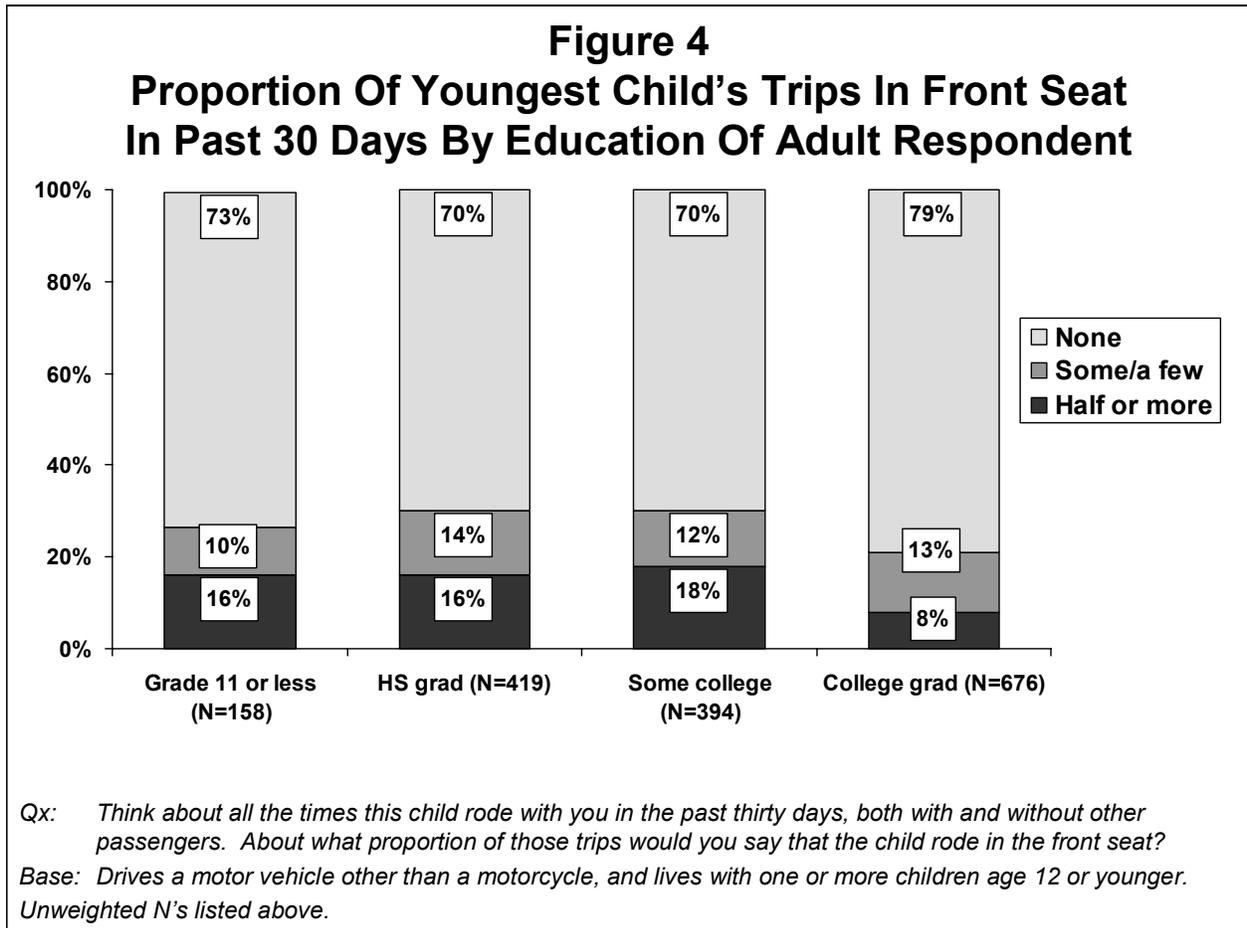
African American/Black and Hispanic drivers who resided with children age 12 and younger comprised a relatively small number of cases in the sample. Thus readers are cautioned against over-interpreting the results. The data suggested that Hispanic children were less likely than non-Hispanic children to ride (half or more of the time) in the front seat.²



² The Motor Vehicle Occupant Safety Survey collects data from all races. However, because of their small numbers in the survey sample and the resulting reduction in the precision of associated sample estimates, this report does not include breakouts of the data for American Indians and Alaskan Natives, Asians, and Native Hawaiians and Other Pacific Islanders.

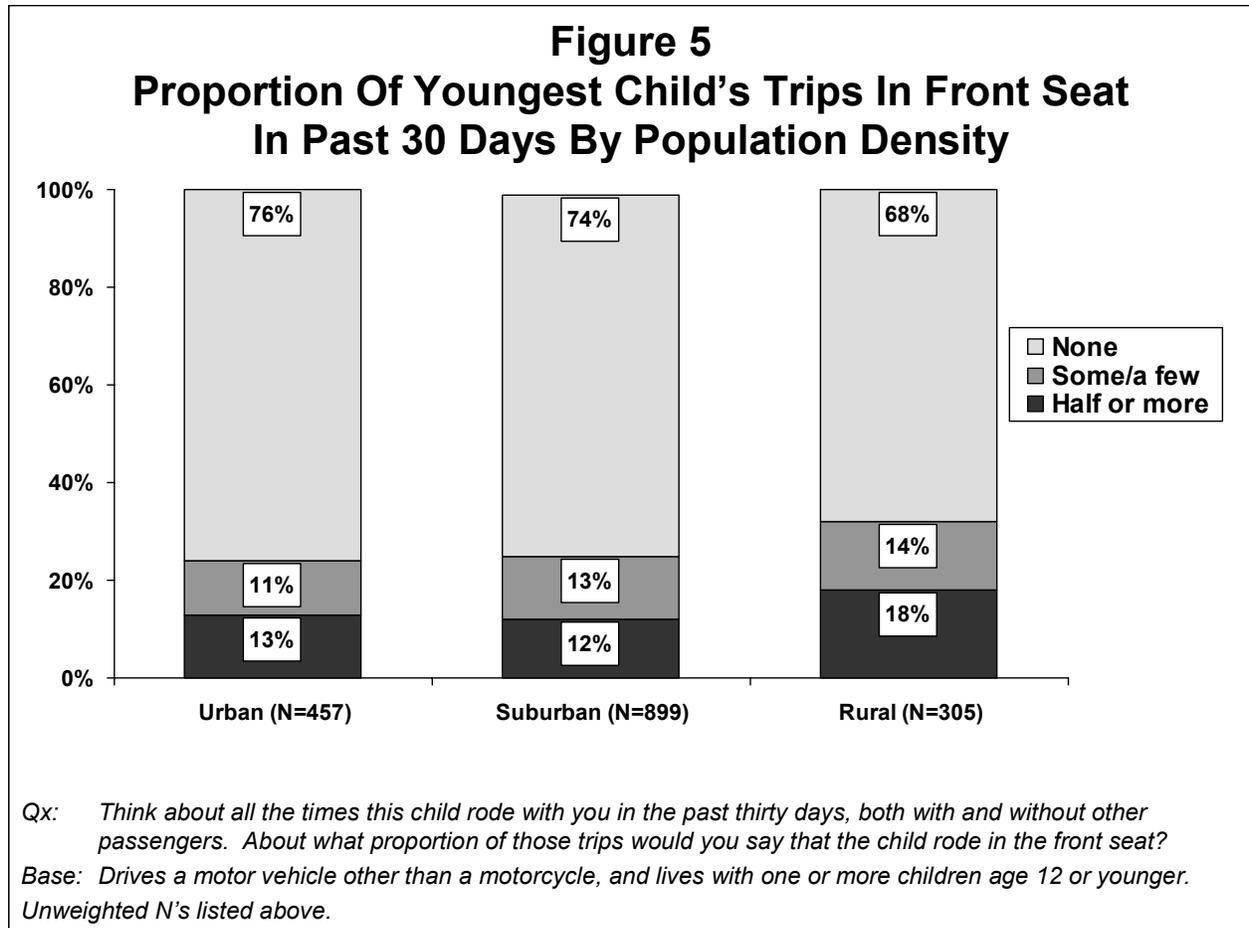
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Children were least likely to sit in the front seat if the driver was a college graduate (79% said the child never rode in the front seat compared to 73% or less among groups with fewer years of formal schooling). There was little appreciable difference in child’s seating position between drivers with some college experience versus those who completed high school but did not enter college versus those who did not graduate high school.



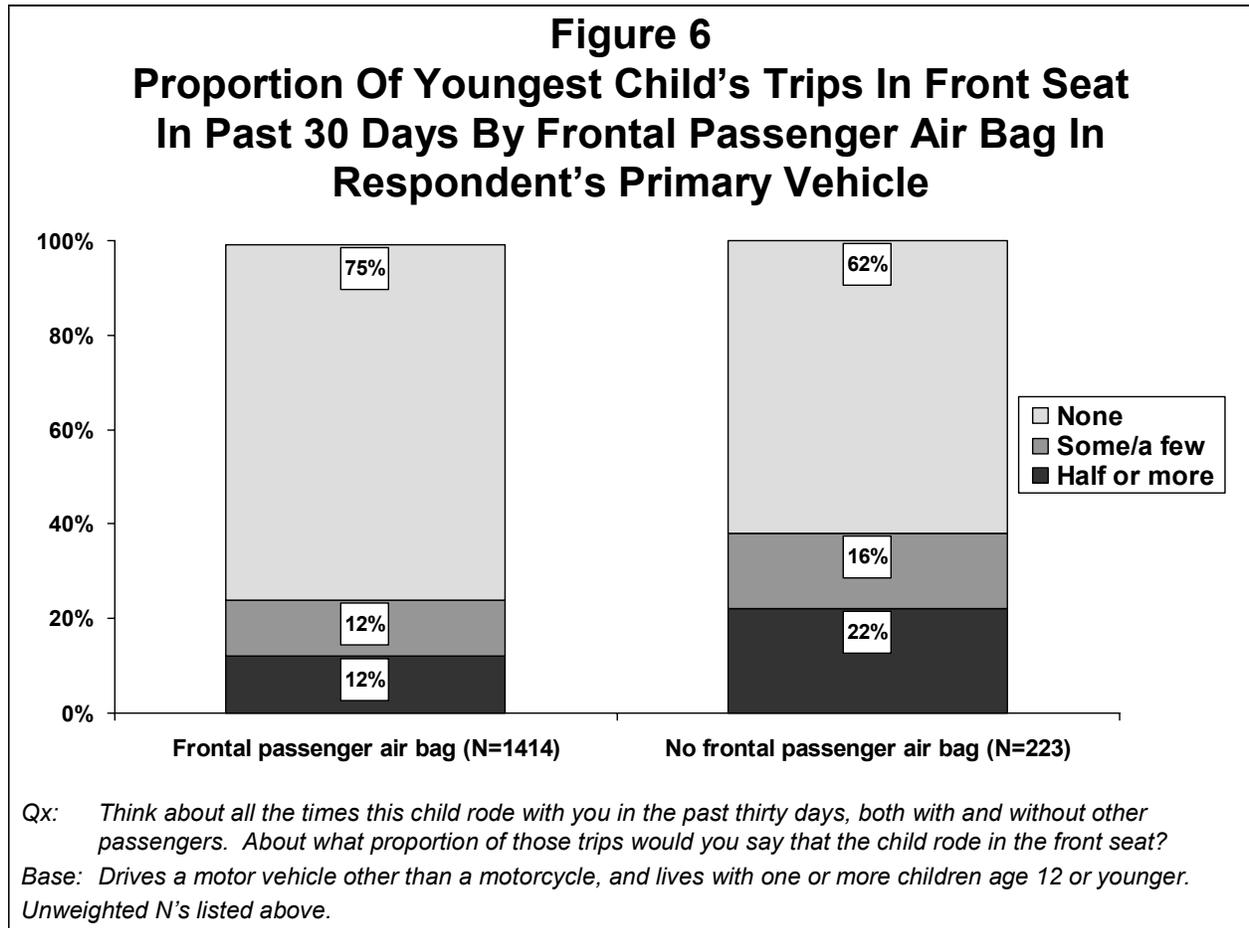
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Almost one-fifth (18%) of drivers in rural areas said the child rode in the front seat half or more of the time when riding with them compared to 12% of drivers in suburban areas and 13% of those in urban areas.



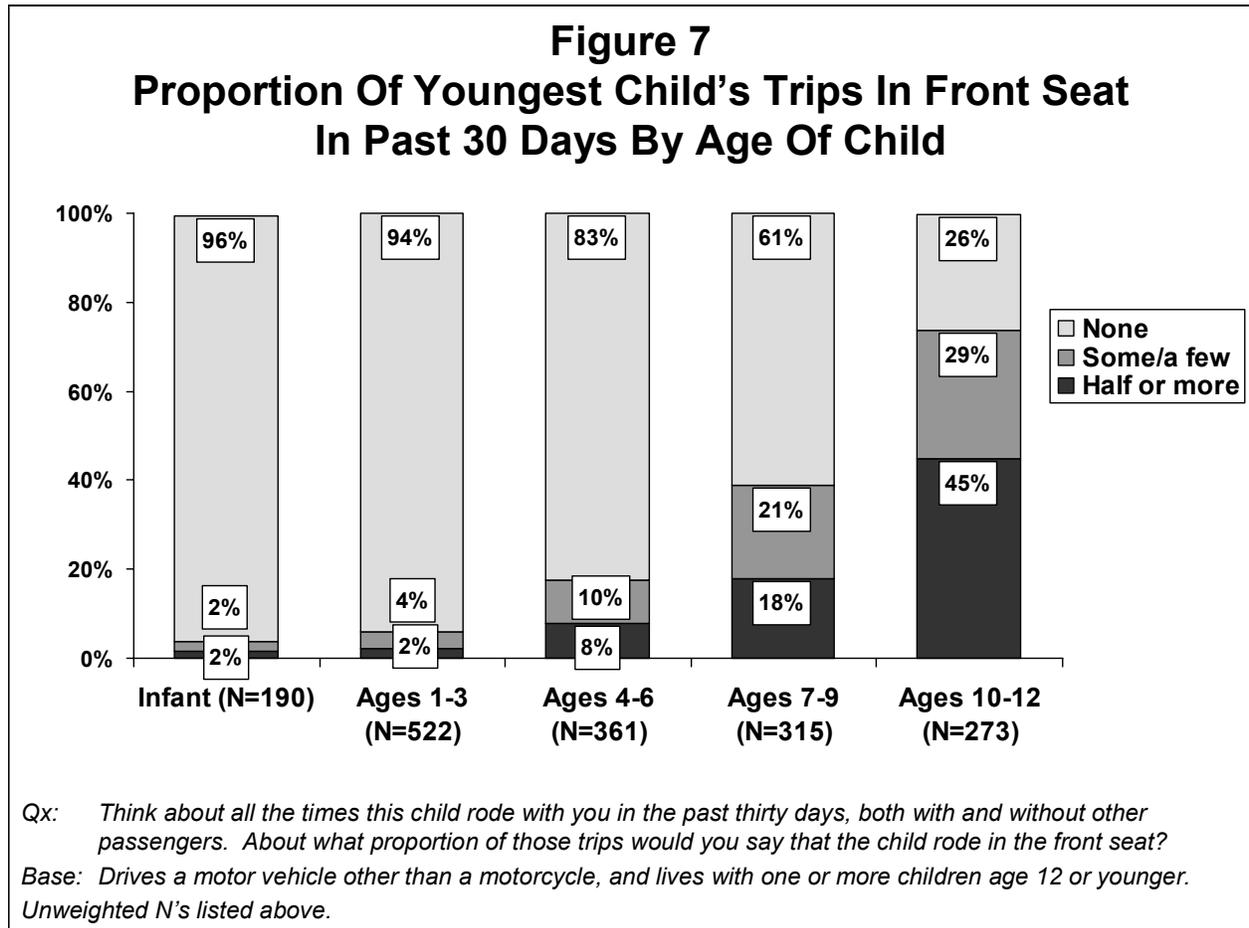
2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

The data suggested that public information campaigns warning about the danger of frontal passenger air bags to children sitting in the front seat have had an impact on the public. Among drivers whose primary vehicle had a frontal passenger air bag, 75% said that the child never sat in the front during the past 30 days. This was 13 percentage points higher than among drivers who had no frontal passenger air bag in the primary vehicle (62%).



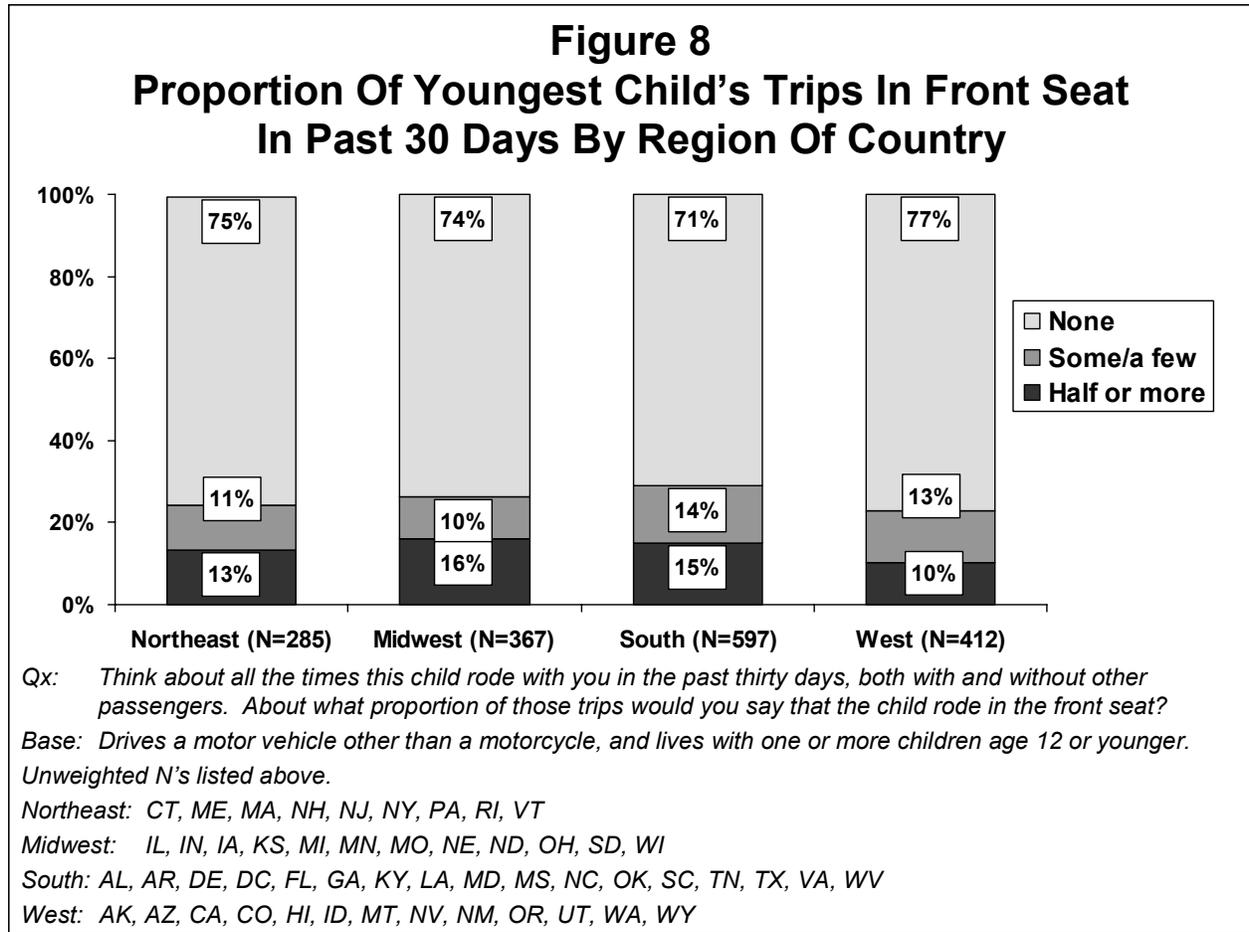
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As children became older, they became increasingly likely to ride in the front seat of the vehicle. Whereas more than nine-in-ten infants and toddlers reportedly never sat at all in the front seat during the past 30 days, the percentage fell to 83% among 4-to-6 year olds and then to 61% of 7-to-9 year olds. Among 10-to-12 year olds, close to half (45%) reportedly rode in the front seat half or more of the time.



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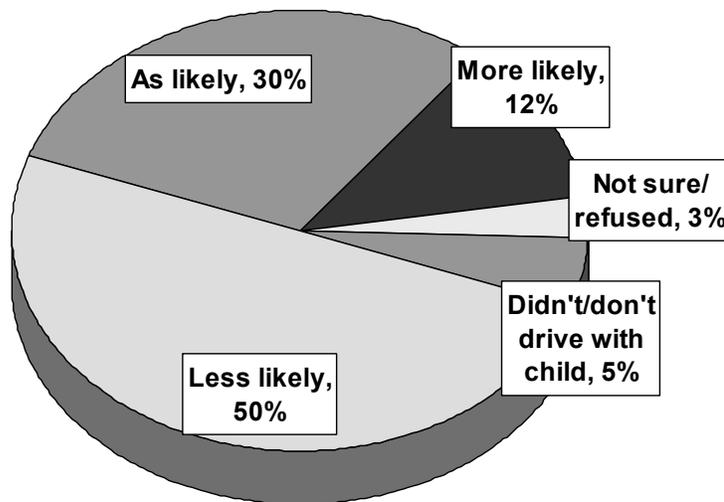
There was little difference across geographic regions of the country in the percentage who reported that the child never rode in the front seat during the past 30 days.



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. Half (50%) of the children were now less likely than a year ago to ride in the front seat. Another 30% were said to be just as likely to ride in the front compared to a year earlier, while 12% were said to be more likely to ride in the front.

Figure 9
Is The Youngest Child More Likely, Less Likely, Or Just As Likely To Ride In Front Seat Than 12 Months Ago?



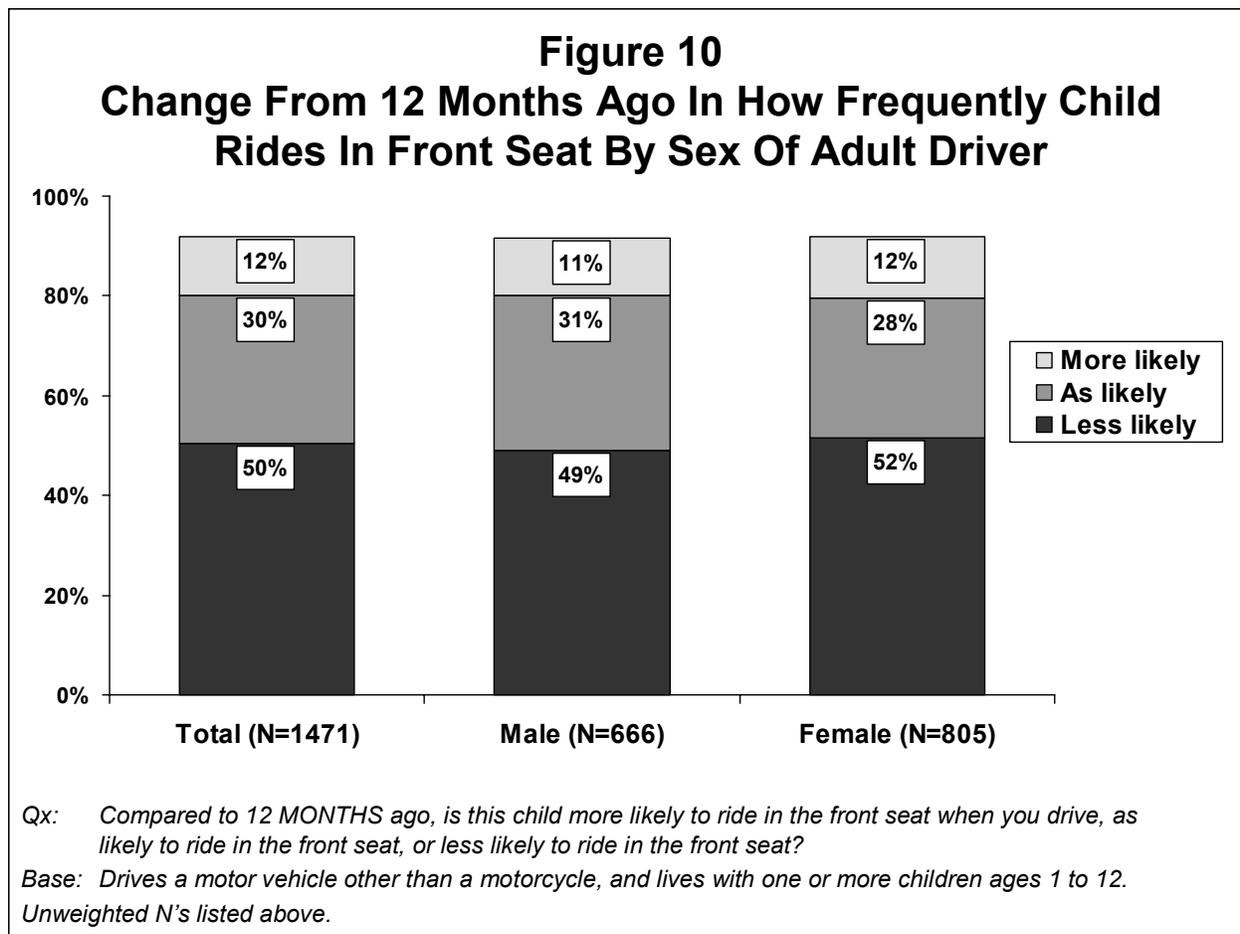
Qx: Compared to 12 MONTHS ago, is this child more likely to ride in the front seat when you drive, as likely to ride in the front seat, or less likely to ride in the front seat?

Base: Drives a motor vehicle other than a motorcycle, and lives with one or more children ages 1 to 12.

Unweighted N=1471

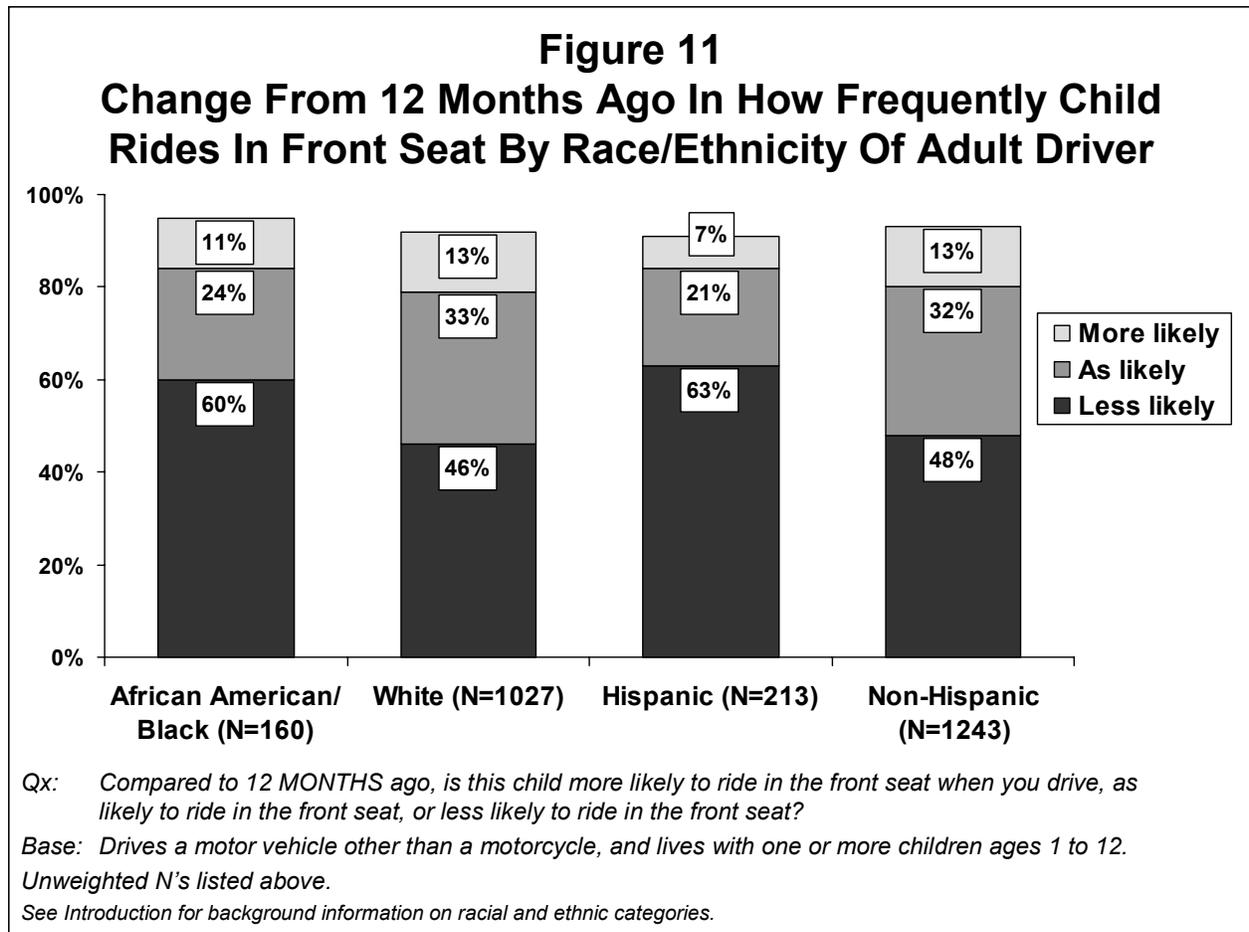
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Fifty-two percent of female drivers reported that the child was now less likely to ride in the front compared to 49% of male drivers.



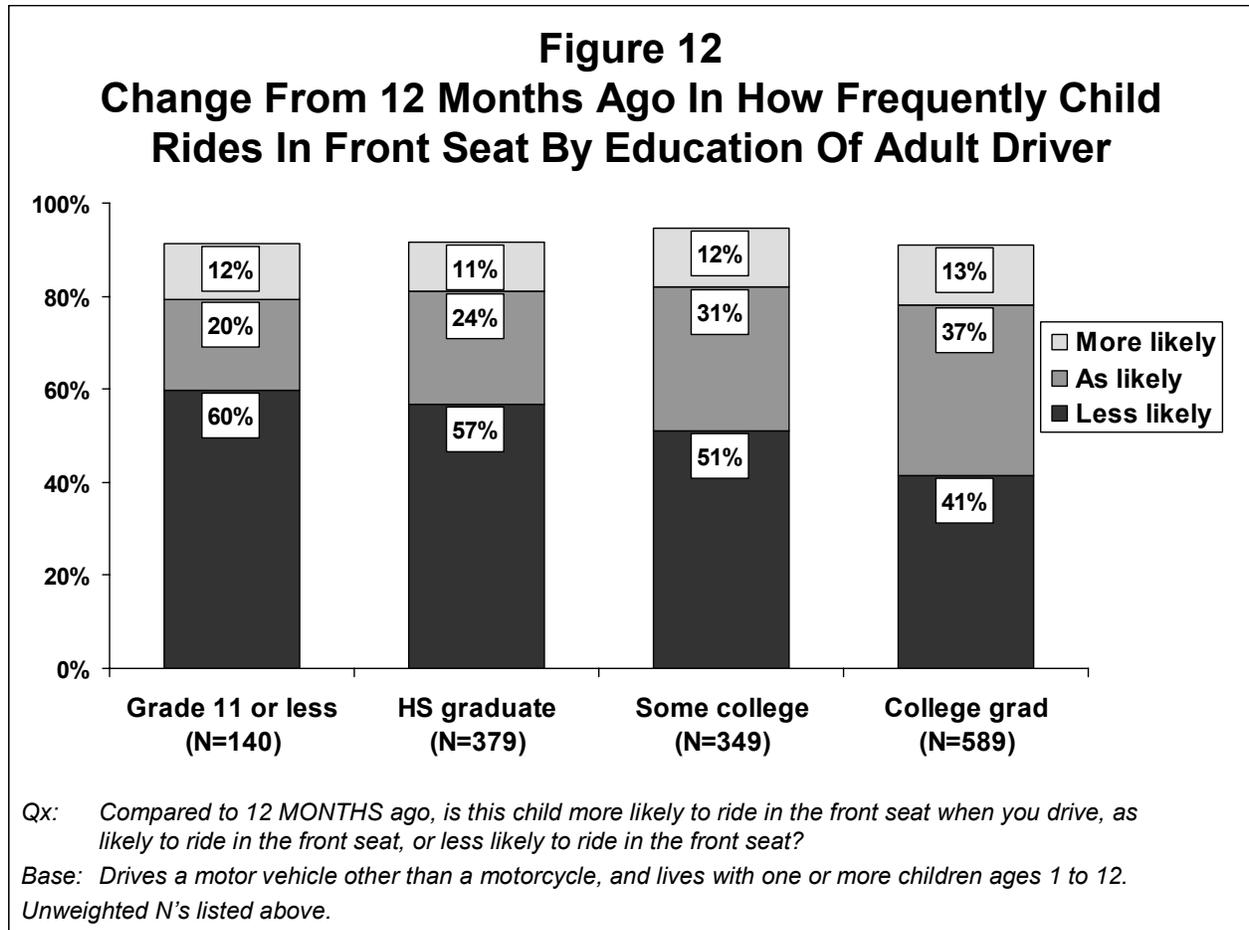
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As noted earlier, the number of African American/Black and Hispanic drivers in the sample who resided with children age 12 and younger was relatively small. Thus readers once again are cautioned against over-interpreting the results. Three-in-five African American/Black drivers (60%) reported that the youngest child was now less likely to ride in the front compared to less than half (46%) of White drivers. Close to two-thirds of Hispanic drivers (63%) reported that the youngest child was now less likely to ride in the front compared to almost half (48%) of non-Hispanic drivers.

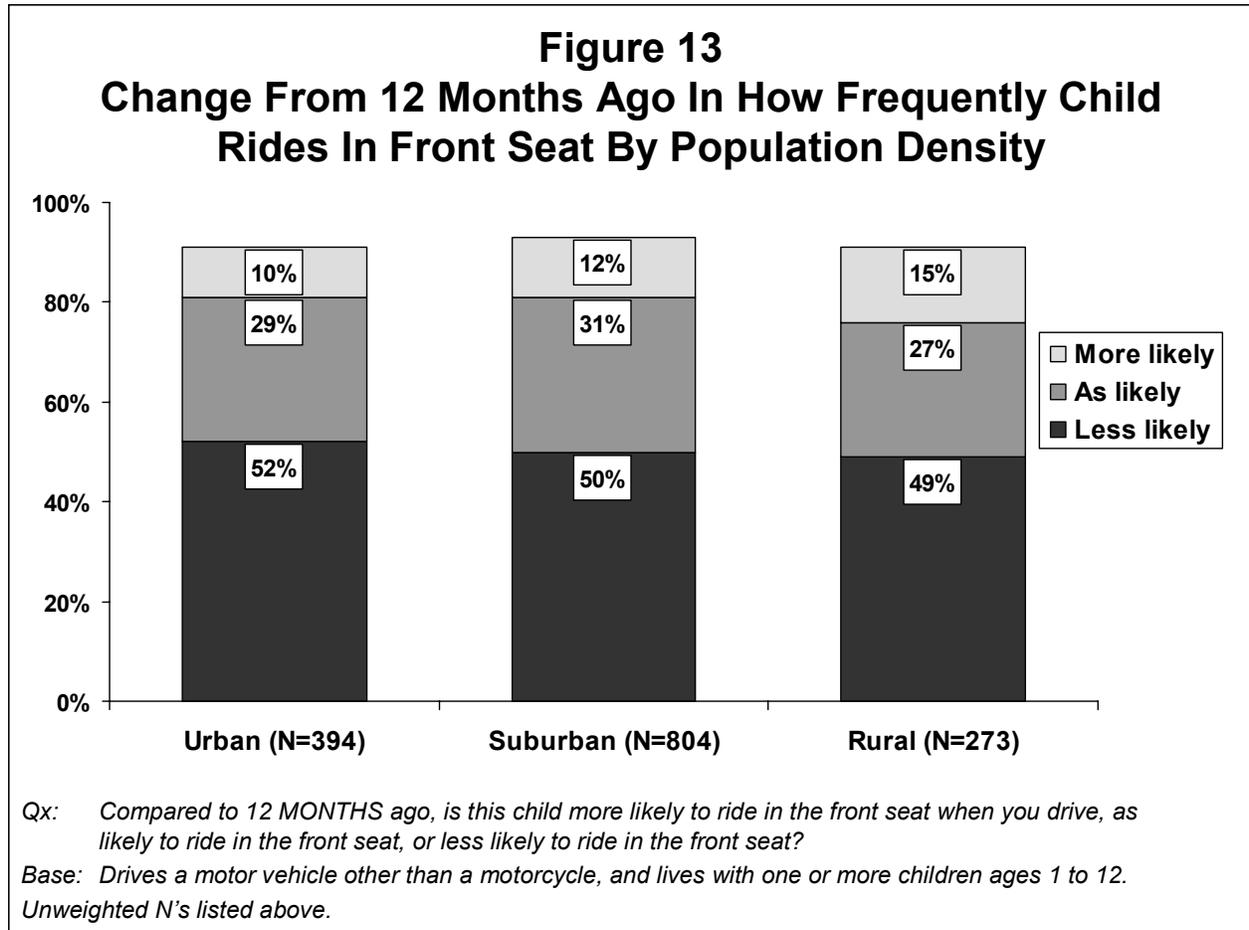


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About three-in-five drivers with no college experience (57%-60%) reported that the child was less likely than a year ago to sit up front compared to one-half of drivers with some college (51%) and two-fourths of drivers having a college degree (41%).

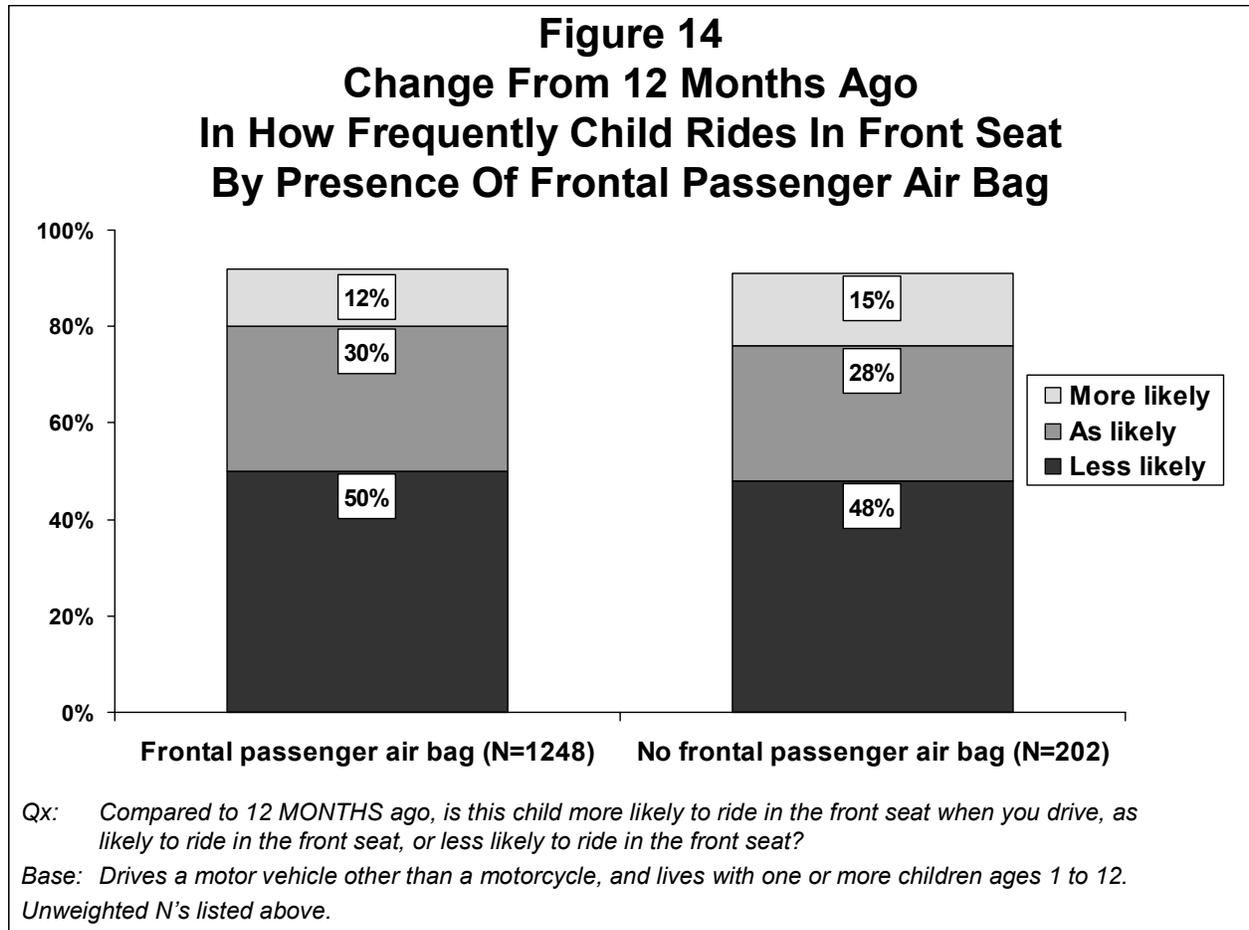


There was little difference across levels of population density in the percentage who said that the child was now less likely to ride in the front seat.



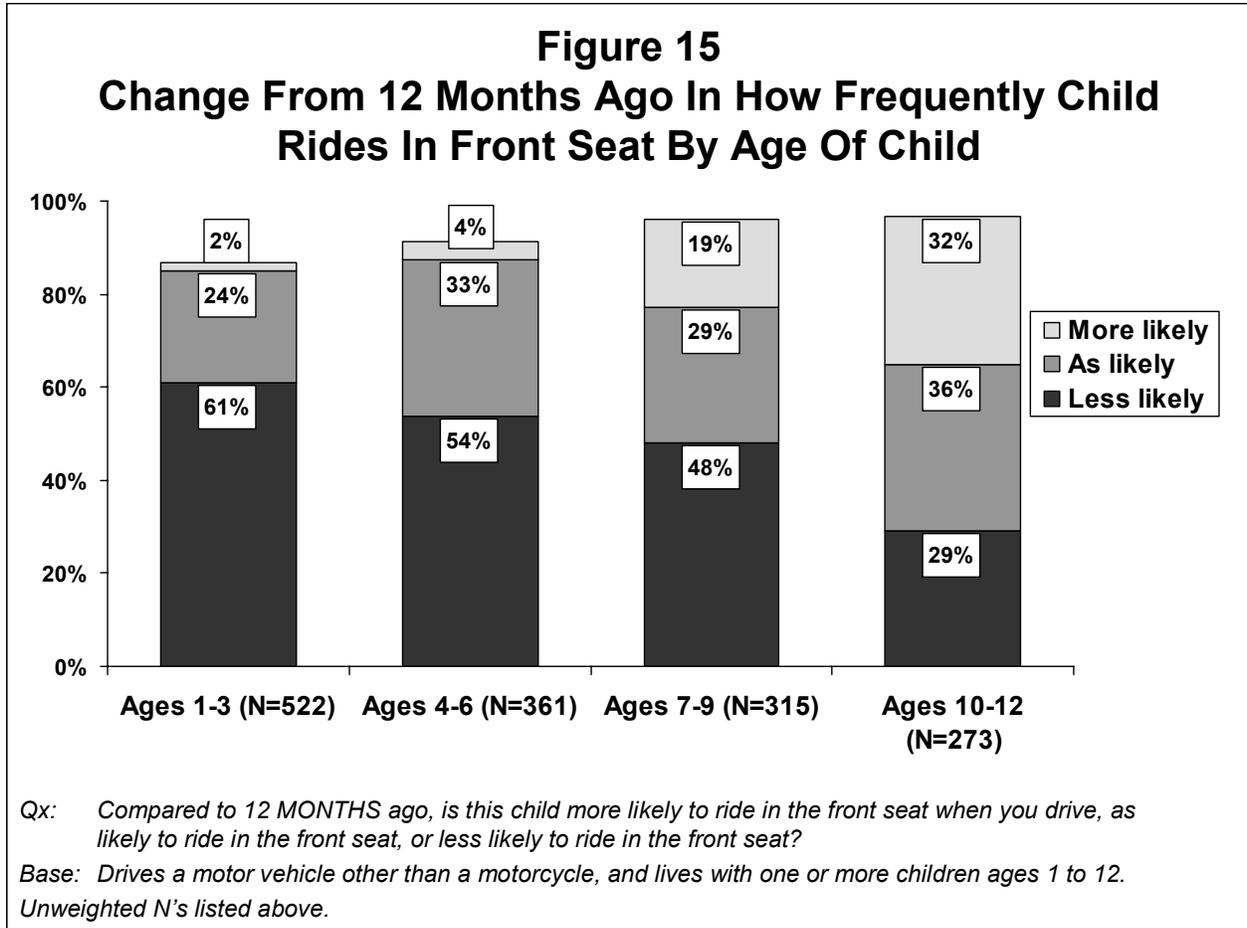
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The presence of a frontal passenger air bag did not appreciably affect the percentages. Fifty percent with frontal passenger air bags said the child was less likely now than 12 months ago to sit in the front compared to 48% who had no frontal passenger air bag in their primary vehicle.



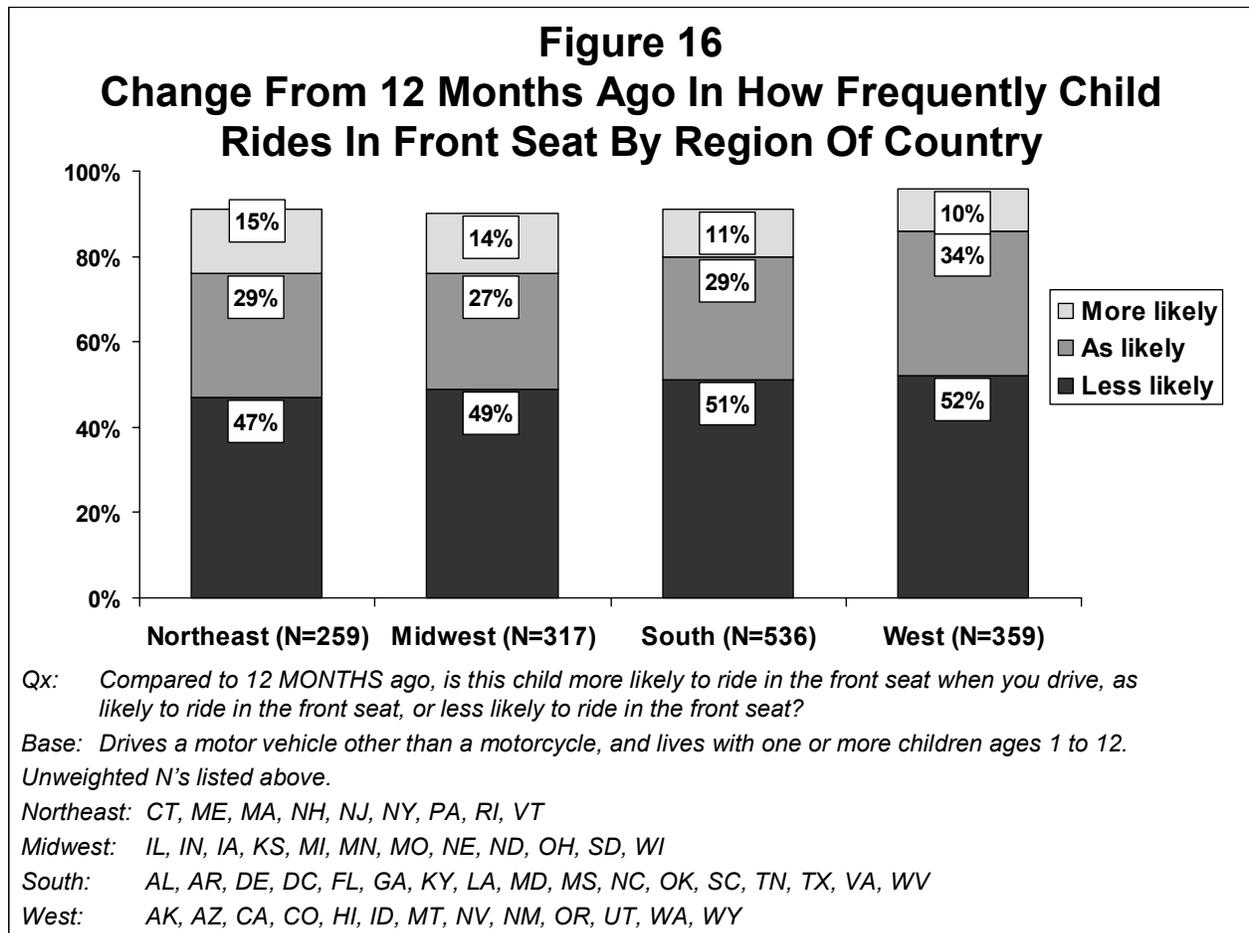
2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

Movement to the front seat increased as the age of the child increased. Only 2% 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 4% for ages 4 to 6, 19% for ages 7 to 9, and 32% for ages 10 to 12.



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Slightly more than half of drivers in the West region (52%) and South region (51%) of the country reported a lesser likelihood of the child riding in the front seat compared to a year ago. Less than half of drivers in the Midwest (49%) and Northeast (47%) reported a lesser likelihood of the child riding in the front seat compared to a year ago.



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If the child was more likely to ride in the front seat than a year earlier, the interviewers asked for the reason. Most often, it was attributed to the maturation of the child; i.e., the child was now older and larger (46%). The child's preference to ride in the front seat (16%) and when the child and parent are the only ones in the vehicle (15%) ranked second and third, respectively.

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

Reason	Percent
Child is older/larger	46%
Child prefers the front	16%
Child and I are the only ones in vehicle	15%
No other place for child in vehicle	12%
Child likes to sit by me	5%
Ability to shut off/no/front airbags	2%
Only on short/local trips	2%
I want to be able to see/reach child	1%
Other	2%
Not sure/refused/no response	3%

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=167

Total exceeds 100% due to multiple responses.

2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

Similarly, if the child was less likely to ride in the front seat than 12 months ago, the interviewer asked for the reason. Most often, the respondents replied that it was “safer in the back seat” (47%). Other reported reasons are shown in the Table below.

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

Reason	Percent
Safer in back	47%
Child is too young/not old enough	21%
Danger from air bags	16%
Child's car seat is in back	15%
It's the law	10%
No other place for child in vehicle	4%
Child prefers back	3%
Other	3%
Not sure/refused/no response	1%

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.

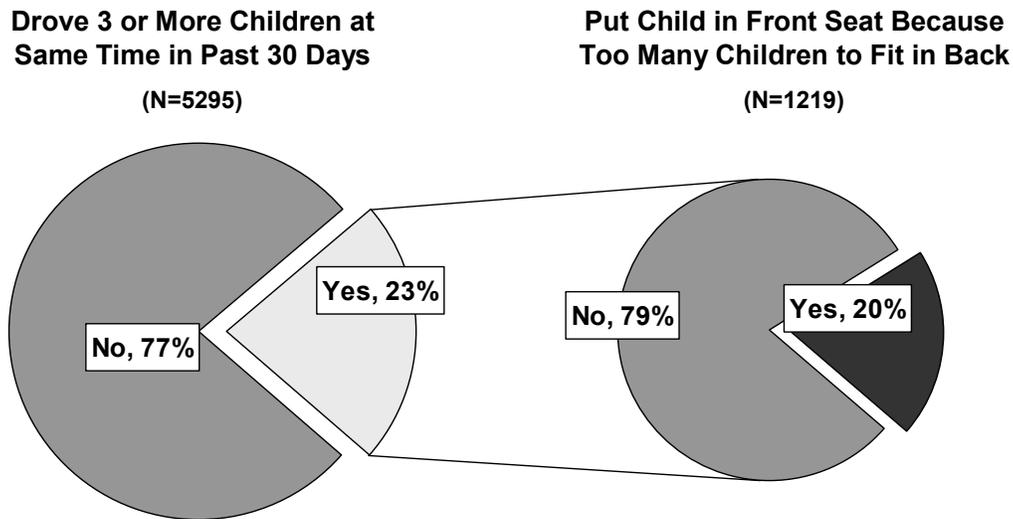
Unweighted N=735

Total exceeds 100% due to multiple responses.

Moving Children To Front Because Of Number Of Children

Drivers living with a child, and drivers not living with a child, were both asked about their recent experience in transporting multiple children. The goal was to explore the extent to which adults are forced to place children in the front because of the number of child passengers. Almost one-quarter (23%) of drivers had driven a motor vehicle in the past 30 days in which they had 3 or more child passengers at the same time, and 20% of these had put a child in the front seat during that time because there were too many children to fit in the back. In total, 5% of all drivers (20% of the 23%) had put a child in the front seat in the past 30 days due to the number of children.

Figure 17
Whether Had To Place Child Up Front
Because Of Number Of Children



Qx: In the past 30 days, have you driven a motor vehicle in which you had three or more child passengers at the same time?

Qx: Were there any days out of the past 30 where you had to put a child in the front seat because there were too many children to fit in the back?

Base: Drivers whose primary vehicle is not a motorcycle.

Unweighted N's listed above.

The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded.

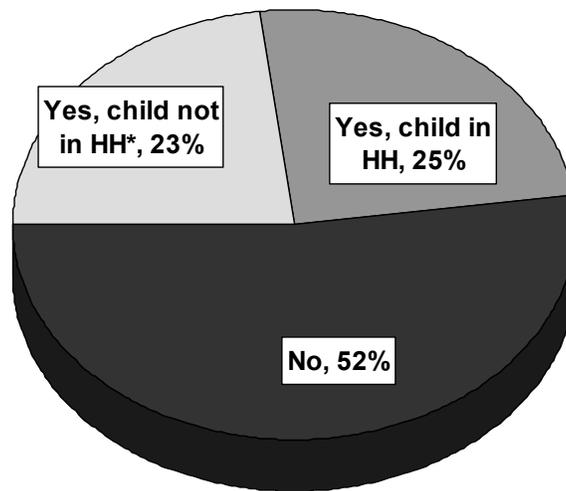
2007 SURVEY RESULTS

CHAPTER 2: TRANSPORTERS OF YOUNG CHILDREN

Driving With A Child Under Age 9

Almost half of all drivers had driven a motor vehicle in the past year with a child under age 9 as a passenger (48%). Twenty-five percent had driven a child in that age range that lived in their household. A slightly smaller percentage of the driver population (23%) did not live with a child under the age of nine 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 for children would miss a large proportion of drivers who transport children if limited to those residing in the child's household.

Figure 18
Driven In Past Year With Child Passenger Under Age 9



Qx: Do you ever drive with (the child/ at least one of the children under age 9) that you just mentioned in your (car/truck/van)?

Qx: In the past 12 months, have you driven with any children under age 9?

Base: Drives a motor vehicle.

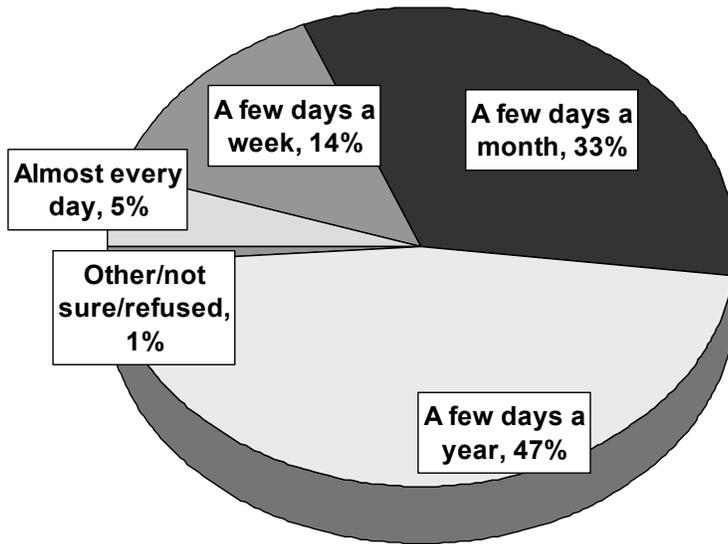
Unweighted N=5393

*Includes 10 drivers who drove children under 9 living outside the household, but not children under 9 who were living within their household. The rest of the chapter treats them as drivers who do not live with a young child.

Drivers Who Do Not Live With The Child

Even though drivers who had transported a child under age nine in the past year were split almost evenly between those who lived with young children and those who didn't, the frequency of transporting young children would be expected to be less among those in childless households. Figure 20 suggests that is the case. Almost half (47%) of drivers who drove with a child passenger under age 9 in the past year, despite not living with a child in that age range, did so only a few days a year. Still, 20%³ of these drivers drove one or more young children either almost every day (5%) or a few days a week (14%). Another third (33%) drove one or more young children a few days a month. Another third (33%) drove one or more young children a few days a month.

Figure 19
Frequency Of Driving Children Under Age 9:
Drivers Who Do Not Live With A Young Child



Qx: How often do you drive with children under age nine?

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

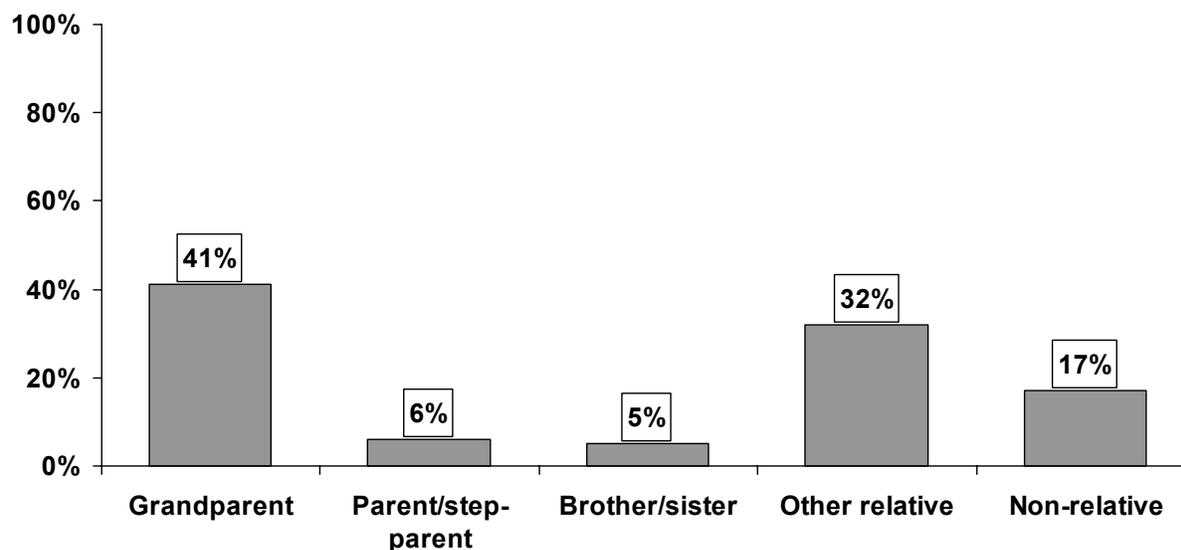
Unweighted N=1349

³ When a percentage is cited in text that combines two or more response categories, it is combined using non-rounded numbers. That combined percentage may differ slightly from the sum of the listed percentages for the component categories because the category percentages are rounded numbers.

2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

When asked their relationship to the young child(ren) outside their household whom they drove, 41% said that they were the grandparents. Small percentages answered that they were the parents/step-parents (6%) or were siblings (5%). Almost one-third (32%) responded that they were some “other relative” than those just mentioned and 17% said they were a non-relative.

Figure 20
Relationship To Child Outside Household Whom They Drive:
Drivers Not Living With Young Child



Qx: What is your relationship to the child or children under age 9 that you at least sometimes drive with?

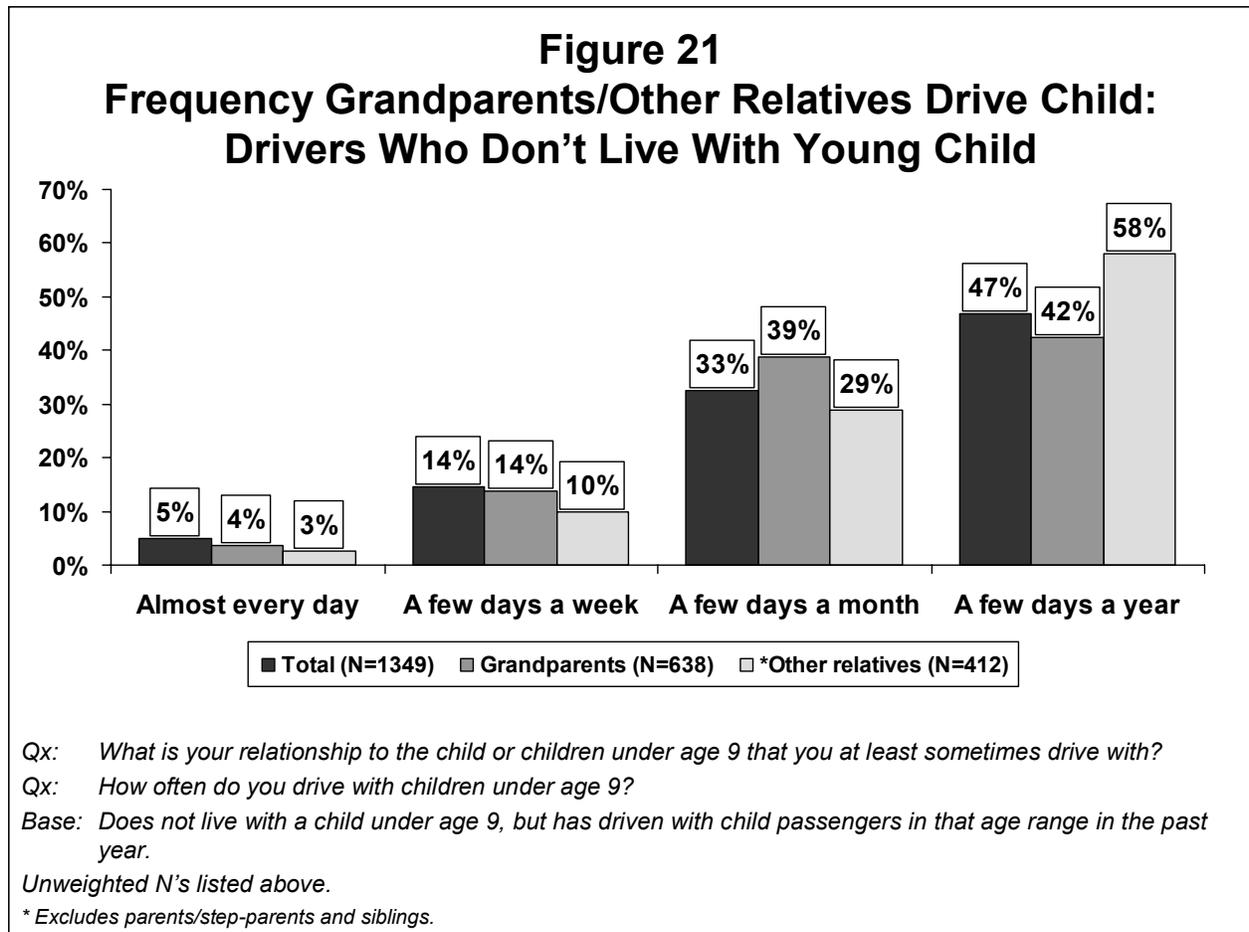
Base: Does not live with a child under age 9, but has driven with child passengers in that age range in the past year.

Unweighted N=1349

Total exceeds 100% due to multiple responses (i.e., they drove with both grandchildren and other children).

2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

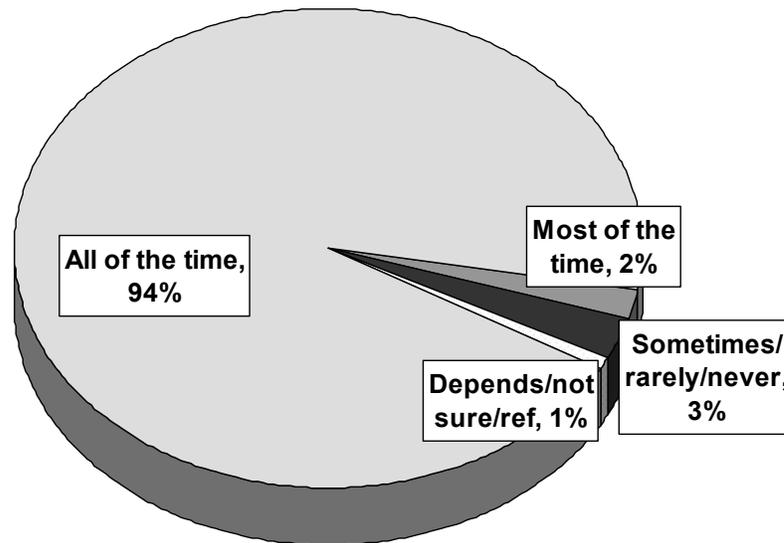
As shown in Figure 20, persons who did not live with a young child but had driven one or more young children in the past year most often were the child(ren)'s grandparents or "other relatives." Figure 21 compares these two groups in their reported frequency of driving young children. It shows that grandparents transported children more often. Among drivers who did not live with a young child but said they drove a young grandchild in the past year, 56%⁴ drove the grandchild at least a few days a month. The comparable figure was 41% for "other relatives" (excluding parents and siblings), and 52% for the total sample (relatives and non-relatives combined).



⁴ The number does not equal the sum of the components in the Figure due to rounding.

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) how often the child(ren) used restraints when riding with them. Almost all said that the child was in a child car seat or else a seat belt either all the time (94%) or most of the time (2%).

Figure 22
How Often Child Uses Car Seat Or Seat Belt:
Drivers (Not Parents) Of Children Outside Home



Qx: When you are driving and children under age 9 are riding with you, would you say that they are in a child car seat, booster 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 nine, but has driven with child passengers in that age range in the past year (who were not their own children).

Unweighted N=1284

2007 SURVEY RESULTS

CHAPTER 3: 2007 CAR SEAT USE

Parent/Caregiver Subgroup

The survey selected a subgroup of drivers to ask detailed questions about children's use of child 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:

- (1) *Parents of children under age 9.* Usually this involved a parent living with their child. Sometimes it was a parent not living with their child, but who drove the child at least on occasion during the past year.
- (2) *Non-parents living with children under age 9.* These were drivers who indicated that they at least sometimes drove with a child under 9 who lives in their household (usually a grandparent, sibling, or other relative living with the child).

Because the 1994, 1996 and 1998 Motor Vehicle Occupant Safety Surveys restricted the subgroup to parents of children under age 6 rather than under age 9, the data from the 2000, 2003 and 2007 surveys are derived from a somewhat different group. The age limit was raised in order to cover the age range for which booster seats are generally recommended (ages 4 to 8, see discussion below). The interviewers asked respondents to focus on one specific child for the questions. If there was more than one child under age 9 in the household, one child was randomly selected.⁵ 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.

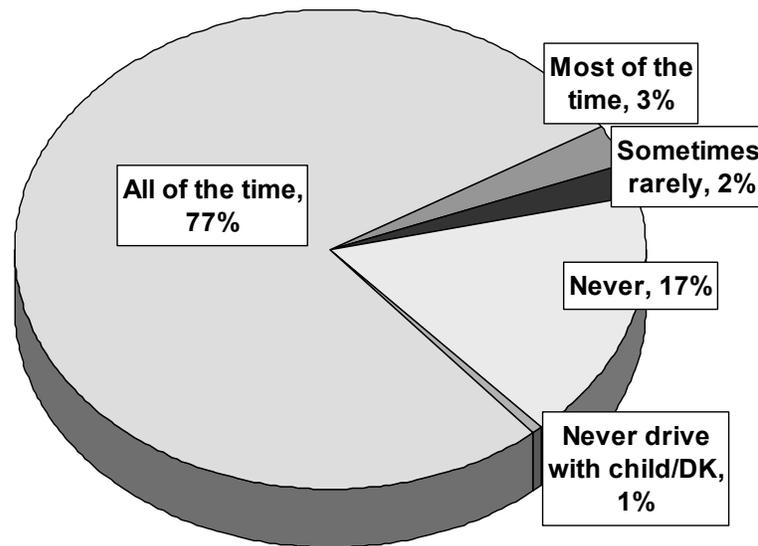
Reported Frequency Of Car Seat Use

Interviewers asked the above driver subgroup how frequently the selected child uses a car seat when riding with them. They were told that car seats for purposes of the survey included infant seats, toddler seats, and booster seats. Responses to this question are to be interpreted with caution, as car seats may not be appropriate for larger children under age 9. The safety restraint system used should be the one appropriate for the child's size and development. For the best possible protection, infants should be kept in the back seat in rear facing child safety seats as long as possible up to the height or weight limit of the particular seat. At a minimum, the infant should be kept rear facing until a minimum of age 1 and at least 20 pounds. Children who reach 20 pounds before one year of age should ride rear facing in a child safety seat recommended 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 the infant's head, neck and back and prevents spinal cord injuries in a frontal crash). When children outgrow their rear facing seats, they should ride in front facing child safety seats, in the back seat, until they reach the upper weight or height limit of the particular seat (usually around age 4 and 40 pounds). Children who have outgrown their front facing child safety seats should ride in booster seats, in the back seat, until the vehicle seat belts fit them properly (usually at age 8 or when they are 4'9" tall). Seat belts fit properly 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.

⁵ This differs from Chapter 1, which asked about the youngest child only. The Chapter 1 data were obtained from parents interviewed with the Version 1 Questionnaire. The above parent/caregiver was a different sample interviewed with the Version 2 Questionnaire.

The majority of the parent/caregiver subgroup reported that the selected child used a car seat “all of the time” (77%). About one-fifth said the selected child “never” used a car seat (17%). Only 5% said that the child was a car seat user, but not all the time (2.7% most of the time, 1.7% sometimes, and 0.4% rarely). A few said they never drive with that child (0.6%). Less than 0.1% said they did not know or refused to respond.⁶ If the child never used a car seat, it usually was because the child reportedly had graduated to seat belt usage (see Figures 72 and 73).

Figure 23
Frequency Child Under 9 Rides In Car Seat



Qx: When you are driving and the (AGE)⁶ 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?

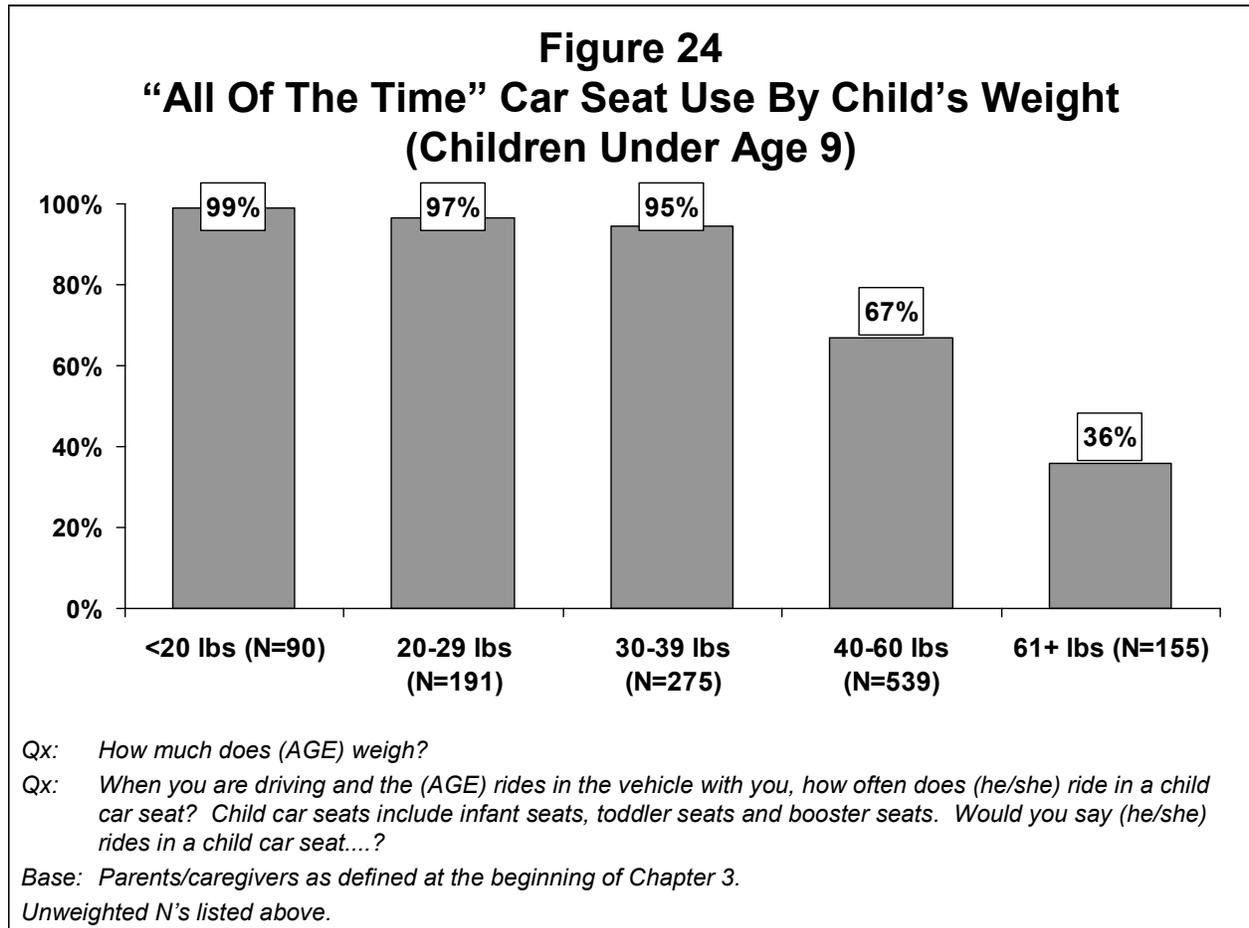
Base: Parents/caregivers as defined at the beginning of Chapter 3.

Unweighted N=1262

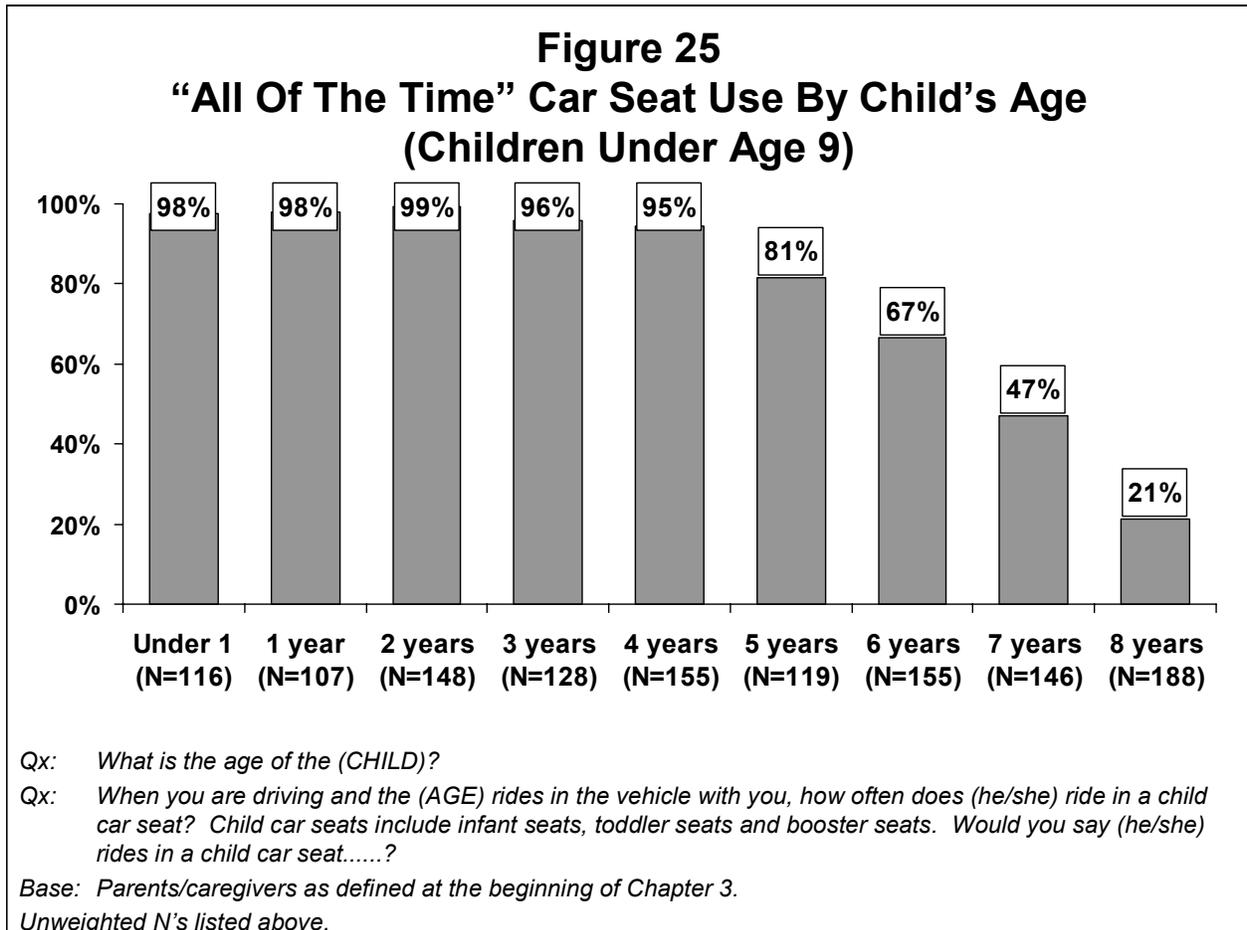
The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded.

⁶ Words in parentheses within a question (see Qx in Figure 23) indicate wording read by the interviewer that was inserted through computer programming at the time of the interview. In this case the actual age of the referent child, obtained earlier during the interview, was inserted into the question.

Consistent car seat use is related to weight of the child. Nearly all parents/caregivers in the survey reported that the selected child always used a car seat when riding with them if the child weighed less than 40 pounds. Regular use declined to 67% of children weighing 40-60 pounds while only 36% of children weighing 61 pounds or more used a car seat all of the time (this largely reflected the graduation of these children to seat belts).

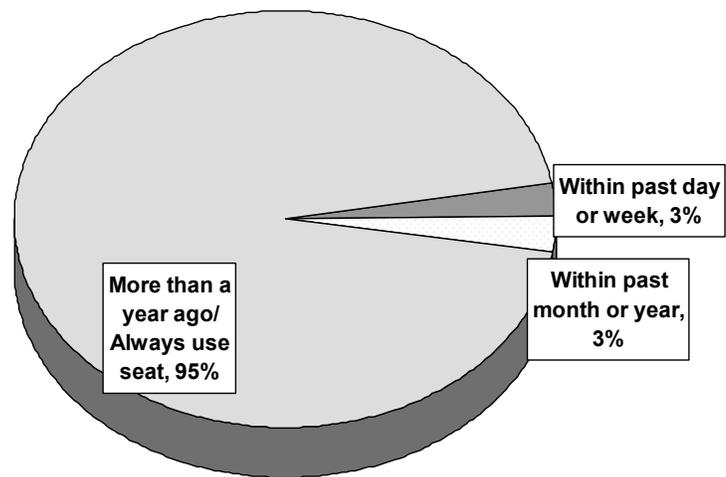


More than 90% of children are reported using child car seats through the age of 4. After that, usage declines, with fewer than one-half of children using them all the time by age 7. As stated earlier, car seats for purposes of this survey included infant seats, toddler seats, and booster seats. Children who have outgrown front facing child safety seats should ride in booster seats until the vehicle seat belts fit properly, which is usually at age 8 or when they are 4'9" tall.



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 (6% of drivers in 2007; see Volume 2 of this series: Seat Belt Report). Figure 27 examines whether this discrepancy also occurs for reported car seat use. Among drivers who said the child always used a car seat when riding with them, 3% 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 and another 3% said the child had not ridden in a car seat at least once in the past month or year.

Figure 26
Last Time Child Didn't Use Car Seat
(If Child Was Reported To Use Seat “All Of The Time”)



Qx: When you are driving and the (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 the (AGE) 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 the (AGE) did not ride in a car seat when you were driving?

Base: Drivers who said child uses car seat “all of the time” when they drive.

Unweighted N=941

The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded.

Type And Location Of Car Seat

The remainder of this chapter summarizes data exclusively for those children that the survey determined at least on occasion used a child restraint while riding in motor vehicles. Excluded from the analyses were children whom parents/caregivers said never used a child seat (infant seat, front facing child safety seat, or booster seat), and children whom the parents/caregivers never drove. Also excluded were cases where parents/caregivers did not respond when asked how often the child used a child seat (an entry question to the series).

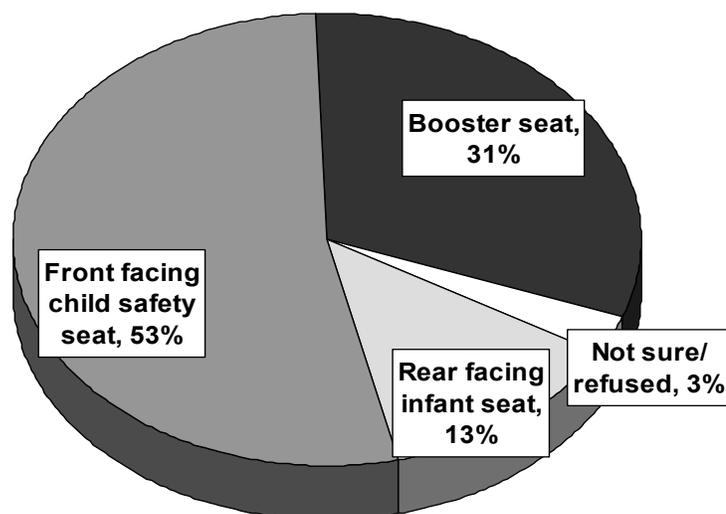
Parents/caregivers who reported car seat use for the designated child were asked questions to identify the type of seat being used. During previous surveys, this was done by asking strap location. In part, this was due to the lack of familiarity that the public had with child seat terminology when the survey was first administered in 1994 (e.g., respondents couldn't be directly asked if they were using booster seats because many had not heard of the term). But it resulted in some obvious errors in the seat categorizations. The 2007 survey revised the questions used to determine seat category in order to reduce the errors. The interviewers first asked "When the (AGE) rides in the child car seat, does the child wear harness straps that go over the shoulders and buckle between the legs? If yes, then the respondent was asked if the child rode forward facing or rear facing. If no, then the respondent was asked "Does the (AGE) ride in a booster seat?" If the respondent indicated "no" then he or she was asked to provide information on the type of car seat used.

The analyses conducted for this report almost always used the first 3 questions mentioned above to determine the type of child restraint: 1) "yes" to harness and front facing was a front facing child safety seat; 2) "yes" to harness and rear facing was an infant seat; and 3) "no" to harness and "yes" to booster seat was a booster seat. In cases where the type of seat could not be determined from those items, responses to the open-ended question asking the type of seat were then examined to see if a seat determination could be made. In 3 cases, the respondent specifically referred to the seat as a booster seat, so the analyses here treat the seat as a booster seat. In one other case, the product name of the seat indicated it was an infant seat, so it is treated as such for the analyses. This still left some seats where a definite determination could not be made. And there remained a few obvious errors in how respondents described the seats, attesting to the difficulties in making such determinations over the phone.

The remainder of this chapter presents data only for those children using child restraints at least on occasion. Please refer to Tables 15 and 16 for percentages of all children at a specified age or weight using a particular type of restraint.

Based on the definition described on the previous page, the survey determined that about 31% of children under age 9 who at least on occasion were using child restraints were riding in booster seats. Of the remainder, 53% were riding in front facing child safety seats, 13% in rear facing infant seats, and about 3% did not provide information from which the type of child seat could be determined.

Figure 27
Type Of Child Car Seat



Qx: *When the (AGE) rides in the child car seat, does the child wear harness straps that go over the shoulders and buckle between the legs?*

Qx: *Is the (AGE) usually in a front facing position when riding in the car seat, where the child faces towards the front of the vehicle? Or is the child usually in a rear facing position when riding in the car seat, where the child faces towards the rear of the vehicle?*

Qx: *Does the (AGE) ride in a booster seat?*

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

Unweighted N=1009

2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

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 (80%) did ride in a rear facing position. But 13% rode in front facing child safety seats, with another 5% in booster seats. Front facing child safety seats predominated among one-year-olds (86%), two-year-olds (95%), and three-year-olds (78%). Booster seats accounted for 16% of car seat users among three-year-olds, and then nearly tripled to 43% at age 4. After age 4, booster seats became the predominant child restraint used by children.

Some of the Table 3 numbers reflect the difficulties discussed 2 pages earlier about collecting accurate data on type of child restraint. For example, the survey identified booster seat use by some infants, as well as some older children using rear facing infant seats. Thus readers are cautioned about error within the data.

Table 3
Type Of Child Car Seat By Child's Age

Age (Unweighted N)	<1 (114)	1 (106)	2 (148)	3 (128)	4 (152)	5 (103)	6 (121)	7 (78)	8 (59)
Rear facing seat	80%	14%	1%	4%	2%	6%	2%	--	1%
Front facing seat	13%	86%	95%	78%	47%	34%	29%	25%	27%
Booster seat	5%	--	3%	16%	43%	57%	67%	73%	69%
Undetermined	2%	*	1%	1%	8%	3%	3%	3%	3%

Qx: *When the (AGE) rides in the child car seat, does the child wear harness straps that go over the shoulders and buckle between the legs?*

Qx: *Is the (AGE) usually in a front facing position when riding in the car seat, where the child faces towards the front of the vehicle? Or is the child usually in a rear facing position when riding in the car seat, where the child faces towards the rear of the vehicle?*

Qx: *Does the (AGE) ride in a booster seat?*

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

* *Less than 0.5%. -- No cases.*

2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

About four-fifths (79%) of children weighing less than 20 pounds who used a child seat rode in a rear facing position. A small portion (5%) appeared to be using booster seats although, as mentioned earlier, at least some respondents may have made mistakes in describing the seat. Others (13%) provided information suggesting that the child usually rode front facing in a child safety seat. Front facing child safety seats predominated at 20 to 29 pounds (81%) and 30-39 pounds (75%). Children 40-60 pounds were more likely to ride in booster seats (59%) than in front facing child safety seats (35%). Children over 60 pounds were much more likely to ride in booster seats (68%) than front facing child safety seats (30%). Readers are cautioned that some respondents may have been guessing at children's weights.

**Table 4
Type Of Child Car Seat By Child's Weight**

Weight (Unweighted N)	Less than 20 pounds (89)	20-29 pounds (189)	30-39 pounds (266)	40-60 pounds (397)	61 or more pounds (59)
Rear facing seat	79%	17%	4%	3%	--
Front facing seat	13%	81%	75%	35%	30%
Booster seat	5%	*	18%	59%	68%
Undetermined	3%	2%	3%	3%	2%

Qx: *When the (AGE) rides in the child car seat, does the child wear harness straps that go over the shoulders and buckle between the legs?*

Qx: *Is the (AGE) usually in a front facing position when riding in the car seat, where the child faces towards the front of the vehicle? Or is the child usually in a rear facing position when riding in the car seat, where the child faces towards the rear of the vehicle?*

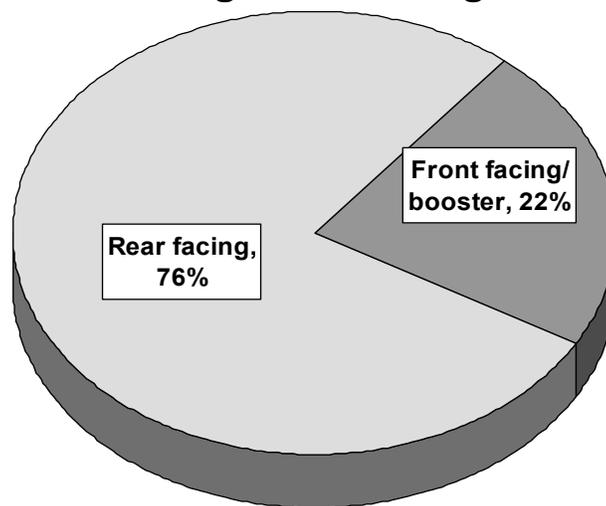
Qx: *Does the (AGE) ride in a booster seat?*

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

* *Less than 0.5%. -- No cases.*

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 recommended at a higher weight. Keeping a child rear facing as long as possible helps protect the fragile baby from spinal cord injuries. Figure 29 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 (76%) were riding in the correct rear facing position, nearly one-quarter were not (22%).

Figure 28
Car Seat Position Of Children Who Should Be Riding Rear Facing



Qx: When the (AGE) rides in the child car seat, does the child wear harness straps that go over the shoulders and buckle between the legs?

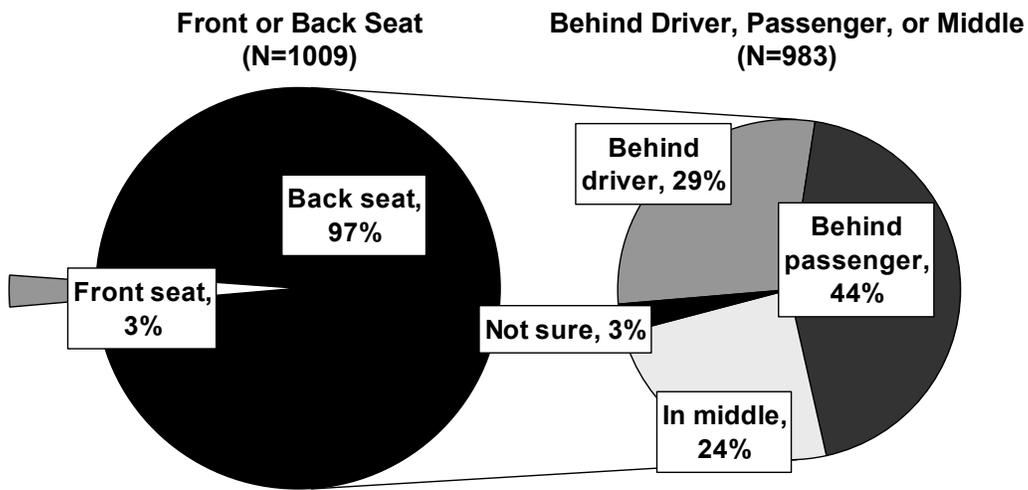
Qx: Is the (AGE) usually in a front facing position when riding in the car seat, where the child faces towards the front of the vehicle? Or is the child usually in a rear facing position when riding in the car seat, where the child faces towards the rear of the vehicle?

Qx: Does the (AGE) ride in a booster seat?

Base: Children under 1 year of age, and children under 20 pounds, who at least on occasion ride in a child car seat.
Unweighted N=127

The vast majority of parents/caregivers (97%) stated that the child usually sat in the back when riding in a car seat in a vehicle they were driving, most often behind the front passenger (44%), less often in the middle of the back seat (24%) or behind the driver (29%). Three percent reported that the car seat was usually placed in the front.

**Figure 29
Placement Of Child's Car Seat**



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

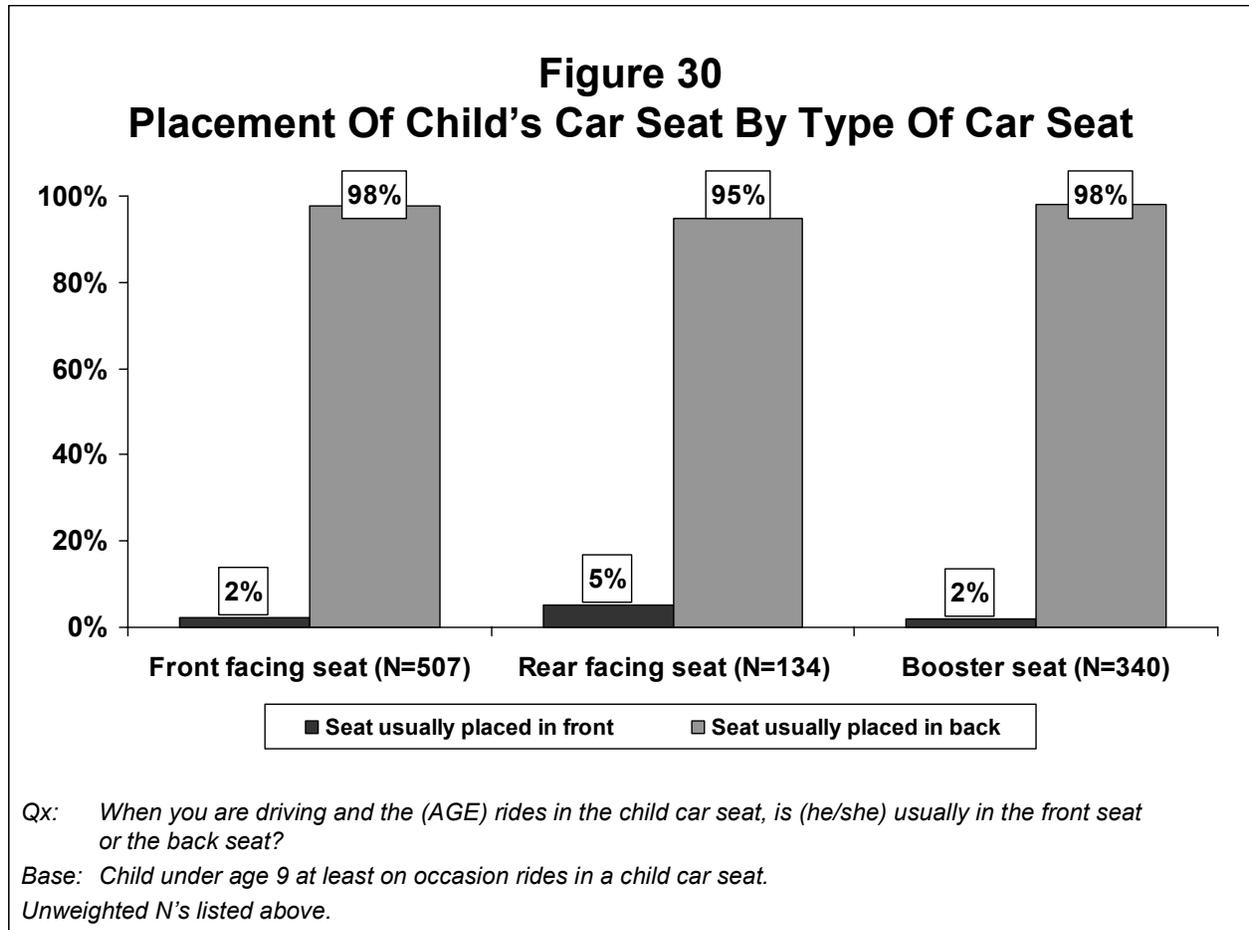
Qx: Is the child car seat usually behind the driver, behind the passenger, or in the middle of the back seat?

Base: Child under age 9 at least on occasion rides in a child car seat.

Unweighted N's listed above.

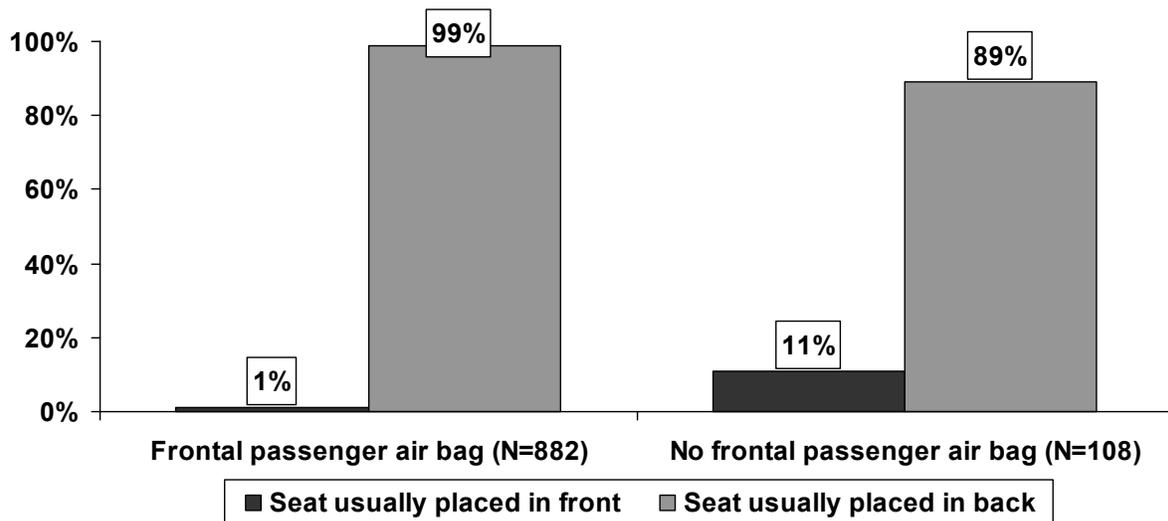
2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

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 front facing toddler seat (98%), a rear facing infant seat (95%), or a booster seat (98%).



Proportionally fewer parents/caregivers permitted the child car seat to be placed in the front if there was a frontal passenger air bag installed in their primary vehicle. If there was no frontal passenger air bag in the respondent's primary vehicle, then 11% of the parents/ caregivers said that the child seat was usually in the front. If the primary vehicle had a frontal passenger air bag, then only 1% said the car seat was usually in the front.

Figure 31
Placement Of Child's Car Seat By Presence Of Frontal Passenger Air Bag In Primary Vehicle



Qx: Does the (car/truck/van) you normally drive have an air bag?

Qx: Does that (car/truck/van) have an air bag in front of where a passenger would sit in the front seat?

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

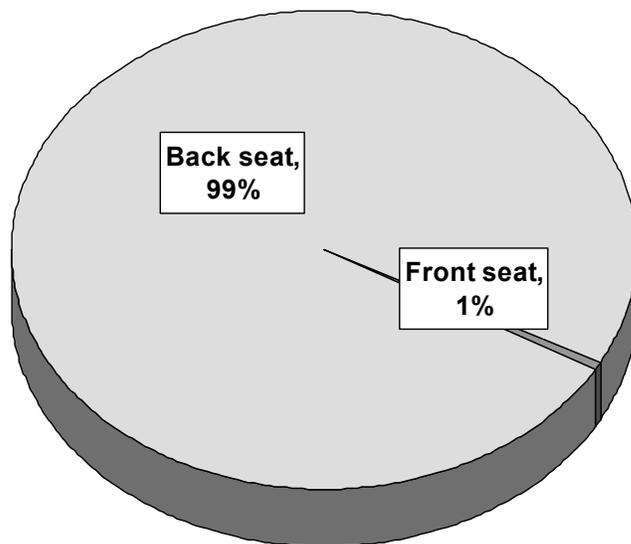
Base: Child under age 9 at least on occasion rides in a child car seat.

Unweighted N's listed above.

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

Almost all parents/caregivers (99%) considered the back seat the safest location to place a child car seat in a vehicle. The 1% who thought the front seat was safest contrasts with the 3% who said that the child car seat was usually in the front seat when they drove (see Figure 29).

Figure 32
Where It Is Safest To Place A Child Car Seat
In The Vehicle



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 under age 9 at least on occasion rides in a child car seat.*

Unweighted N=1009

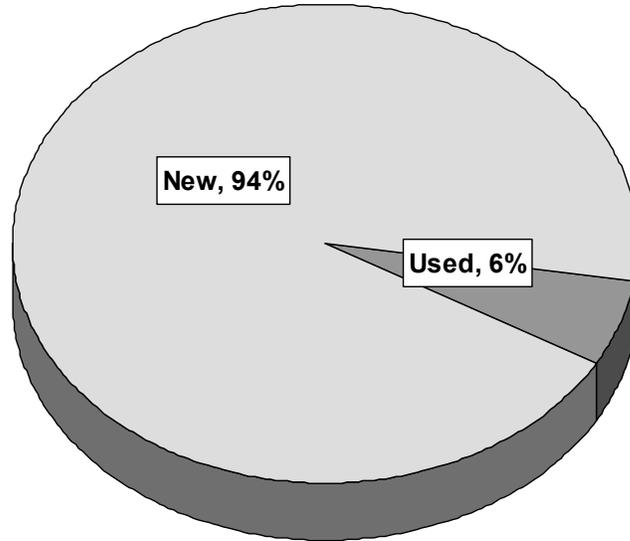
2007 SURVEY RESULTS

CHAPTER 4: 2007 CAR SEAT INSTALLATION, INSPECTION AND TRAINING

Acquisition Of Car Seat

Most car seats (94%) were obtained new. Less than one-in-ten (6%) were acquired used.

Figure 33
Whether Car Seat Was New Or Used When Acquired



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 under age 9 at least on occasion rides in a child car seat.

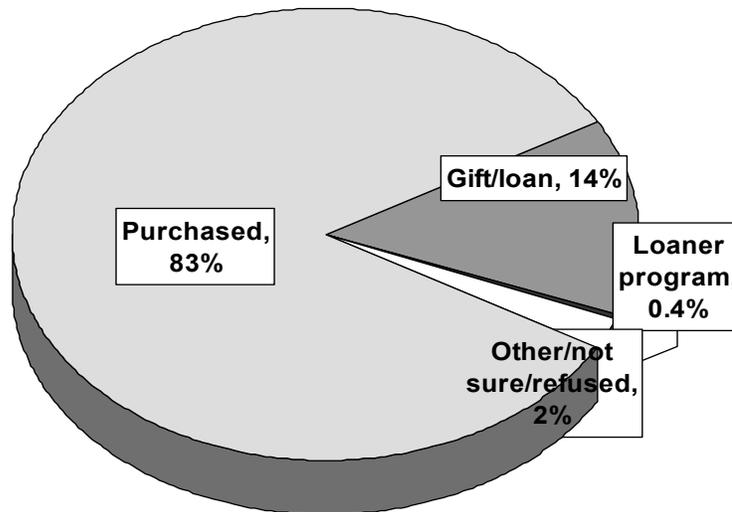
Unweighted N=1009

Less than 0.6% answered not sure/refused.

2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

More than four-fifths of car seats (83%) were purchased, while 14% were acquired as a gift or loaner from a relative or friend. Less than 1% obtained the car seat from a loaner program (0.4%).

Figure 34
How Child's Car Seat Was Obtained



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 (such as a hospital or other organization that loans you a car seat which must be returned)?

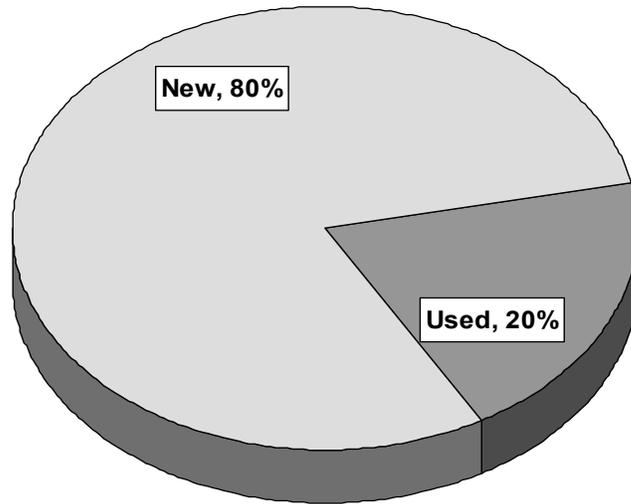
Base: Child under age 9 at least on occasion rides in a child car seat.

Unweighted N=1009

The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded.

One-fifth (20%) of parents/caregivers who said that they received the seat as a gift or loaner from a relative or friend also answered that the seat was used.

Figure 35
Whether Car Seat Was Obtained New or Used:
Seat Received As Gift Or Loaner From Relative/Friend



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

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 (such as a hospital or other organization that loans you a car seat which must be returned) ?*

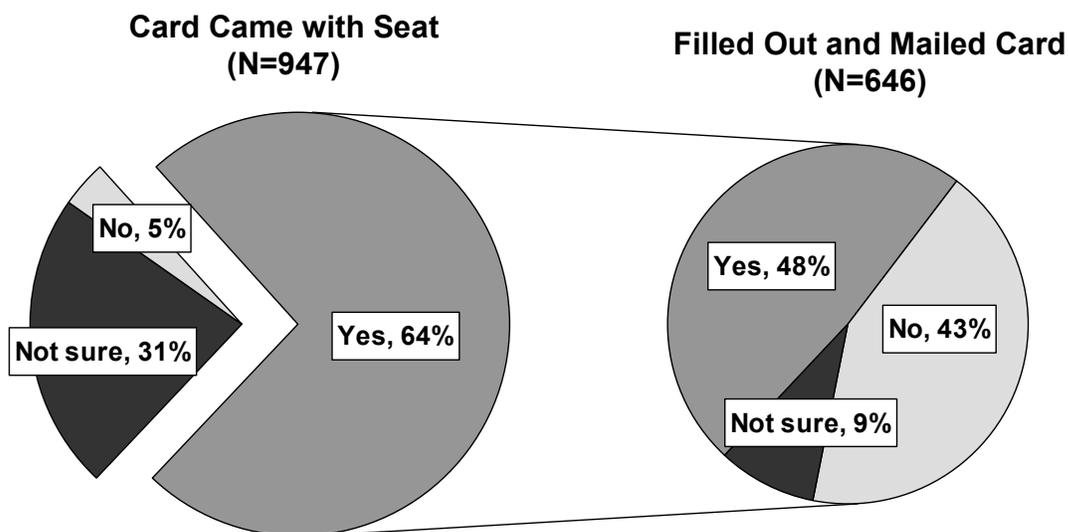
Base: *Obtained the car seat as a gift or loaner from a relative or friend.*

Unweighted N=139

2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

Occasions sometimes arise where it is important to reach consumers of specific products with safety information pertaining to those products. A means of locating persons for that purpose is to collect contact information through registration cards that accompany the products. The 2007 survey asked respondents whether a registration card came with the car seat when they got it, and if so, did they fill it out and mail it back. Only parents/ caregivers who said they obtained the car seat new received the questions. Almost two-thirds (64%) said a registration card came with the seat. Of these, 48% mailed back the card. Overall, 31% of those who had obtained a child car seat new indicated that a registration card came with the seat, and that they mailed it back (48% of the 64%).

Figure 36
**Presence Of Registration Cards With Car Seats,
And Whether The Cards Were Mailed Back**



Qx: Was there a registration card that came with the car seat when you got it?

Qx: Did you fill out and mail the registration card?

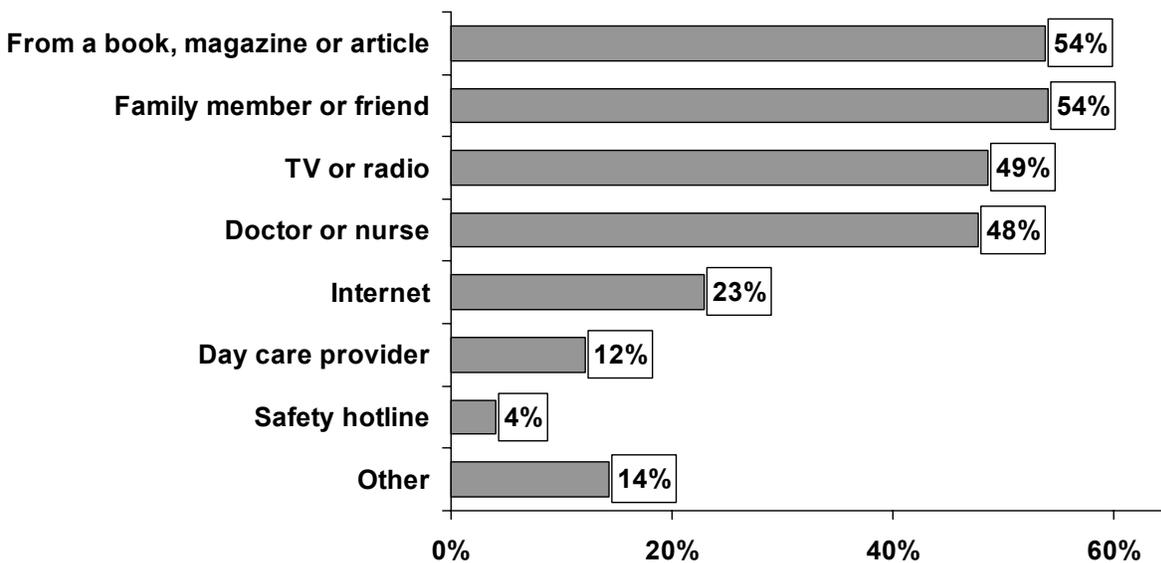
Base: Obtained the car seat new.

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. Seven 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 car seats from a book, magazine or article (54%), from a family member or friend (54%) from TV or radio (49%), or from a doctor or nurse (48%).

Figure 37
Sources For Information On Child Car Seats



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...?*

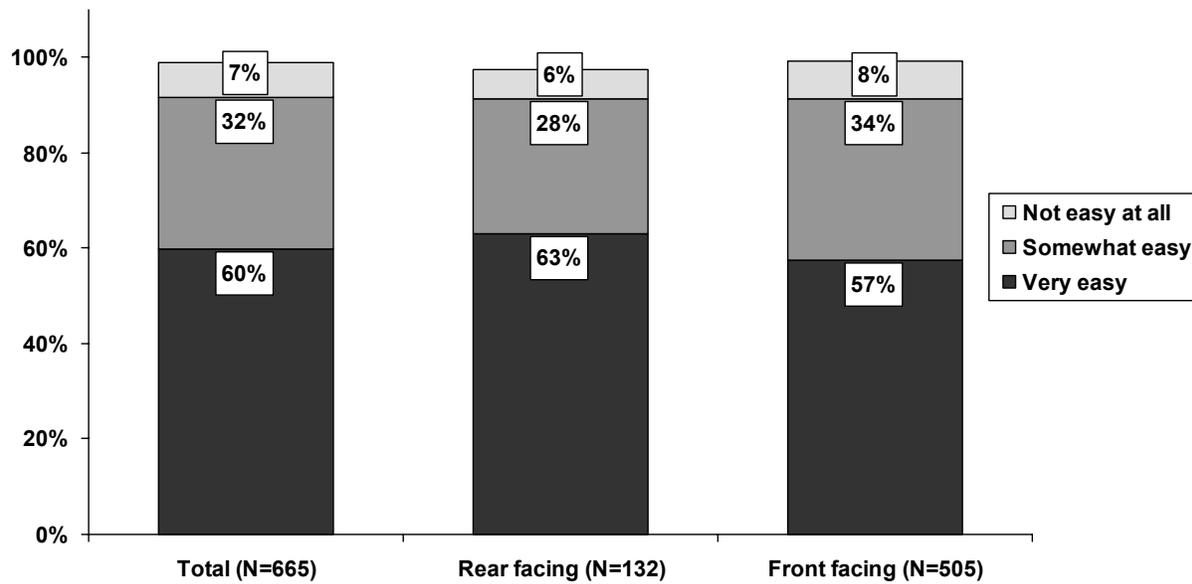
Base: *Child under age 9 at least on occasion rides in a child car seat.*

Unweighted N=1009

Ease Of Use

Most parents and caregivers reported that they had relatively little difficulty installing their children’s car seats regardless of the type of seat. Overall, three-fifths of parents/caregivers (60%) considered it very easy to attach the car seat to the vehicle they usually drove. An additional 32% considered it somewhat easy.

**Figure 38
Ease Of Attaching Car Seat To Vehicle**



Qx: How easy is it for you to attach the child car seat to the vehicle you usually drive...

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

Unweighted N's listed above.

2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

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. The two most frequent responses were hooking it/attaching to the seat belt (32%) and adjusting the seat belt to make sure it was tight enough (28%).

Table 5
What Is Difficult About Attaching Car Seat To Vehicle

Obstacle	Percent
Hooking it/attaching to the seat belt (or buckle)	32%
Adjusting the seat belt/making sure it's tight enough	28%
Fitting the seat belt through the car seat hole/loop	18%
Not enough room to maneuver/design of back seat makes it awkward	9%
I have to put my hand/arm through back of child car seat	5%
Car seat is too big/bulky/cumbersome/heavy	1%
No latch system in vehicle/not compatible with vehicle	1%
Adjusting the belt away from child's neck/face/head	1%
Other	2%
No instructions/difficult instructions	1%
Nothing is difficult	2%
Not sure/refused/no answer	10%

Qx: What is difficult about attaching the child car seat to the vehicle?

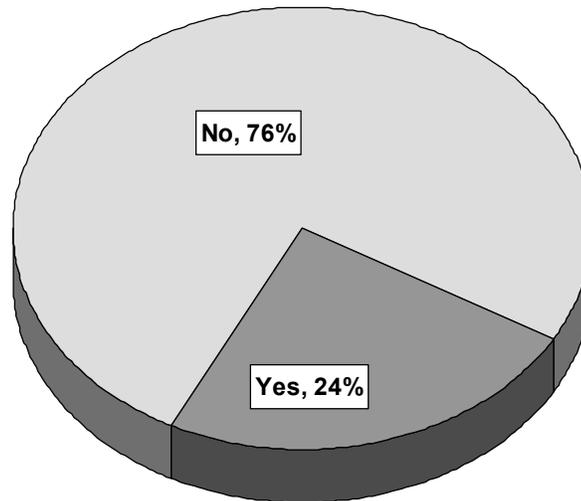
Base: Said it was somewhat easy or not easy at all to attach the car seat to the vehicle.

Unweighted N=275

Total exceeds 100% due to multiple responses.

The results presented on the previous pages suggest that parents and other caregivers generally believe that they are installing child 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. Nearly one-quarter (24%) answered “yes”.

Figure 39
Driven With Child In Car Seat And Found Car Seat Was Not Securely Attached



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 under age 9 at least on occasion rides in a child car seat that is not a booster seat, and the car seat did not come attached to the vehicle.

Unweighted N=665

The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded.

Less than 0.3% answered not sure/refused.

2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

Those respondents who acknowledged driving with the child and later discovered that the car seat was not securely attached were asked why this happened. The responses tended to revolve around attachment difficulties, carelessness, accidental behavior by accompanying children, movement of the seat within the vehicle to another vehicle or mistakes by others.

**Table 6
Reasons Why Car Seat Was
Not Securely Attached**

Reason	Percent
Child seat attachment	24%
Difficult to attach tightly enough/car's seat belt can't be tightened adequately	21%
Didn't understand how to attach/install it properly	2%
Safety belt did not catch/engage properly	*
Child's movement/behavior	25%
Other child loosened baby's car seat accidentally	18%
Child knows how to unbuckle/undo seat belt him/herself	7%
Miscellaneous	48%
Forgot/wasn't paying attention/carelessness	20%
Moved car seat between cars/within same car	18%
Car seat was put in by spouse/someone else who didn't attach it right	11%
Belts/restraints broken	*
Other	1%
Not sure/refused/no answer	4%

Qx: *Why did this happen?*

Base: *Drove with child and later found that car seat was not securely attached.*

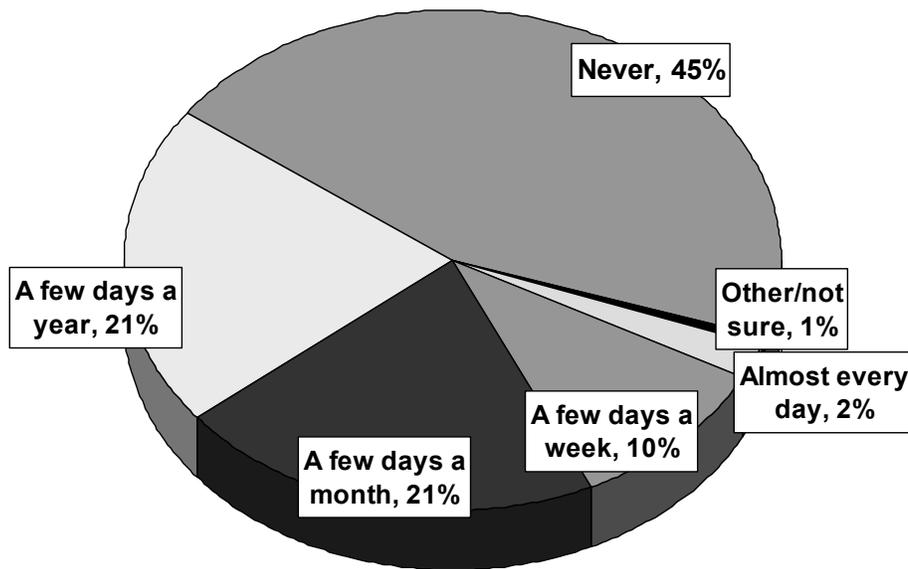
Unweighted N=177

** Less than 0.5%.*

Total exceeds 100% due to multiple responses.

Table 6 on the preceding page showed movement of car seats within/between vehicles to be one of the more frequently given explanations for instances where a car seat was found not to be securely attached. Transfer of car seats from one vehicle to another occurs with regularity for some parents/caregivers. One-in-eight respondents (13%)⁷ said they move the child car seat from one vehicle to another at least a few days a week. An additional 21% do so a few days a month.

Figure 40
Frequency Car Seat Is Moved To Another Vehicle



Qx. How often do you move the child car seat from one motor vehicle to another motor vehicle? Would you say that you move the child car seat from one motor vehicle to another almost every day, a few days a week, a few days a month, a few days a year, or never?

Base: Child under age 9 at least on occasion rides in a child car seat.

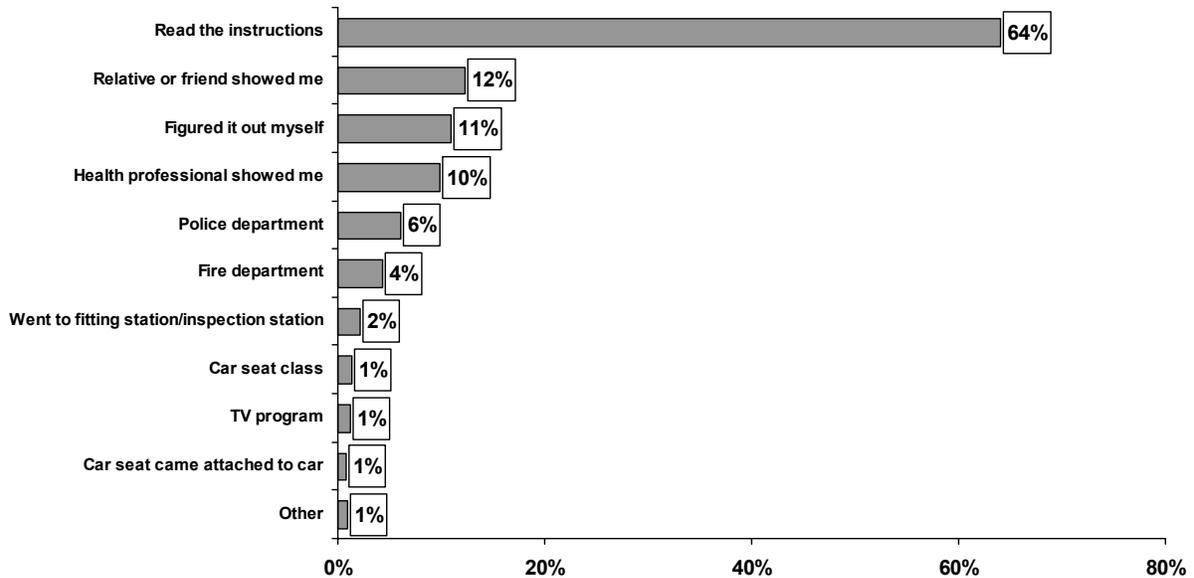
Unweighted N=1009

⁷ The number does not equal the sum of the components in the Figure due to rounding.

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Most often, the respondents said that they learned how to attach the child car seat to the vehicle by reading the instructions (64%). Twelve percent said they had a friend or relative show them and 11% figured it out themselves.

Figure 41
How Learned To Attach Car Seat To Vehicle



Qx: How did you learn to attach the child car seat to the vehicle?

Base: Child under age 9 at least on occasion rides in a child car seat that is not a booster seat.

Unweighted N=669

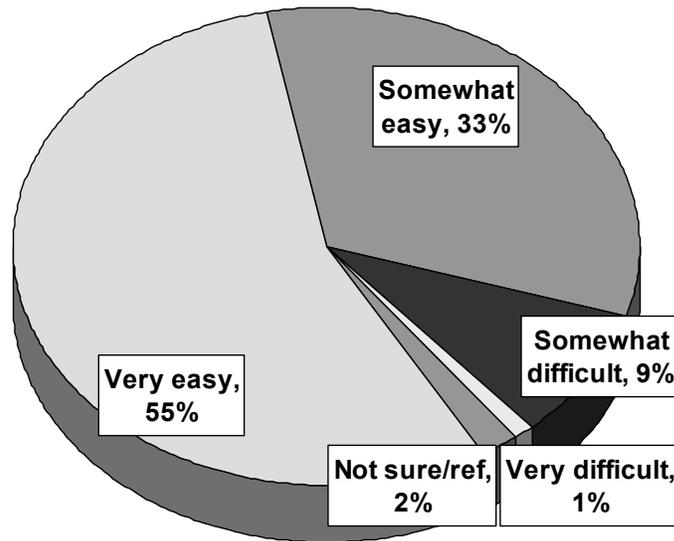
Total exceeds 100% due to multiple responses.

Understanding The Car Seat Instructions

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 three-quarters (77%) said they had.

In total, 87% of parents/caregivers had read the car seat instructions.⁸ Of these, 55% said the instructions were very easy to understand; 33% said they were somewhat easy. Among those who said they did not read the instructions, 66% conceded that the instructions were available.

Figure 42
How Easy Or Difficult The Car Seat Instructions
Were To Understand



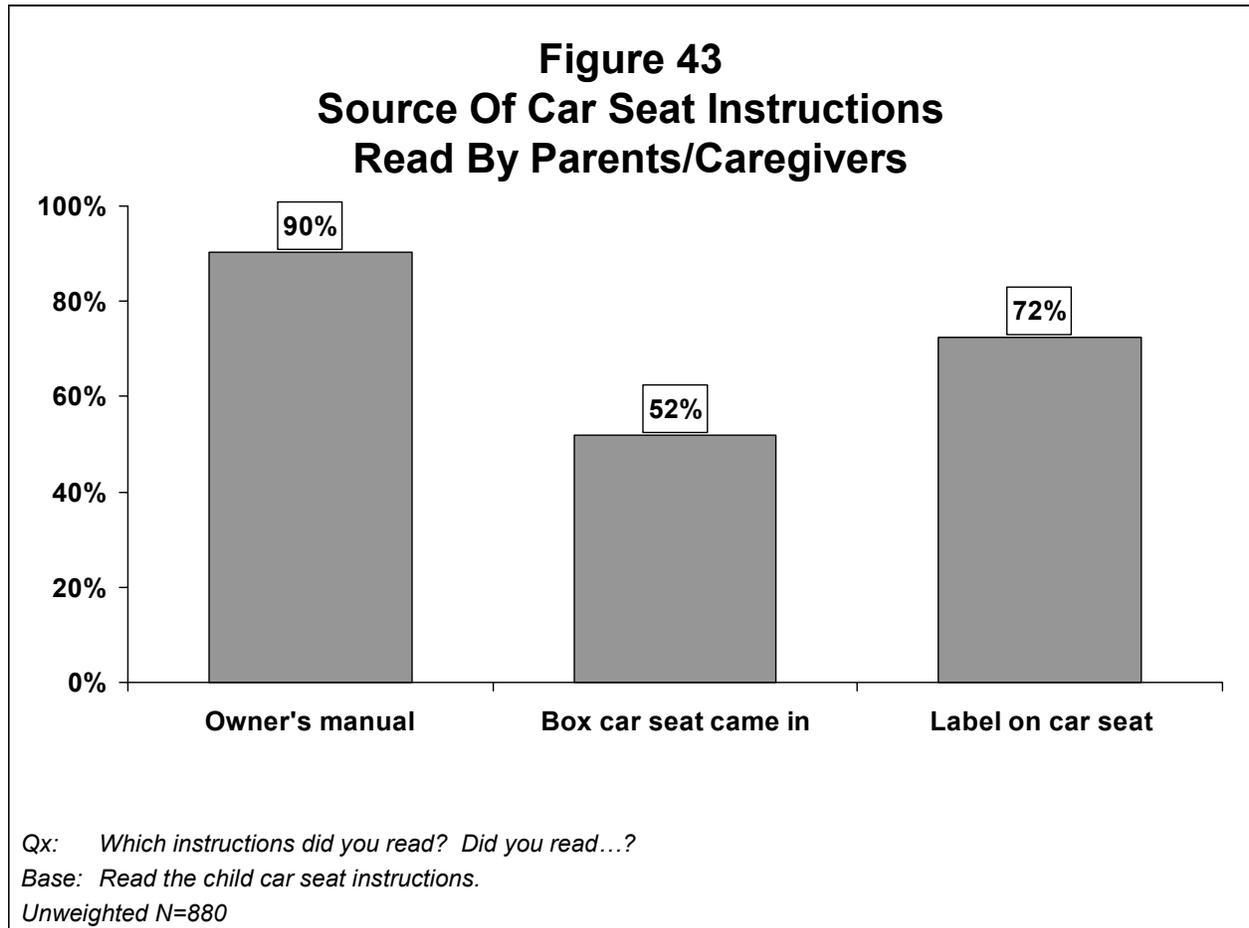
Qx: How easy or difficult were the instructions to understand? Would you say that the instructions were very easy, somewhat easy, somewhat difficult, or very difficult to understand?

Base: Read the child car seat instructions.

Unweighted N=880

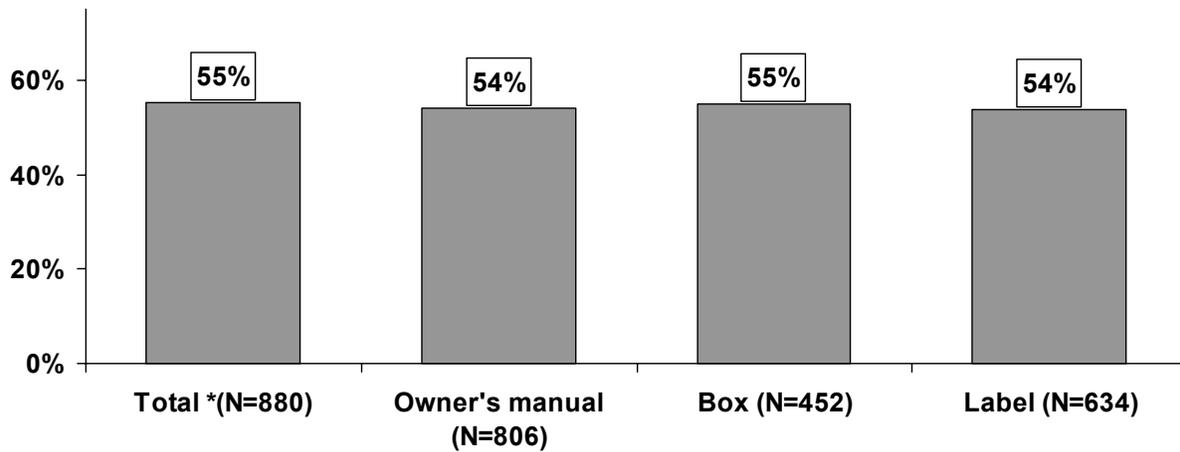
⁸ This percentage combines those who said they learned to attach the seat by reading the instructions (Figure 41) with those who did not say they learned how to install the seat from the instructions but did read them (paragraph 1 above).

Parents/caregivers were also asked which instructions they had read. Specifically, did they read the instructions that were on the box for the car seat, the instructions that were on the label of the car seat, or the instructions that came in the owner's manual. The respondents could select more than one source, thus the sum of the percentages for the different instruction materials exceeded 100%. Most often, the respondents indicated that they had read the owner's manual (90%).



As shown in Figure 42, 55% of all parents/caregivers who read the child car seat instructions thought they were very easy to understand. The survey found no appreciable variation in this percentage according to the source of the instructions.

Figure 44
Very Easy To Understand Car Seat Instructions
By Source Of Instructions



Qx: Which instructions did you read? Did you read...?

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.

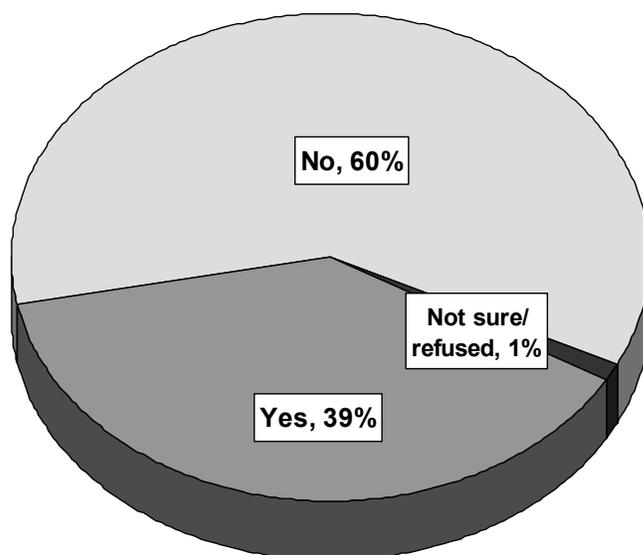
Unweighted N's listed above.

* The sum of the N-sizes for Manual/Box/Label exceeds the N-size for Total because respondents could select more than one source of instructions that they read.

LATCH System

Parents/caregivers were asked a series of questions on their knowledge and use of the LATCH attachment system (Lower Anchors and Tethers for Children). LATCH is intended to make safety seat installation easier by providing a means of attaching the car seat to the vehicle seat without having to use the vehicle seat belt. LATCH child safety seats have a lower set of attachments that connect to bars (“anchors”) in the vehicle seat of LATCH-equipped motor vehicles, and most of the child seats have an upper tether to attach to a top anchor in the vehicle. LATCH is required in nearly all passenger vehicles and all child safety seats (not required for booster seats, car beds, and vests) manufactured after September 1, 2002. In 2007, 39% of parents/caregivers who had a child that used a child restraint had heard of LATCH.

Figure 45
Ever Heard of LATCH



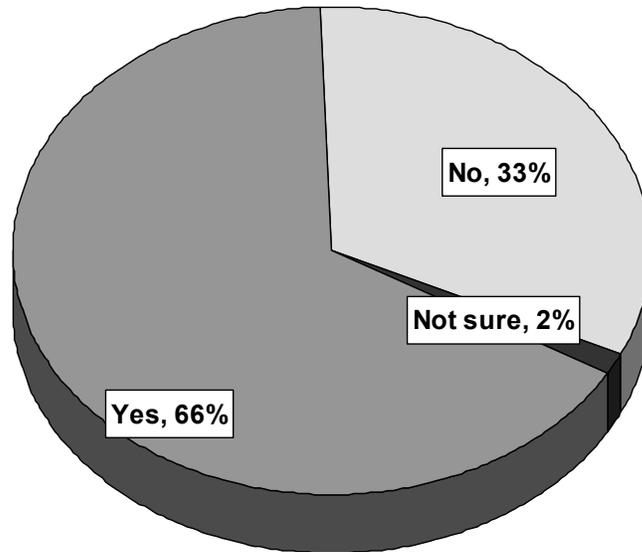
Qx. Recently a new way of attaching child car seats has been developed called LATCH. That's short for Lower Anchors and Tethers for Children. Before today, had you ever heard of LATCH?

Base: Child under age 9 at least on occasion rides in a child car seat.

Unweighted N=1009

About two-thirds of respondents who had heard of the LATCH system had used a LATCH system child car seat. This translates to about 25% of all parents/caregivers with children in car seats.

Figure 46
Ever Used LATCH Car Seat



Qx. Have you ever used a LATCH system child car seat?

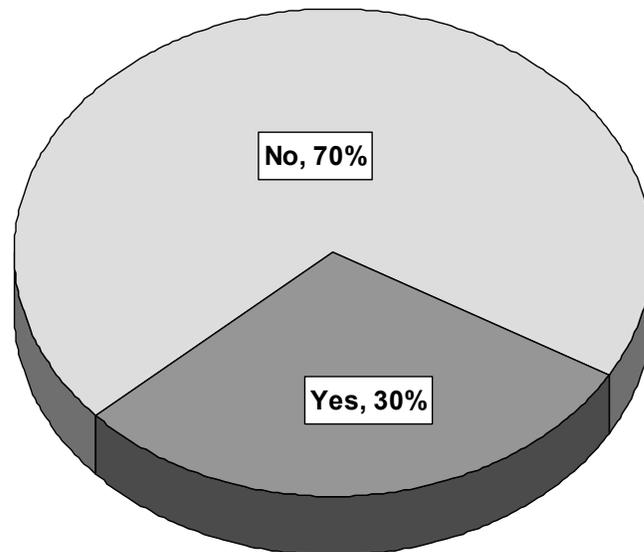
Base: Had heard of LATCH.

Unweighted N=433

The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded

While the majority said they had no difficulties, almost one-third who had used a LATCH system child car seat said they had difficulties attaching the seat to the vehicle.

Figure 47
Difficulties Attaching LATCH System



Qx. *Did you have any difficulties attaching the LATCH system car seat to the motor vehicle?*
Base: *Used a LATCH system child car seat*
Unweighted N=273

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The most common difficulty in attaching the LATCH system car seat was anchoring the car seat properly/finding a place to attach the tether (49%). Nearly four-in-ten mentioned that the instructions were difficult to understand how to attach the car seat (38%).

Table 7
Difficulties Attaching The LATCH Car Seat

Reason	Percent
Anchoring the car seat/finding place to attach the tether	49%
Following instructions/difficult to attach properly	38%
Hard to move or adjust the seat after installed	6%
Hard to get the belt through the hole in the car seat	4%
Setting car seat at proper level	1%
Not sure	4%

Qx. *What difficulties did you have?*

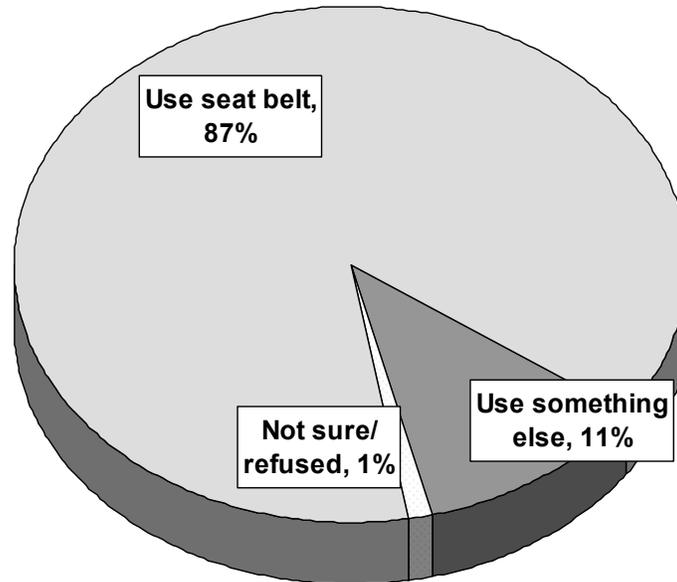
Base: *Parents/caregivers who said they had difficulties attaching the LATCH system car seat.*

Unweighted N=86

Total exceeds 100% due to multiple responses.

Because some parents/caregivers may be using LATCH but are unfamiliar with its terminology, all parents/caregivers of children using infant or front facing toddler seats (but not integrated seats) were asked if they were using the vehicle seat belt or something else to attach the child seat to the vehicle. The vast majority (87%) said they were using the vehicle seat belt.

Figure 48
Attachment of Child Car Seat to Vehicle



Qx. When you attach the child car seat to your (car/truck/van) do you use the seat belt in the (car/truck/van) to attach the child car seat, or do you use something else to attach the child car seat to the vehicle?

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

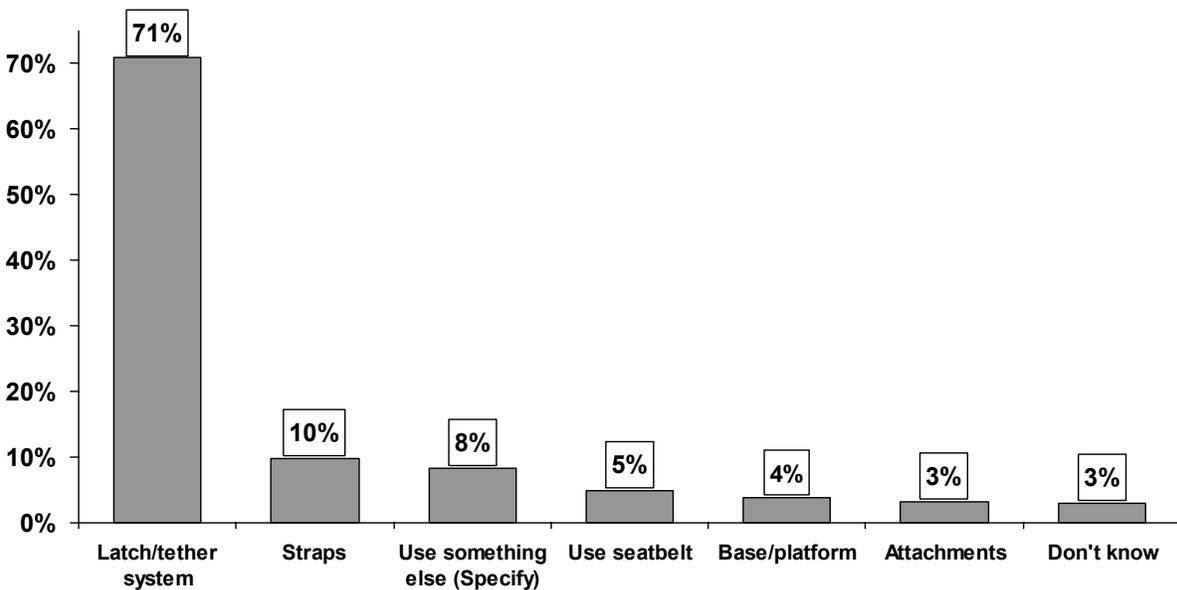
Unweighted N=665

The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded.

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As indicated on the previous page, few drivers reported using something other than the vehicle seat belt to attach the child car seat to their motor vehicle. Among those that did, the more common responses were that there was a “latch” or “tether system” to the seat that they used. Three respondents indicated using both a vehicle seat belt and LATCH.

Figure 49
Other Methods Child Car Seat Is Attached To Vehicle



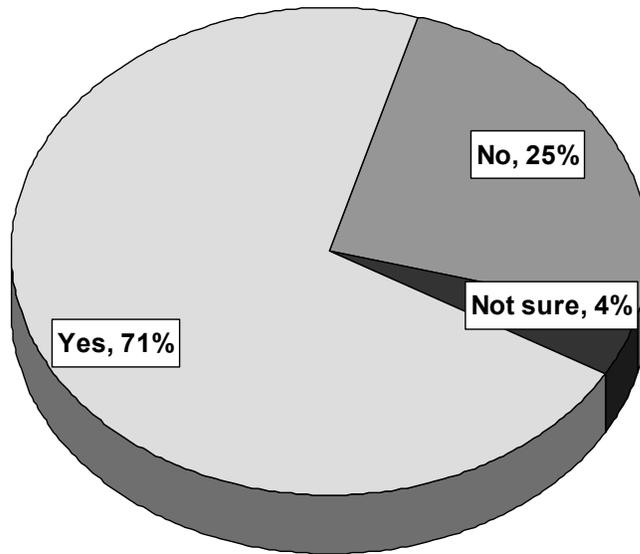
Qx. What do you use to attach the child car seat to your (car/truck/van)?

Base: Drivers who use something else other than a seat belt to attach the child car seat.

Unweighted N=87

The majority of parents/caregivers with front facing toddler child car seats reported that it had a top tether strap on the back of the car seat, near the top.

Figure 50
Does Child Car Seat Have Tether Strap



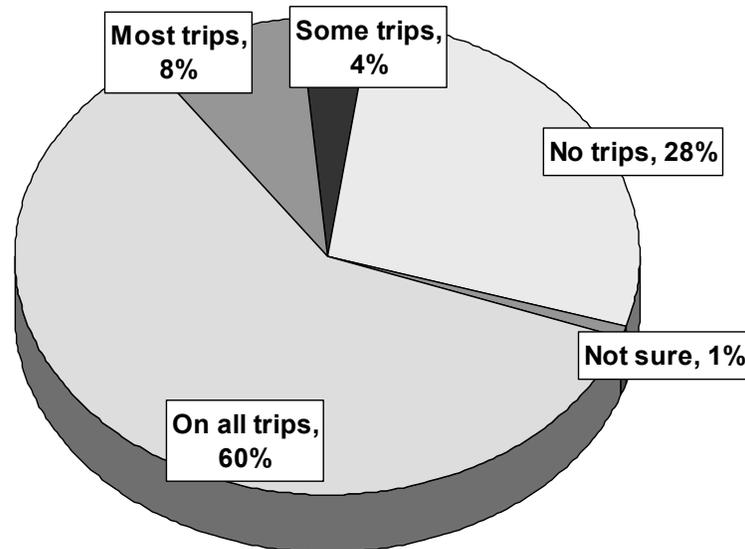
Qx. *Some child car seats have a strap on the BACK of the car seat, near the top. This strap or tether is designed to attach to a motor vehicle at a place behind the car seat when the child is facing forward. Does the child car seat you use with (AGE) have this kind of tether strap on its back?*

Base: *Child rides in a front facing car seat that is not a booster seat.*

Unweighted N=507

The majority of parents/caregivers who had a car seat with a top tether drove with the tether strap attached to the vehicle on all trips (60%). About one-quarter of those with tether straps never used them (28%).

Figure 51
How Frequently Tether Strap Is Used



Qx. When the (AGE) rides in the child car seat, how often is the tether strap attached to the motor vehicle? Would you say that the tether strap is attached to the motor vehicle on all trips that the child rides in the car seat, most trips, some trips, or no trips?

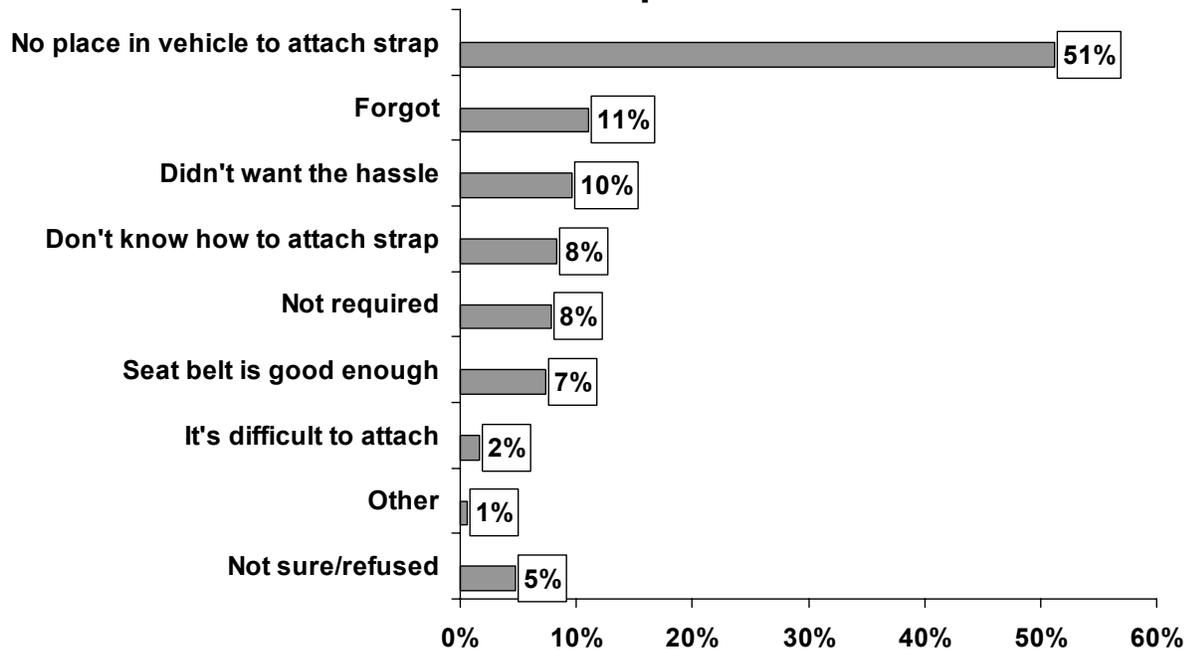
Base: Child car seat has a tether strap.

Unweighted N=359

The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded.

The most common reason the tether strap was not used was because there was no place in the vehicle to attach the strap (51%). Eleven percent said they did not use the tether strap because they forgot to attach the strap to the vehicle.

Figure 52
Reasons Tether Strap Is Not Attached



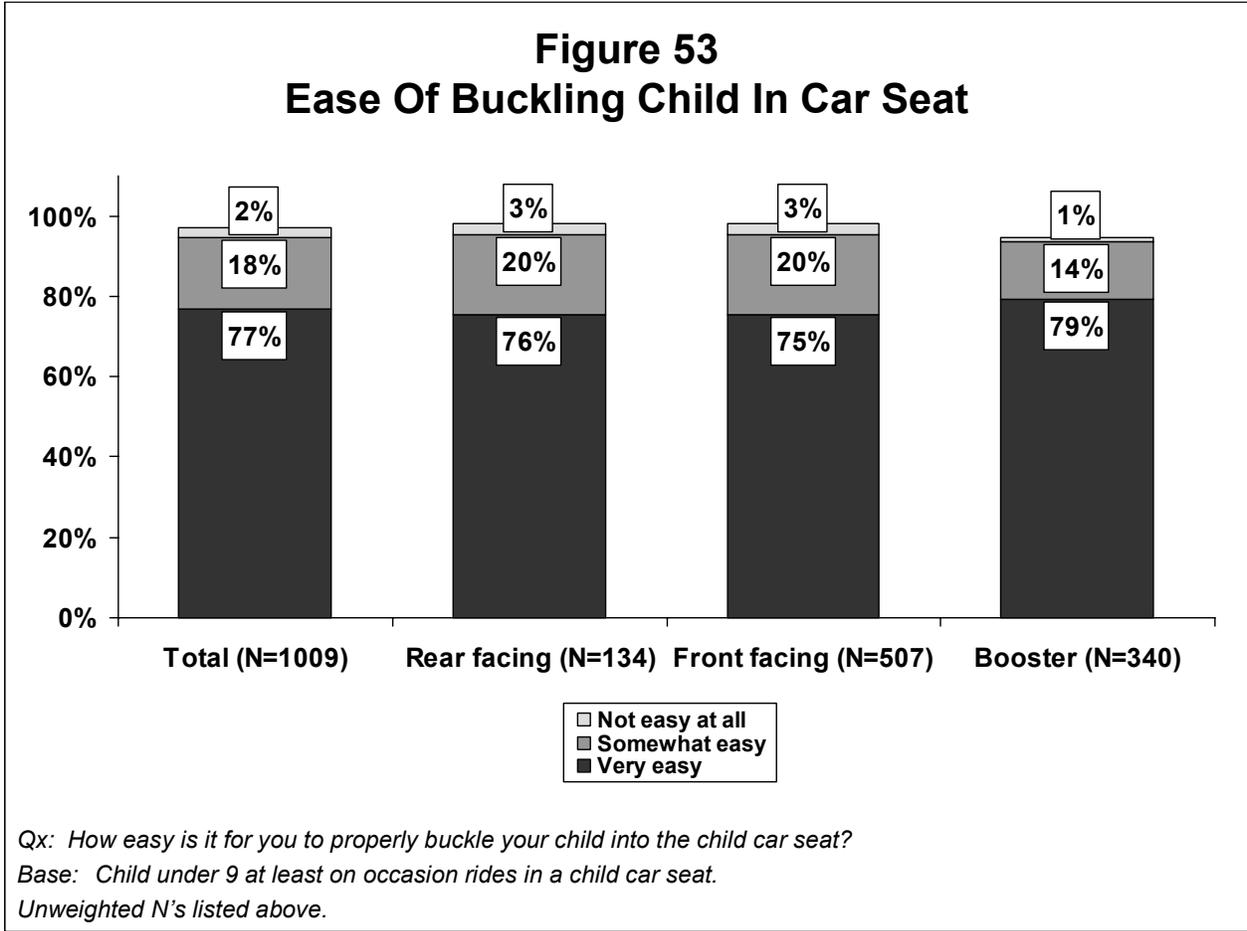
Qx. When the child is riding in the car seat and the tether strap is not attached to the motor vehicle, what are the reasons the tether strap is not attached?

Base: Tether strap is not used on all trips.

Unweighted N=136

Buckling Child Into Car Seat

As with installing the car seat in the vehicle, most parents/caregivers considered it easy to properly buckle the child into the car seat. Almost all parents/caregivers answered either that it was very easy (77%) or somewhat easy (18%).



Those respondents who said that it was only somewhat easy to buckle the child into the seat, or not easy at all, were asked for more detail. Respondents reported most often that it was difficult to snap the buckles together or hard to insert the buckle into the lock (26%) and hard to adjust the shoulder straps or seat belts to fit properly or tightly (26%). Lack of cooperation from the child (23%) also made it difficult to buckle the child into the car seat.

**Table 8
What Is Difficult About Buckling Child
Into Car Seat**

Reason	Percent
Child seat attachment/adjustments	56%
Adjusting shoulder straps to fit properly/tightness of seat belt	26%
Hard to snap buckles together/hard to insert the buckle into the lock	26%
Heavy/bulky/winter clothing makes it difficult to buckle child in or adjust straps	7%
Child doesn't fit/too big	2%
Buckle hits the child in the head/can't get it over the head	*
Child's movement/behavior	23%
Child doesn't sit still/down/uncooperative/squirms	23%
Miscellaneous	15%
Difficult to crawl/squeeze into rear of vehicle to buckle in child	11%
Any other miscellaneous mentions	4%
Not sure/refused/no answer	12%

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.*

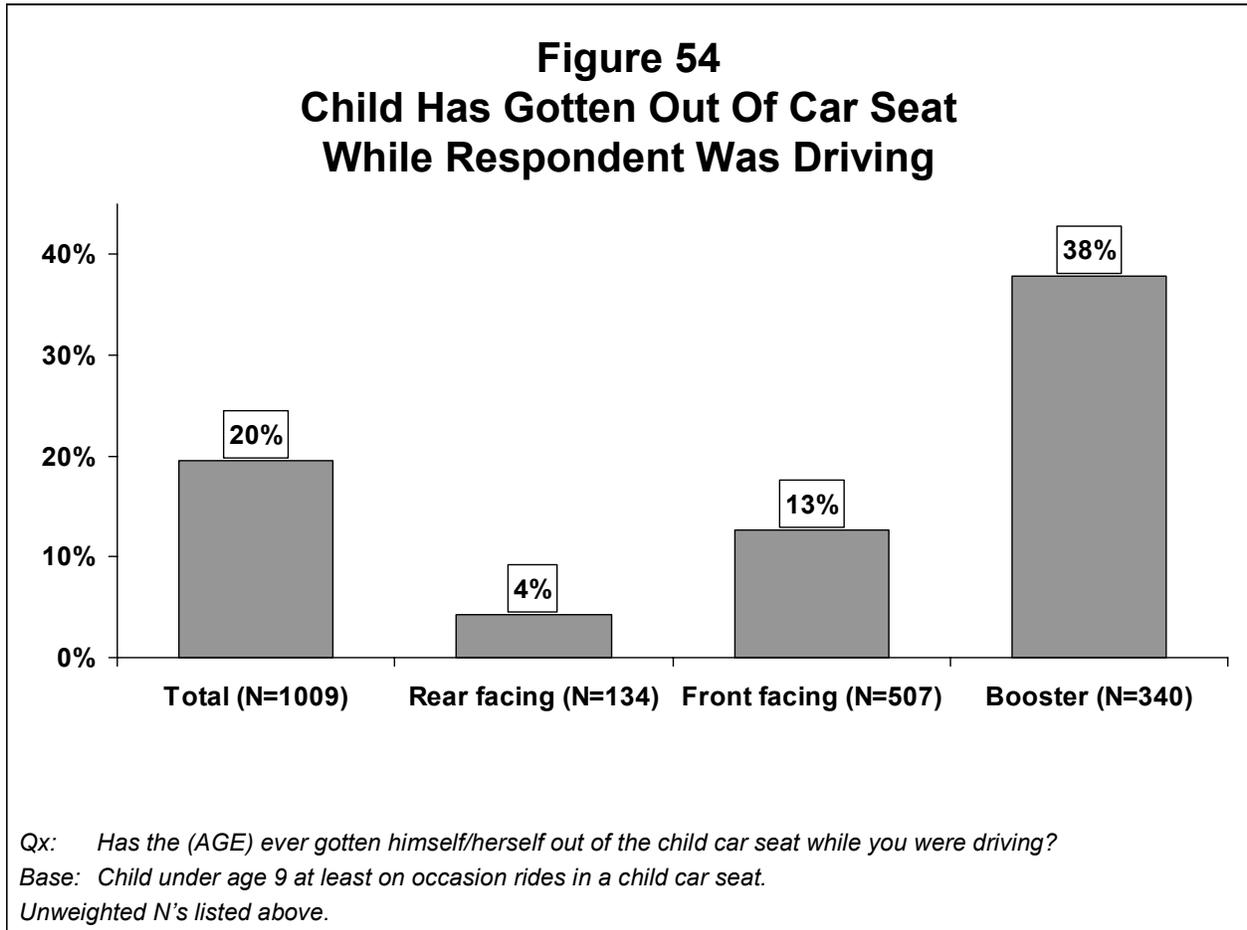
Unweighted N=221

Total exceeds 100% due to multiple responses.

** Less than 0.5%.*

Children Getting Out Of Car Seats

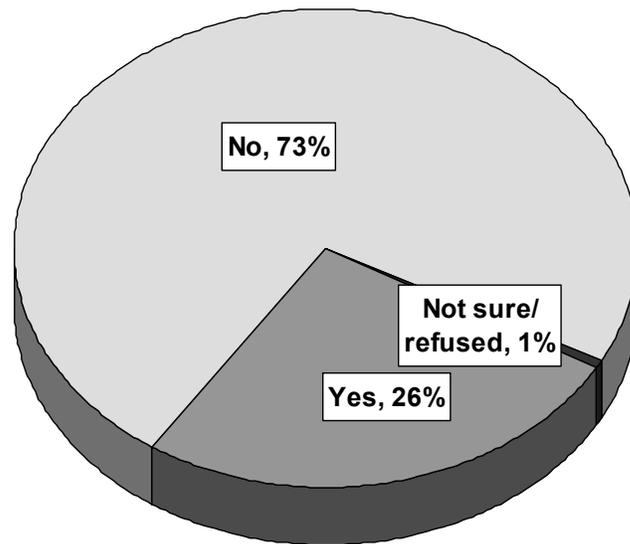
Twenty percent of parents/caregivers reported that the child had gotten himself or herself out of the car seat while they were driving. As expected, this was highest among older children who were riding in booster seats (38%). The 4% for children in rear facing infant seats may reflect error in describing the type of seat, or misinterpretation of this “child escape” question.



Use Of Inspection Stations To Check Whether Child Seat Is Being Installed Correctly

Inspection stations are places where parents and other caregivers can go to have trained technicians check whether they are correctly installing the child seat in their vehicle and properly buckling their child into the seat. In 2007, 26% said they had gone to an inspection station to check their car seat attachment.

Figure 55
Ever Went To An Inspection Station To Check
Child Car Seat Attachment



Qx: *In many communities, there are places where people can go to have someone check whether they are correctly attaching their car seat and buckling in their children. Did you ever go to a place like this to have someone check how you were attaching the car seat?*

Base: *Child under age 9 at least on occasion rides in a child car seat.*

Unweighted N=1009

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Parents/caregivers who said that they had gone to an inspection station were then asked what type of organization or company sponsored the car seat check. Most often, they indicated that local police (40%) or fire or rescue units (27%) were the sponsors.

Table 9
Sponsor Of The Inspection Station Attended

Sponsor	Percent
Local police	40%
Fire or rescue units	27%
Hospital/medical/health center/clinic	15%
State or county government/agencies	7%
Car dealership	4%
Charitable/community service organizations	3%
Retail store	3%
Auto manufacturer	1%
Other	2%
Not sure/refused	5%

Qx: Could you tell me what type of organization or company sponsored the car seat check you went to?

Base: Said they had gone to an inspection station to have someone check how they were attaching the car seat.

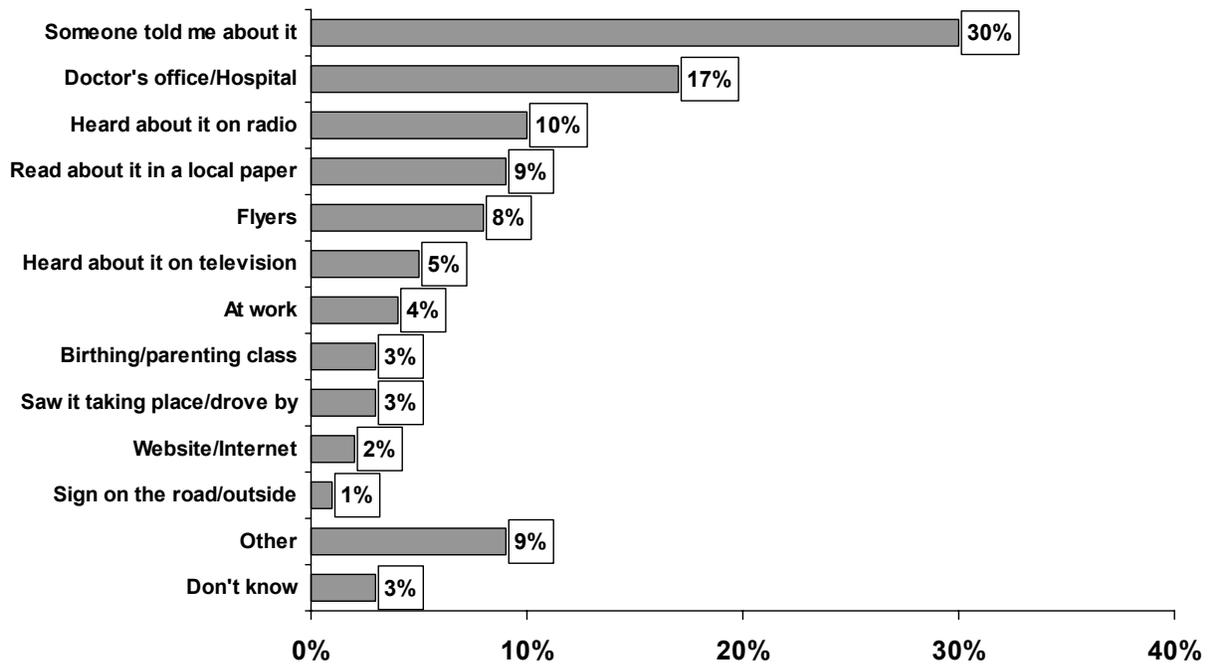
Unweighted N=286

Total exceeds 100% due to multiple responses.

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Most often the parents/caregivers found out about the car seat check through word-of-mouth (30%). Doctors' offices or hospitals (17%) were also mentioned as well as hearing about it on the radio (10%), reading about it in a local newspaper (9%), or seeing a flyer (8%).

Figure 56
How Heard About Car Seat Check



Qx. How did you find out about the car seat check you went to?

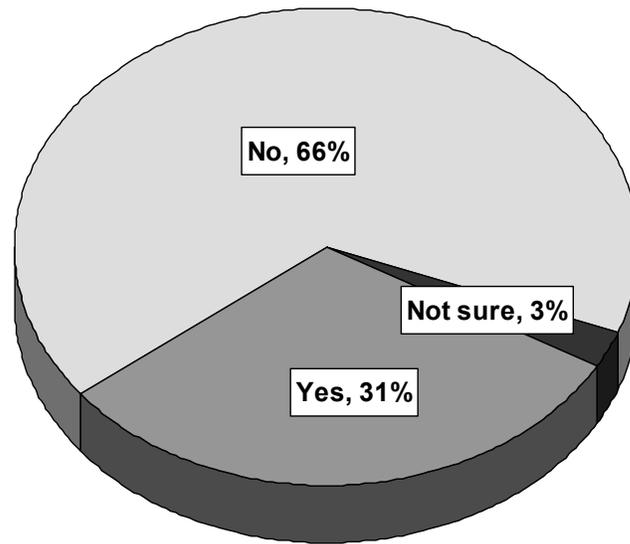
Base: Said they had gone to an inspection station to have someone check how they were attaching the car seat.

Unweighted N=286

Total exceeds 100% due to multiple responses.

It is not unusual for child safety seat technicians to report a high proportion of cases at inspection stations where there was something wrong with how the seat was installed or how the child was buckled in, even surpassing 80% or 90%.⁹ However, only about one-third of parents/caregivers (31%) reported that the inspection station technicians found problems with how they attached the seat or buckled in their child.

Figure 57
Did The Technician Find Anything Wrong With How They Attached Seat/Buckled Child?



Qx: *Did the person who was checking the car seat for you find anything that was wrong in how you attached the seat or buckled in your child?*

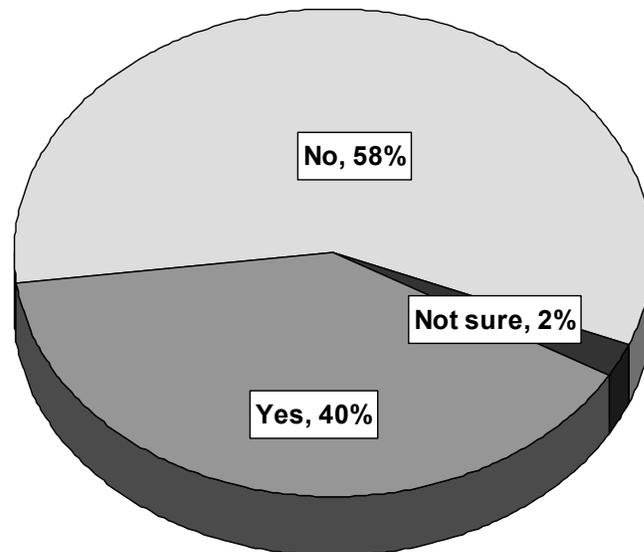
Base: *Said they had gone to an inspection station to have someone check how they were attaching the car seat.*

Unweighted N=286

⁹ NHTSA studies have similarly found high levels of incorrect use of child safety seats among the public, including finding 73% critical misuse of child restraints during the latter part of calendar year 2002. Decina, L.E. and K.H. Lococo. *Misuse of Child Restraints*. DOT-HS-809-671. January 2004.

The findings presented on the previous page are similar to previous findings; relatively few parents/caregivers reported that the technicians at the inspection stations detected anything wrong with what they were doing. Because the results substantially differed from what technicians in the field were reporting, the 2003 survey added a question to see if the level of reported misuse changed if it was not framed as something the respondents did “wrong.” The parents/caregivers were asked if the technicians suggested that they do anything differently in how they attached the seats or buckled in their children. Forty percent answered “Yes,” compared to 31% who reported that the technicians found something wrong.

Figure 58
Did Someone Suggest Alternative For Attaching Car Seat



Qx. *Did the person who was checking the car seat for you suggest that you do anything differently in how you attach the seat or buckle in your child?*

Base: *Said they had gone to an inspection station to have someone check how they were attaching the car seat.*

Unweighted N=286

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The most common suggestions received at the car seat inspection station were to tighten the seat belt/put pressure on the car seat to hold it down while attaching it (46%), use something underneath or behind the seat to make it more secure (18%), or to adjust the straps on the child more securely (17%).

Table 10
Suggestions For Different Attachments

Suggestion	Percent
Make seat belt tighter/More pressure on seat belt	46%
Use foam/towel/something behind/underneath to make more secure	18%
Adjust straps for child	17%
Put knee/weight on car seat to fasten down more securely	10%
How to use/tighten straps	5%
Get a different car seat	3%
Use clips/hook latch	3%
Place seat in the middle	3%
Don't make it too tight	1%
Take the base off	1%
Somebody fixed it for me	1%
Switch from car to booster seat	1%
Don't use the headrest	1%
Switch the angle of the car seat	1%
Don't know/Refused	2%

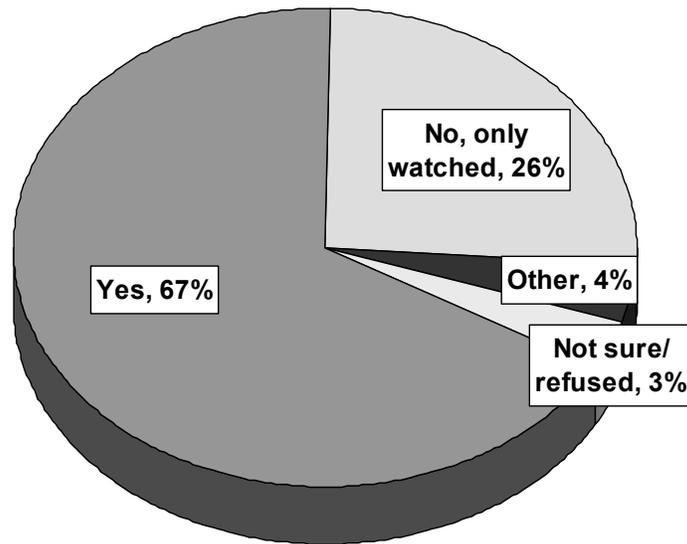
Qx. What did that person suggest you do differently?

Base: Person checking the car seat suggested they do something different.

Unweighted N=112

At inspection stations, the technicians are supposed to actively engage parents and caregivers in attaching the child car seats to the vehicles. Sixty-seven percent of the parents/caregivers affirmed that they had been given the opportunity at the inspection station to attach the seats and buckle in their children under the guidance of the technicians. However, 26% reported that they only watched the technicians perform the checks and make the adjustments.

Figure 59
Given A Chance To Practice Attaching The Seat
And Buckling In Child



Qx: *During the car seat check, were you given a chance to practice attaching the seat and buckling in your child? Or did you spend all of the time watching someone else check the seat and show you how to attach it?*

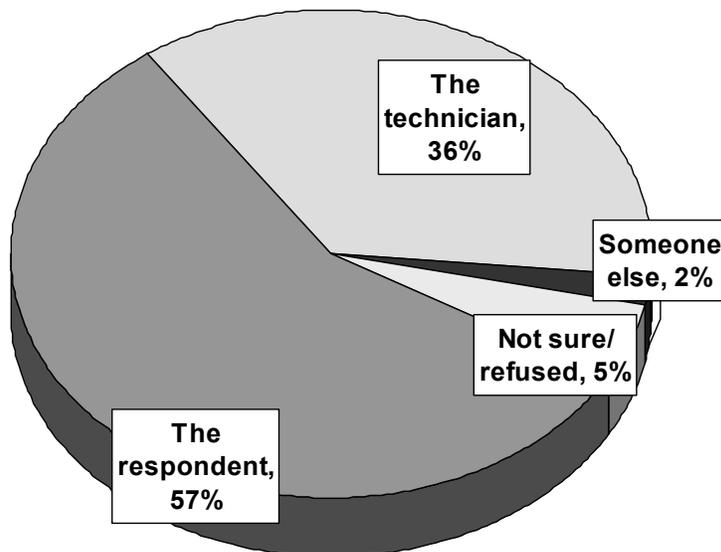
Base: *Said they had gone to an inspection station to have someone check how they were attaching the car seat.*

Unweighted N=286

The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded.

The CPS (Child Passenger Safety) curriculum for CPS technicians calls for the parent or other supervising caregiver for the child to be the last person to adjust the child car seat before leaving the inspection station, rather than the technician. As noted on the previous page, about one-fourth of the parents/caregivers said they did not have the chance to practice attaching the seat while at the inspection station but instead spent all of the time watching the technician check the seat and demonstrate proper use. The remaining parents/caregivers were asked who was the last person to adjust the seat before leaving the inspection station. More than one-half of this subset of parents/caregivers (57%) reported that they were the last ones to adjust the seat, while 36% indicated that it was the technician.

Figure 60
Last Person To Adjust Car Seat



Qx. Before leaving the car seat check, who was the last person to adjust the car seat? Was that you or the person who checked the seat?

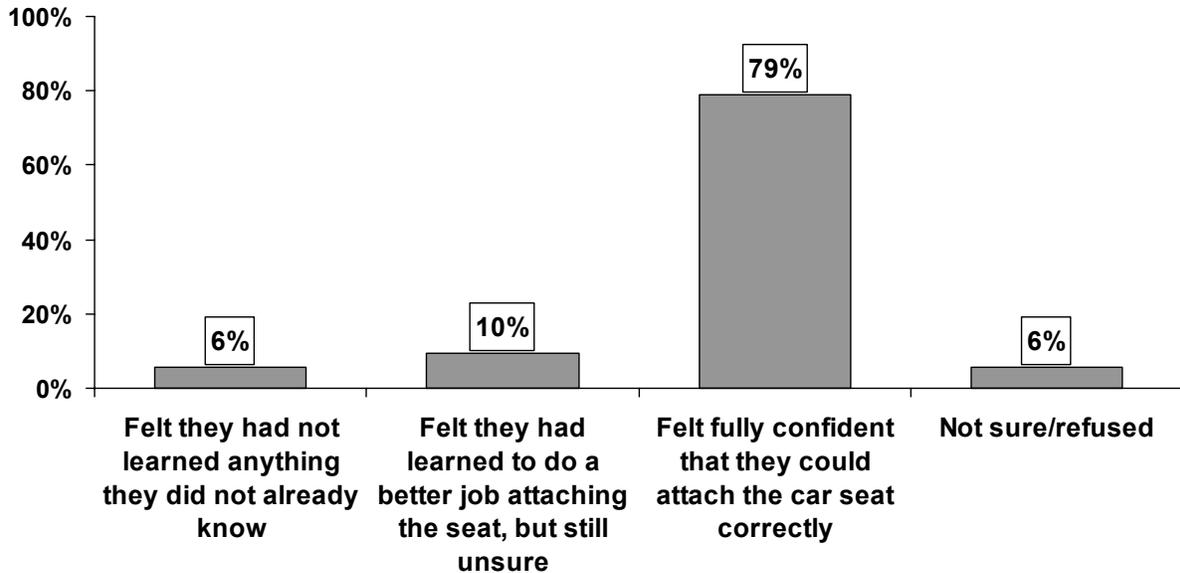
Base: Said they had gone to an inspection station, and spent time during the inspection practicing how to attach the seat rather than simply watch the technician check the seat (also includes "Not Sure" and "Other")

Unweighted N=218

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The vast majority of the respondents (79%) felt fully confident that they could attach the car seat when they left the car seat inspection. Another 10% felt they had learned to do a better job attaching the seat and buckling in the child, but were still unsure that they could do everything correctly themselves. Only 6% felt they had not learned anything they did not already know.

Figure 61
How They Felt After Leaving Car Seat Check



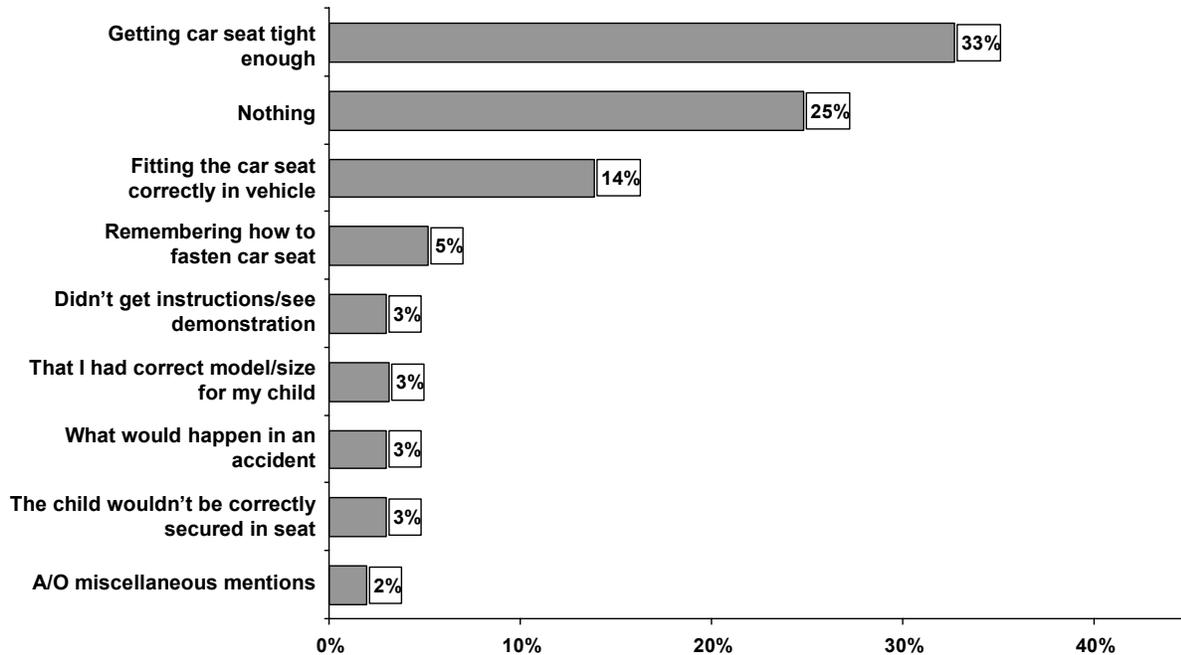
Qx. Which of the following statements best describes how you felt when you left the car seat check? 1) you felt that you had not learned anything you did not already know; 2) you felt you had learned to do a better job attaching the seat and buckling in your child, but were still unsure that you could do everything correctly yourself; or 3) you felt fully confident that you could attach the car seat and buckle in your child correctly yourself.

Base: Said they had gone to an inspection station to have someone check how they were attaching the car seat.
Unweighted N=286

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The few parents/caregivers (57) who did not feel fully confident when they left the inspection station were asked what they felt most unsure about. The most frequent response was “Getting car seat tight enough” (33%), followed by “Nothing” (25%). Fourteen percent reported that they felt most unsure about “Fitting the car seat correctly in the vehicle.”

Figure 62
What They Felt Most Unsure About After Car Seat Check



Qx. When you left, what did you feel most unsure about?

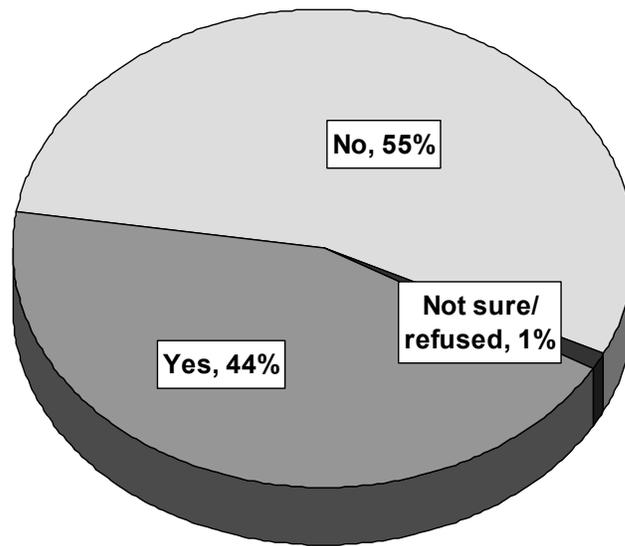
Base: Less than fully confident when left the car seat check.

Unweighted N=57

Frequency That Persons Outside Household Drive A Child Who Uses A 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 63 restricts the analysis only to those parents/caregivers who lived with the child. More than two-in-five (44%) answered that this had occurred.

Figure 63
Child Had Ridden In Vehicle Driven
By Someone Outside Household In Past Month

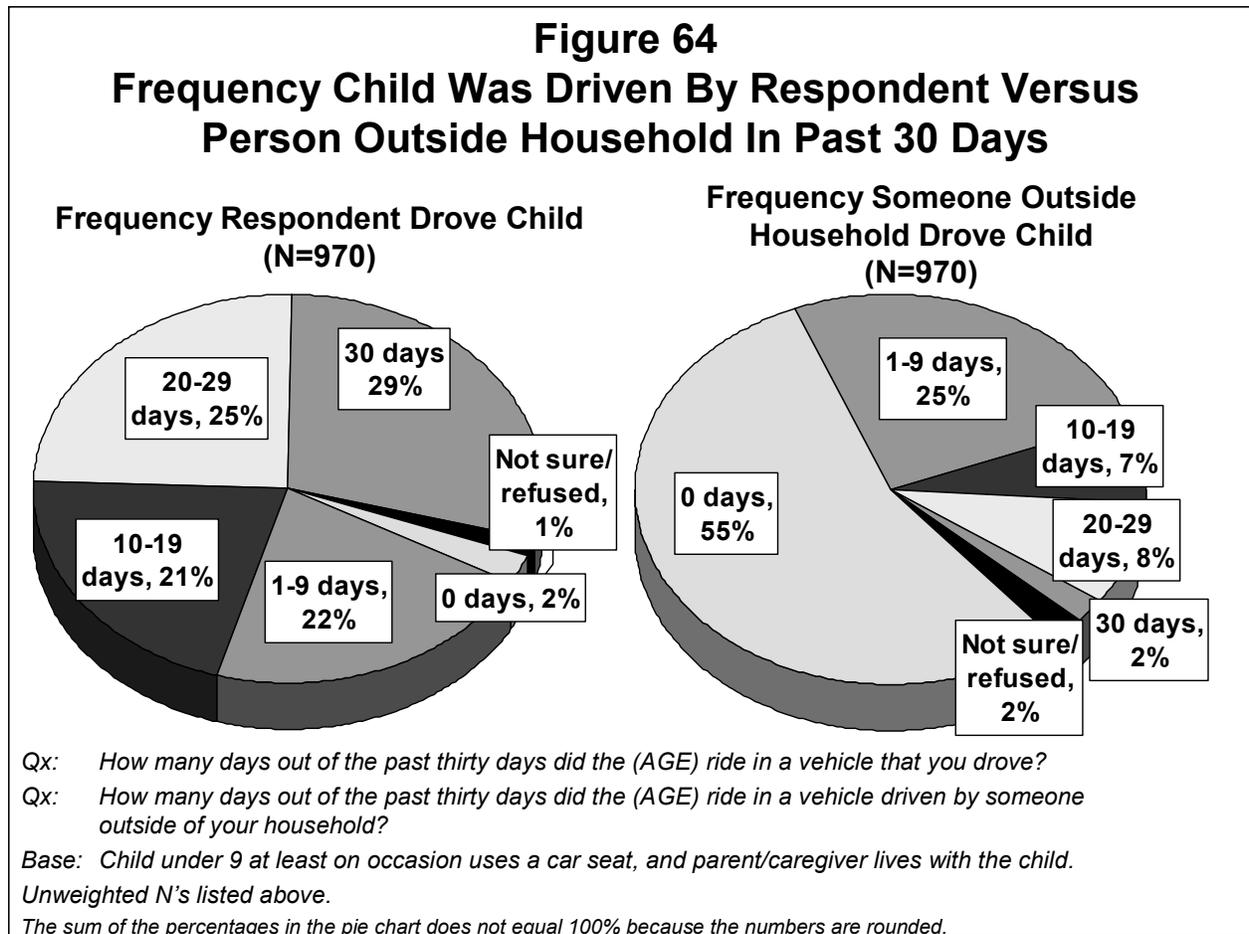


Qx: *During the past thirty days, has the (AGE) ridden in a vehicle where someone outside of your household was driving (includes school buses, taxis, and other private vehicles)?*

Base: *Child at least on occasion uses a car seat, and parent/caregiver lives with the child.*

Unweighted N=970

Figure 64 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 Figure 19). For example, 54% of parents/caregivers said they drove the child 20 or more days in the past 30, whereas only 11%¹⁰ said the child was driven by a non-household member that number of days.

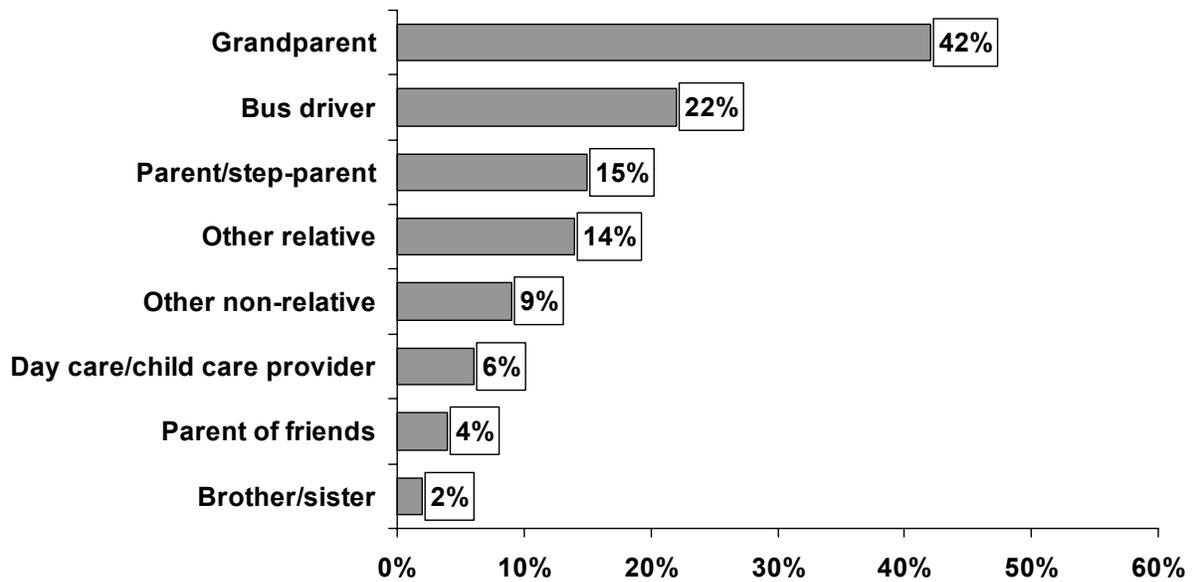


¹⁰ The number does not equal the sum of the components in the Figure due to rounding.

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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 (42%), followed by a bus driver (22%). Fifteen percent reported that it was a parent or step-parent. Fewer reported that it was a brother/sister (2%) or some “other relative” (14%). The relatively high percentage for parents/step-parents when looking from the vantage of the child contrasts with the low percentage obtained from the vantage of the outside driver (see Figure 20). 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 65
Identity Of Driver Outside Household Who Drove Child In Past Month



Qx: Who were those drivers? (What is their relationship to the child?)

Base: Child under age 9 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=445

2007 SURVEY RESULTS

CHAPTER 5: REASONS FOR NON-USE OF CAR SEATS

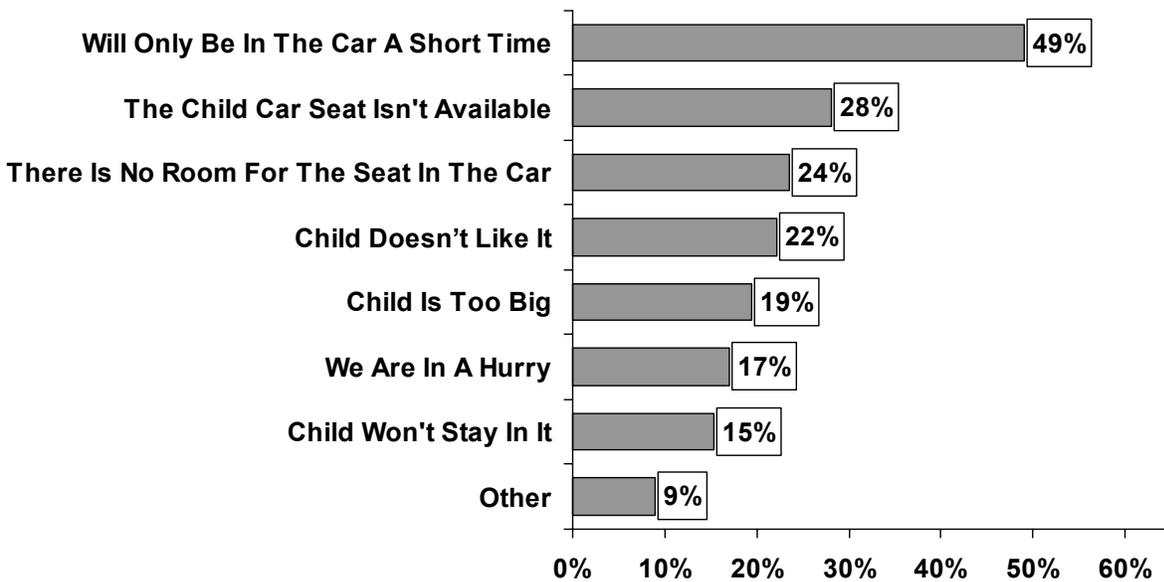
The survey asked a series of questions to identify reasons why children under age 9 were not riding in car seats. Respondents were selected from the parent/caregiver subgroup defined at the beginning of Chapter 3. If respondents said that the designated child used a car seat, but less than all the time, then the survey termed them “part time users.” This includes cases where the respondent said that the child used the car seat all the time, but admitted occasions of non-use within the past year 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 (117). This is because parents and other caregivers 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 9 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, the fit of the seat belt, and their usual seating location.

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 they were only going to be in the car for a short time (49%), a car seat was not available (28%), there was no room for the seat (24%), and the child did not like the seat (22%).

**Figure 66
Reasons Child Does Not Ride In Car Seat:
Part Time Users**



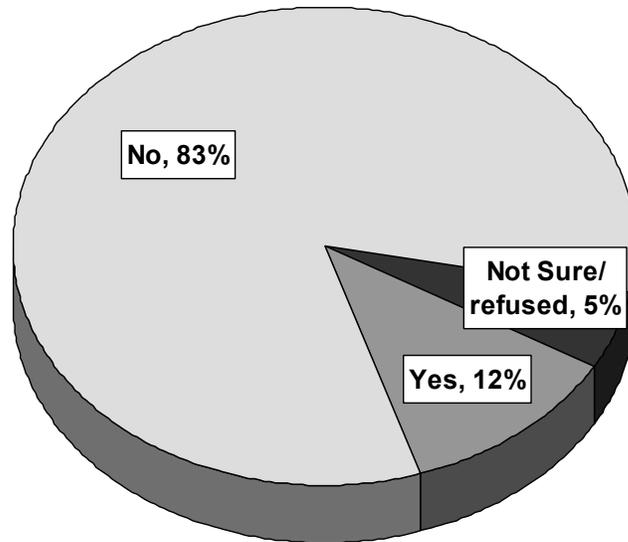
Qx: Please answer yes or no to each of the following statements. When my (AGE) doesn't ride in a child car seat, it is sometimes because...?

Base: Child under age 9 uses a car seat, but not all of the time.

Unweighted N=117

The survey sought to identify where the child usually sat when not using the car seat. The results showed that about one-out-of-eight children who used car seats on a part time basis usually sat on someone's lap when not riding in the seat (12%).

Figure 67
Does Child Usually Sit On Someone's Lap When Not Riding In the Car Seat?



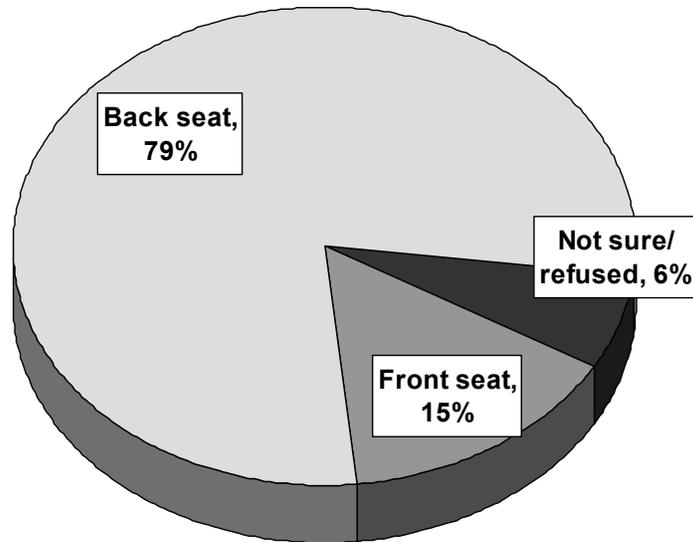
Qx: *When the (AGE) doesn't ride in the child car seat when riding with you, does (he/she) usually sit on someone's lap?*

Base: *Child under age 9 uses a car seat, but not all of the time.*

Unweighted N=117

When asked if the child usually sat in the front seat or the back seat when not riding in the car seat, almost four-fifths (79%) said the back seat. Another 15% said the child usually rode in the front while the remainder did not know (4%) or refused to respond (2%).

Figure 68
Does Child Usually Sit In Front Seat Or Back Seat
When Not Riding In The Car Seat?



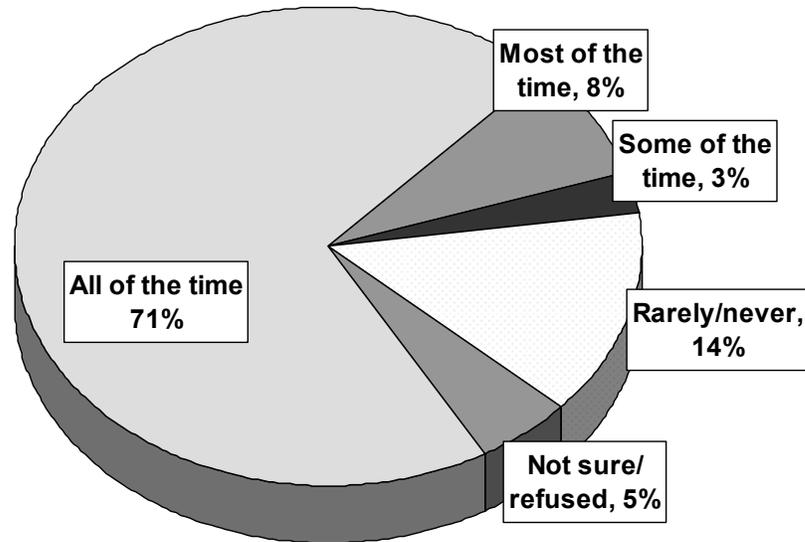
Qx: When the (AGE) doesn't ride in the child car seat when riding with you, does (he/she) usually sit in the front seat or in the back seat?

Base: Child under age 9 uses a car seat, but not all of the time.

Unweighted N=117

Most children who were part time car seat users wore a seat belt when they were not in their car seat. Seventy-one percent reportedly used the seat belt all of the time when not in the car seat, and 8% used it most of the time.

Figure 69
Frequency Of Seat Belt Use When Child Is Not In Car Seat



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?

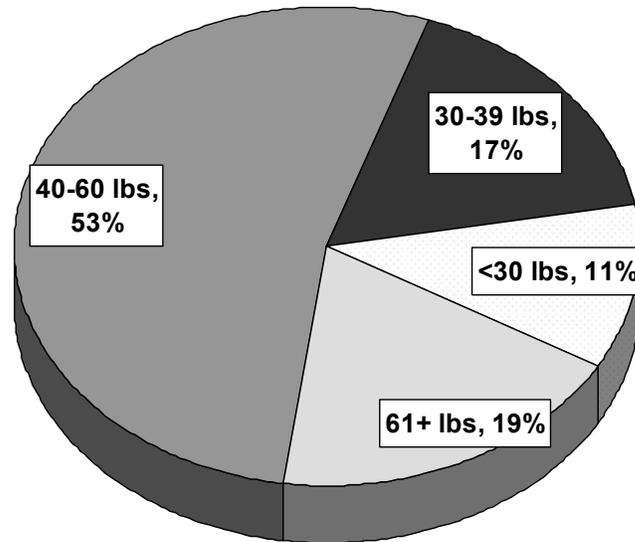
Base: Child under age 9 uses a car seat, but not all of the time.

Unweighted N=117

The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded

Most children (53%) who always or most of the time wore a seat belt when not using a car seat weighed 40-60 pounds. However, almost one-in-four children (28%) weighed under 40 pounds, and more than one-in-ten (11%) reportedly weighed less than 30 pounds.

Figure 70
Weight Of Children Who Always Or Most Of The Time Use Seat Belts When Not In Their Car Seat



Qx: How much does (AGE) 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 under age 9 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=96

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The survey also sought to determine how well seat belts fit children who still used a car seat at least on occasion. Correct lap belt fit would entail the lap belt going across the child's upper thighs or hips. This was reported for 58% of the children, although many reportedly had the seat belt going across the child's stomach (38%). Problems with shoulder belt fit also appeared, such as the belt cutting across the child's neck or face (40%), or the child placing the shoulder belt behind his/her back (38%) or under his/her arm (21%).

Table 11
How Seat Belt Fits The Child:
Part Time Users Of Car Seats

On most trips,	*Unweighted N	Percent
The child's legs bend over the edge of the seat.	(101)	59%
The lap belt goes across the child's upper thighs or hips.	(99)	58%
The shoulder belt goes across the child's neck or face.	(89)	40%
The child puts the shoulder belt behind (his/her) back.	(89)	38%
The lap belt goes across the child's stomach.	(99)	38%
The child puts the shoulder belt under (his/her) arm.	(89)	21%

Qx: Please tell me, yes or no, if the following things usually happen when the (AGE) wears a seat belt while riding in a motor vehicle. On most trips, does ...?

Base: Child under age 9 is a part time car seat user who at least on occasion uses a seat belt.

**Respondents were asked only those questions concerning fit appropriate for the type of seat belt usually worn by the child (i.e. shoulder only, lap only, or shoulder and lap belt systems), resulting in the different N-sizes.*

Parents/caregivers were also asked the age at which a child was generally ready to wear a seat belt. Table 12 compares the responses provided by parents/caregivers who said the child used a car seat, but not every time, with those who claimed that the child was always in a car seat when riding with them. The most frequent response for both the part-time users (20%) and full time users (17%) was 8-years-old. Seventy-two percent of the part-time users and 61% of the full-time users believed a child was generally ready to wear a seat belt by age 8 or younger.

Table 12
Age At Which Parent/Caregiver Believes A Child Is
Ready To Begin Wearing A Seat Belt:
Part Time Versus Full Time Car Seat Users

Age	Part time users (N=117)	Full time users (N=892)
1 year or younger	1%	*
2 years	--	*
3 years	1%	1%
4 years	7%	4%
5 years	11%	9%
6 years	13%	15%
7 years	18%	14%
8 years	20%	17%
9 years	7%	7%
10 years	9%	8%
11 years	1%	1%
12 years	*	3%
Other/Depends on weight/height	3%	6%
Not sure/refused	9%	14%

Qx: *In general, at what age do you think a child is ready to begin wearing only a seat belt rather than use some type of child car seat such as a toddler seat or booster seat?*

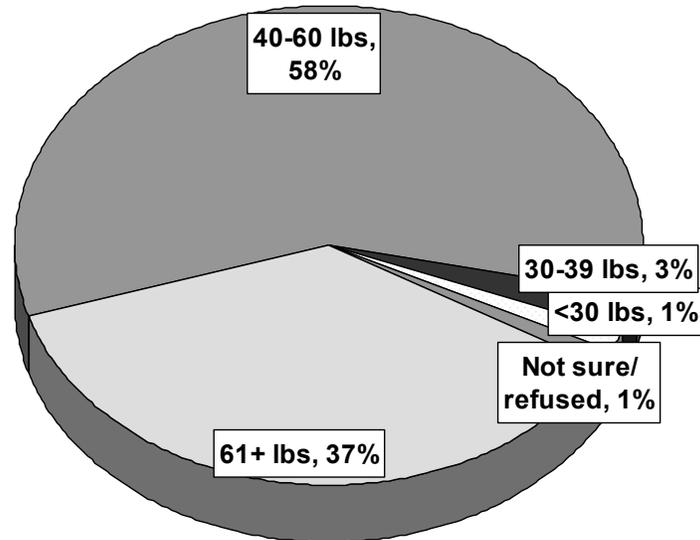
Base: *Child under age 9 uses a car seat.*

**Less than 0.5%. -- No cases.*

Children Who Never Use Car Seats

The children who never used car seats were mostly larger children. The majority (58%) weighed 40-60 pounds and 37% weighed 61 pounds or more, while only 4% weighed less than 40 pounds.

Figure 71
Weight Of Children Who Never Use Car Seats



Qx: How much does (AGE) weigh?

Qx: When you are driving and the (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...?

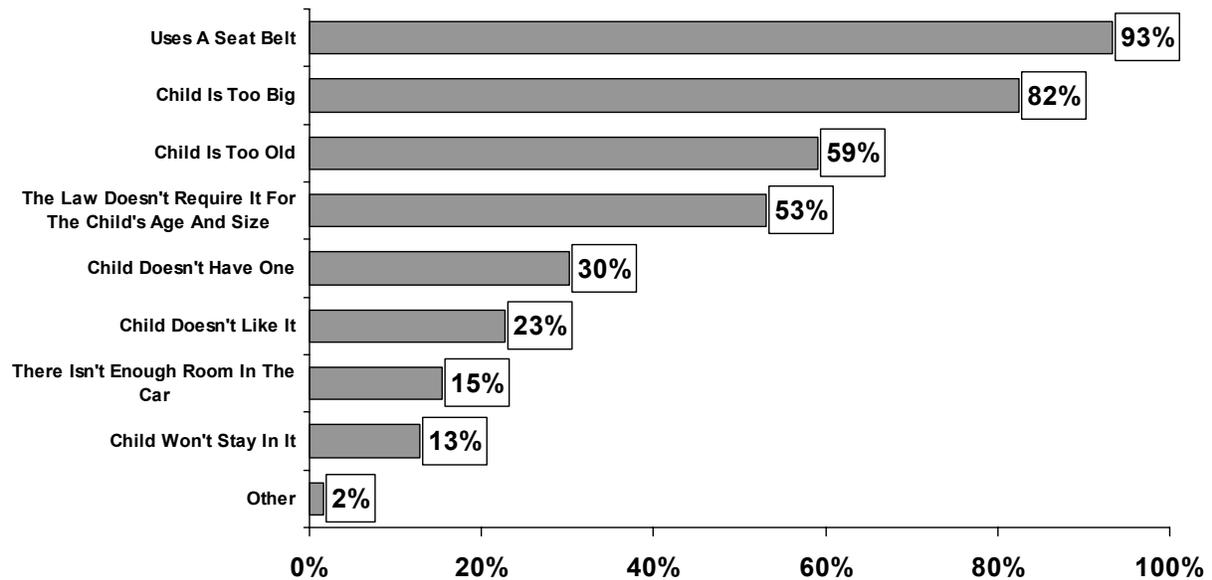
Base: Child under age 9 never uses a car seat.

Unweighted N=244

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When asked the reason why the child never uses a car seat, the respondents usually answered that it was because the child uses a seatbelt (93%) or that the child is too big (82%). Other reasons given for not using a car seat included that the child is too old (59%), the law doesn't require it for the child's age and size (53%), the child doesn't have one (30%), the child doesn't like it (23%), and there is not enough room in the car (15%).

Figure 72
Reasons Child Never Rides In Car Seat



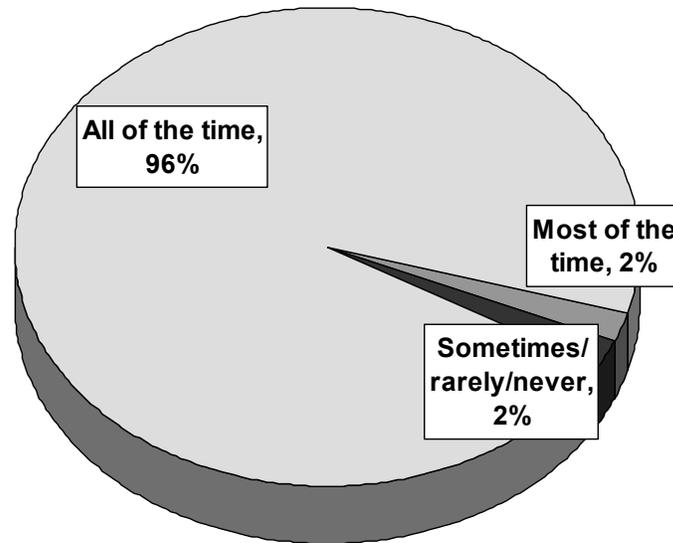
Qx: Please answer yes or no to each of the following statements to indicate if this is a reason why the (AGE) does not ride in a child car seat. My (AGE) doesn't ride in a child car seat because....

Base: Child under age 9 never uses a car seat.

Unweighted N=244

The vast majority of children who never use car seats reportedly wear a seat belt all (96%) or most (2%) of the time when riding in motor vehicles.

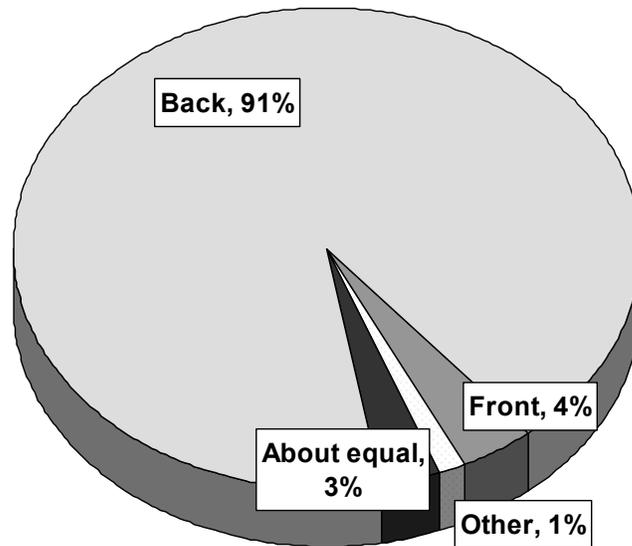
Figure 73
Frequency Child Uses Seat Belt:
Children Who Never Use Car Seats



Qx: How often does he/she use a seat belt?
Base: Child under age 9 never uses a car seat.
Unweighted N=244

The vast majority (91%) of children under age 9 who never use car seats tended to sit in the back seat, while 4% usually sat in the front seat. Another 3% sat about equally in the front seat and the back seat.

Figure 74
Where Child Usually Sits In Vehicle:
Children Who Never Use Car Seats



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

Base: Child under age 9 never uses a car seat.

Unweighted N=244

The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded

As with parents/caregivers of part time car seat users, the parents/caregivers of children who never used car seats but instead used seat belts were asked how well the seat belt fit the child. As shown in Table 13, problems with the fit of the shoulder belt were somewhat more likely among part time car seat users than among the non-users.

Table 13
How Seat Belt Fits The Child: Non-Users Of Car Seats
Versus Part Time Users Of Car Seats

On most trips,	Non-users of car seats	Part time car seat users
The lap belt goes across the child's upper thighs or hips.	50% (N=237)	58% (N=99)
The lap belt goes across the child's stomach.	39% (N=237)	38% (N=99)
The child's legs bend over the edge of the seat.	82% (N=242)	59% (N=101)
The shoulder belt goes across the child's neck or face.	23% (N=218)	40% (N=89)
The child puts the shoulder belt behind (his/her) back.	23% (N=218)	38% (N=89)
The child puts the shoulder belt under (his/her) arm.	12% (N=218)	21% (N=89)

Qx: Please tell me, yes or no, if the following things usually happen when the (AGE) wears a seat belt while riding in a motor vehicle. On most trips, does ...?

Base: Child under age 9 never uses a car seat but uses a seat belt, or is a part time car seat user who at least on occasion uses a seat belt.

**Respondents were asked only those questions concerning fit appropriate for the type of seat belt usually worn by the child (i.e. shoulder only, lap only, or shoulder and lap belt systems), resulting in the different N-sizes.*

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Parents/caregivers of children who did not use child safety seats at all (non-users) tended to believe that children were ready to begin wearing a seat belt at a slightly younger age than parents of children who used child safety seats (part time and full time users). They most frequently gave age 6 as the transition point, compared to age 8 by parents/ caregivers of part time and full time car seat users. Overall, 43% of the parents/caregivers of non-users gave an age of 6 or younger as the point when a child is ready to begin wearing a seat belt compared to 33%¹¹ of the part time users and 30% of the full time users.

Table 14
Age At Which Parent/Caregiver Believes A Child Is Ready To Begin Wearing A Seat Belt: Non-Users Versus Users Of Car Seats

Age	Non-users (N=244)	Part time users (N=117)	Full time users (N=892)
1 year or younger	*	1%	*
2 years	--	--	*
3 years	*	1%	1%
4 years	5%	7%	4%
5 years	16%	11%	9%
6 years	22%	13%	15%
7 years	16%	18%	14%
8 years	13%	20%	17%
9 years	1%	7%	7%
10 years	3%	9%	8%
11 years	--	1%	1%
12 years	*	*	3%
Other/Depends on weight/height	7%	3%	6%
Not sure/refused	16%	9%	14%

Qx: In general, at what age do you think a child is ready to begin wearing a seat belt rather than use some type of child car seat?

Base: Child under age 9 identified as either a full time user, part time user or non-user of car seats.

**Less than 0.5%. -- No cases.*

¹¹ The number does not equal the sum of the components in the Figure due to rounding.

2007 SURVEY RESULTS

CHAPTER 6: BOOSTER SEAT ISSUES

Type Of Restraint Used By Children Under Age 9

Chapter 3 presented data on the type of car seats used by children, but only as a percentage of car seat users (e.g., 53% of children who used car seats were using front facing child safety seats). Tables 15 and 16 show the percentage of all children who use infant seats, front facing child safety seats and booster seats based on responses provided by all of the parents/caregivers defined at the beginning of Chapter 3 (i.e., parents/caregivers of car seat users and non-users combined). Readers are cautioned about the small subsample sizes at each age and weight range.

A discussion on how the type of child restraint was determined is presented on page 33. As occurred in Chapter 3, Tables 15 and 16 include some degree of error resulting from the difficulties in determining the type of child restraint over the telephone.

Only 79% of the infants who had not reached the age of 1 were identified as using rear facing infant seats, at least on occasion. Another 13% appeared to be using front facing child safety seats. Five percent were using booster seats as determined by the booster seat question (see page 33). Front facing child safety seats predominated among children ages 1 (85%), 2 (95%), and 3 (78%). By age 4, there was a shift of some children to booster seats. Booster seat use peaked at ages 5 (50%) and 6 (51%), but by age seven 44% no longer used a child restraint. For most children, an adult seat belt will not properly fit the child until at least age 8 or when they are 4'9" tall. NHTSA and other safety organizations consider a booster seat to be the appropriate restraint for most children ages 4 to 8, although front facing child safety seats would be appropriate for small children at the younger end of that age range while large children at the older end may be adequate size for seat belts to fit them properly. Also, an increasing number of front facing child safety seats have become available that can be used for weights greater than the traditional 40 pound limit, making this an acceptable option for children who weigh more than 40 pounds. Forty percent of children ages 4 to 8 were using booster seats according to the data while another 24% were using front facing child safety seats. Three-in-ten children age 4 to 8 (30%) were not using a child restraint according to the parents and caregivers.

Table 15
Percentage Of Children Who At Least On Occasion
Use A Child Restraint By Age

Age	<1	1	2	3	4	5	6	7	8	4-8
Unweighted N	(116)	(107)	(148)	(128)	(155)	(119)	(155)	(146)	(188)	(763)
Booster seat	5%	--	3%	16%	42%	50%	51%	40%	20%	40%
Front facing child seat	13%	85%	95%	78%	47%	29%	22%	14%	8%	24%
Infant seat	79%	14%	1%	4%	2%	5%	1%	--	*	2%
Undetermined seat	2%	--	1%	1%	7%	3%	2%	1%	1%	3%
Never uses car seat	1%	1%	--	--	1%	9%	24%	44%	69%	30%
Never drives child	--	--	--	--	*	3%	*	*	2%	1%

* Less than 0.5%. --Zero cases.

Qx: *When you are driving and the (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 the (AGE) rides in the child car seat, does the child wear harness straps that go over the shoulders and buckle between the legs?*

Qx: *Is the (AGE) usually in a front facing position when riding in the car seat, where the child faces towards the front of the vehicle? Or is the child usually in a rear facing position when riding in the car seat, where the child faces towards the rear of the vehicle?*

Qx: *Does the (AGE) ride in a booster seat?*

Base: *Parent/caregivers as defined at the beginning of Chapter 3.*

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Table 16 shows the type of child restraint used at different weight ranges. Among children under age nine who weighed 40-60 pounds, one-quarter were not using a child restraint (26%), while 54% of children 61 pounds or more were not.

Table 16
Percentage Of Children Who At Least On Occasion
Use A Child Restraint By Weight

Weight	<20 lb.	20-29 lb.	30-39 lb.	40-60 lb.	61+ lb.
Unweighted N	(90)	(191)	(275)	(539)	(155)
Booster seat	5%	*	18%	44%	30%
Front facing child seat	13%	79%	73%	26%	14%
Infant seat	78%	17%	4%	2%	--
Undetermined seat	3%	2%	3%	2%	1%
Never uses seat	--	2%	2%	26%	54%
Never drive child	--	--	1%	1%	1%

* Less than 0.5%. --Zero cases.

Qx: *When you are driving and the (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 the (AGE) rides in the child car seat, does the child wear harness straps that go over the shoulders and buckle between the legs?*

Qx: *Is the (AGE) usually in a front facing position when riding in the car seat, where the child faces towards the front of the vehicle? Or is the child usually in a rear facing position when riding in the car seat, where the child faces towards the rear of the vehicle?*

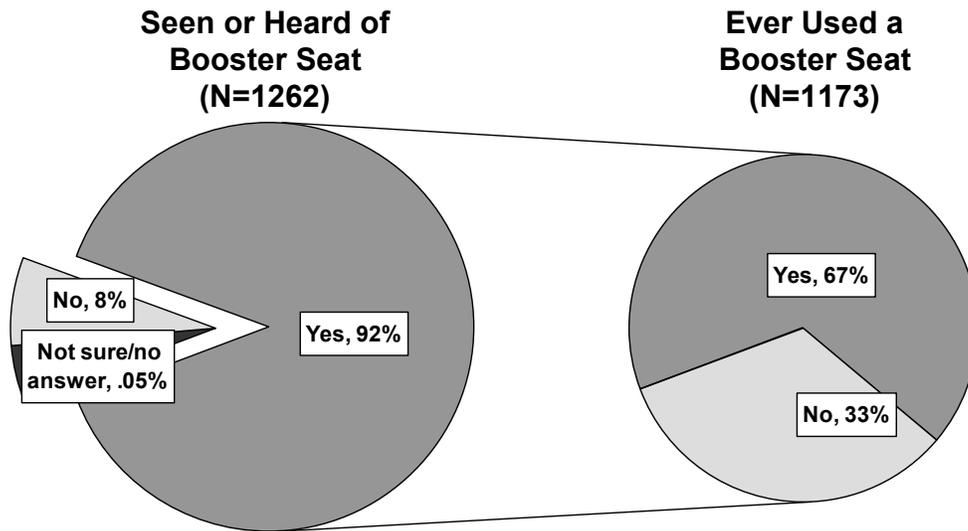
Qx: *Does the (AGE) ride in a booster seat?*

Base: *Parent/caregivers as defined at the beginning of Chapter 3.*

Awareness Of Booster Seats

Use of improperly fitting restraint systems 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. As stated at the beginning of this Chapter, a booster seat is the appropriate restraint for most children ages 4 to 8. Yet these children often use seat belts instead (see Table 15 and Figure 73). 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. Figure 75 shows that more than 9-in-10 were aware of booster seats (92%). Among those aware of booster seats, 67% said they had used them with their child(ren).

**Figure 75
Knowledge And Use Of Booster Seats:
Parent/Caregiver Group**



Qx: Before today, had you ever seen or heard of a type of car seat called a booster seat?

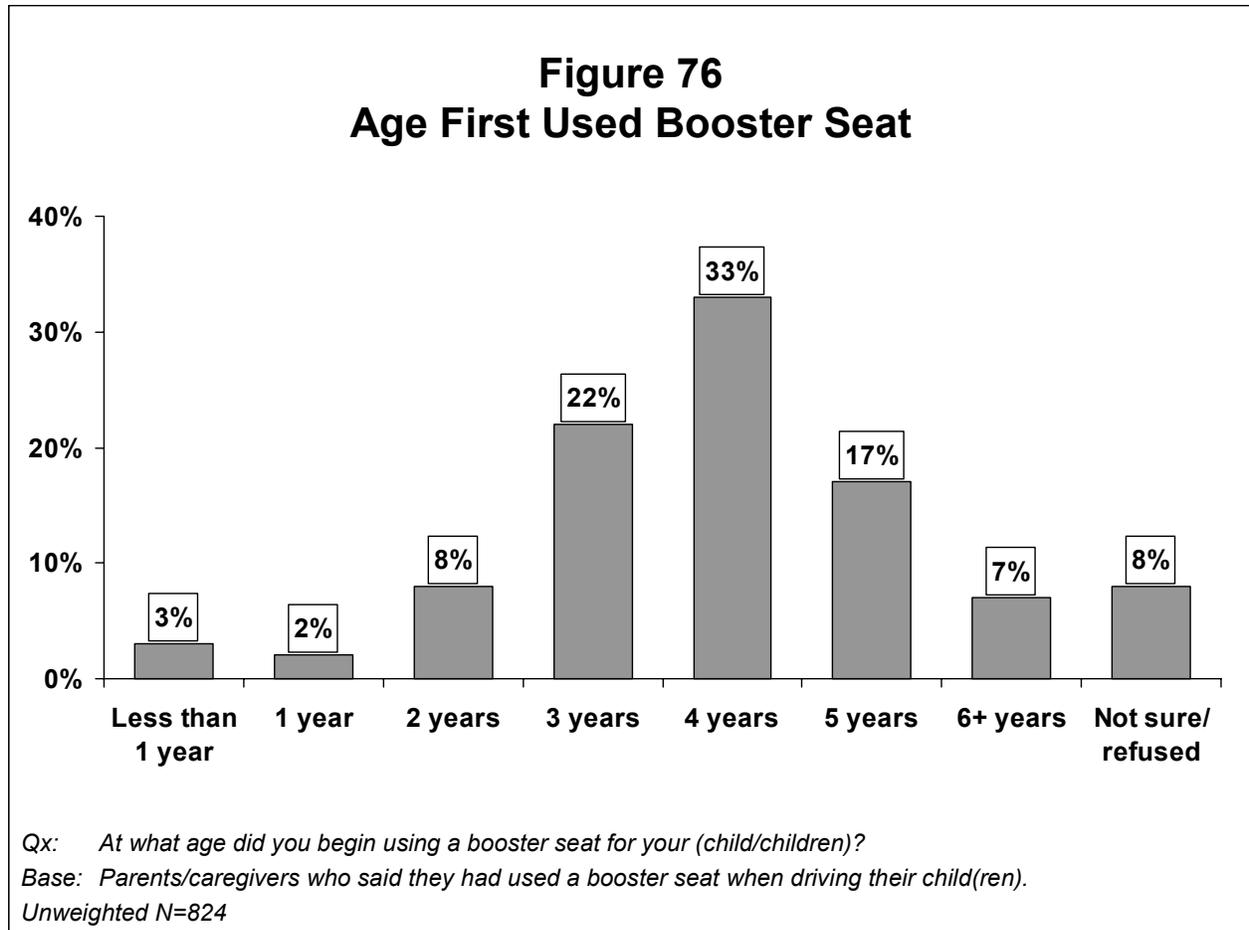
Qx: Have you ever used a booster seat when driving with your/the (child/children)?

Base: Parents/caregivers as defined at the beginning of Chapter 3.

Unweighted N's listed above.

2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

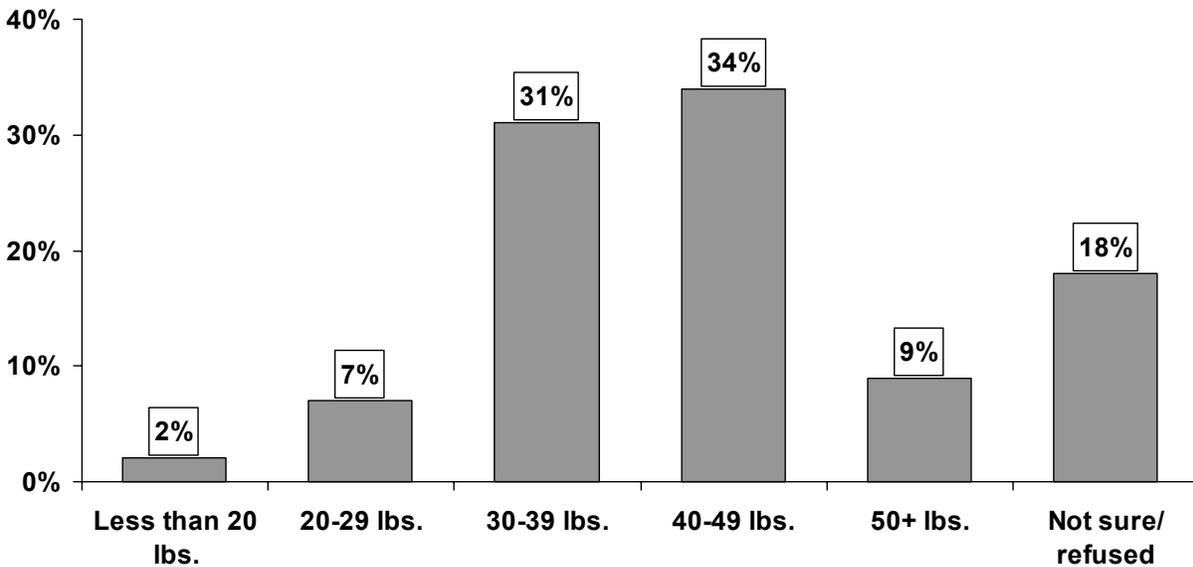
The most frequent age at which parents/caregivers started using booster seats with their child(ren) was age four (33%). More than one-third (35%) reported an age younger than age 4, while another 8% were unsure or refused to say at what age they began using the booster seat with the child(ren).



2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

Nearly four-in-ten (39%) of the parents/caregivers who had used booster seats with their child(ren) indicated that they had started using the restraint before the child reached 40 pounds, while another 18% were unsure about the starting weight or else refused to respond.

Figure 77
Weight Of Child(ren) When First Used Booster Seat



Qx: About how much did the (child/children) weigh at the time you began using a booster seat?

Base: Parents/caregivers who said they had used a booster seat when driving their child(ren).

Unweighted N=824

The sum of the percentages in the chart does not equal 100% because the numbers are rounded

2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

In 2007 respondents were asked the most important reason for using a booster seat. More one-third (36%) of respondents said the most important reason for using a booster seat was to make the seat belt fit the child properly and another one-third said that a booster seat was to make the child safer.

Table 17
Most Important Reason For Booster Seat

Reason	Percent
To make the seat belt fit properly	36%
To make child safer	32%
Safety/health professionals recommend it	6%
When child is too big for safety seat but too small for seat	6%
To allow the child to see out of the window better	3%
Better than just the seat belt	2%
Keeps child still	2%
It's the law	1%
Don't want a ticket	*
Other	3%
Not sure/refused	8%

* Less than 0.5%

Qx. What would you say is the MOST IMPORTANT reason for having a child use a booster seat?

Base: Parents/caregivers who said they were aware of booster seats.

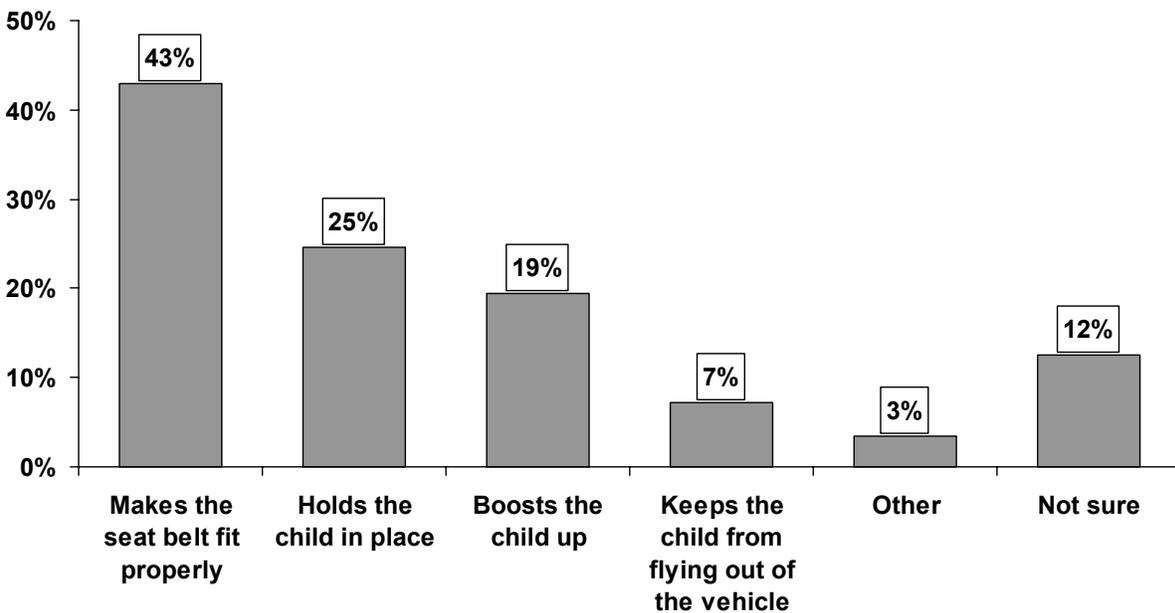
Unweighted N=1173

The sum of the percentages in the pie chart does not equal 100% because the numbers are rounded

2007 MOTOR VEHICLE OCCUPANT SAFETY SURVEY: Child Car Seat Report

Respondents who said the most important reason booster seats should be used was to make the child safer (or that safety/health professionals recommend it) were asked what the booster seat does that makes it safer. More than four-in-ten (43%) said the booster seat makes the seat belt fit properly, while one-quarter said it holds the child in place (25%). More than one-in-ten (12%) respondents said they did not know how it makes the child safer.

Figure 78
How Booster Seat Is Safer



Qx. What does the booster seat do that makes the child safer?

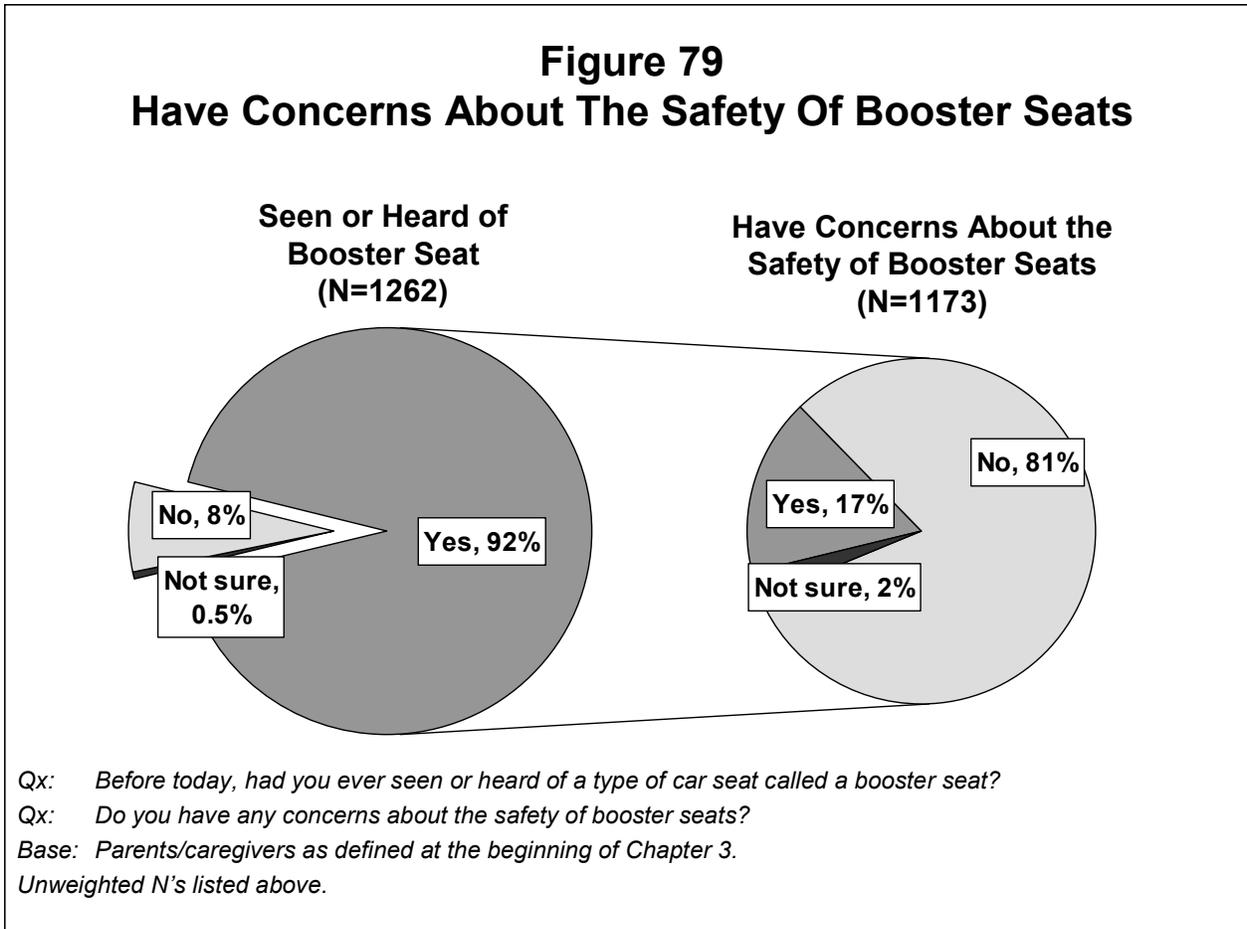
Base: Said the most important reason to use a booster seat was to make the child safer, or that safety/health professionals recommend it.

Unweighted N=454

Total exceeds 100% due to multiple responses.

Concerns About The Safety Of Booster Seats

During testing of the questionnaire prior to the 1998 MVOSS, subjects expressed concerns about the safety of booster seats. As a consequence, the 1998 survey added a 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 92% of parents/caregivers who had seen or heard of booster seats, almost one-fifth (17%) had concerns about their safety and another 2% were unsure.



When asked what concerns they had about the safety of booster seats, the parents/ caregivers criticized them as not being secure forms of attachment (48%). They also voiced nonspecific complaints about inadequate restraint (19%) and safety concerns (25%).

**Table 18
Concerns About Booster Seat Safety**

Concern	Percent
Security of attachment (net)	48%
Seat isn't securely attached to car's seat/not stable/seat slides/shifts /rocks/moves around	29%
Seat is not secure	23%
Inadequate restraint (net)	27%
Inadequate restraint/does not fully restrain child (unspecified)	19%
Child/infant could slip/slide out/nothing to keep infant from sliding out of seat	7%
Not well made/up to safety specifications	2%
Other	41%
Safety concerns/don't know how safe they are (unspecified)	25%
How safe they are compared to regular infant/child safety seats	10%
How safe they would be in an accident	6%
Child is too large for seat	2%
My child is too small/young to use it	1%
Any other type of response	3%
Not sure/refused	3%

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.*

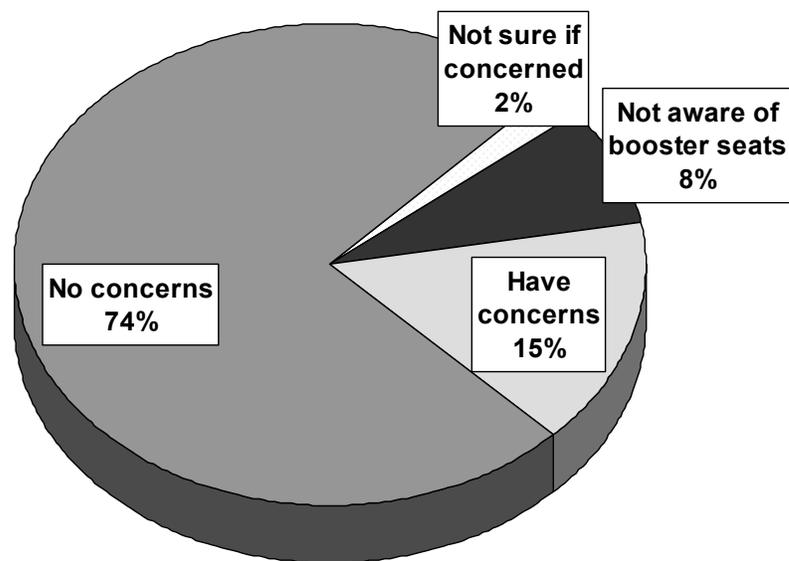
Unweighted N=212

**Less than 0.5%.*

Total exceeds 100% due to multiple responses.

In total, 8% of parents/caregivers either were not aware of booster seats, or were unsure if they had seen or heard about them. Almost one-sixth of parents/caregivers (15%) had heard of booster seats and had concerns about them (i.e., 17% of the 92% who were aware of booster seats). Two percent were aware of booster seats, but unsure whether they had concerns about their safety. The remaining 74% of parents/caregivers said they were aware of booster seats, and had no concerns about their safety.

Figure 80
Awareness And Concerns About Booster Seats



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?

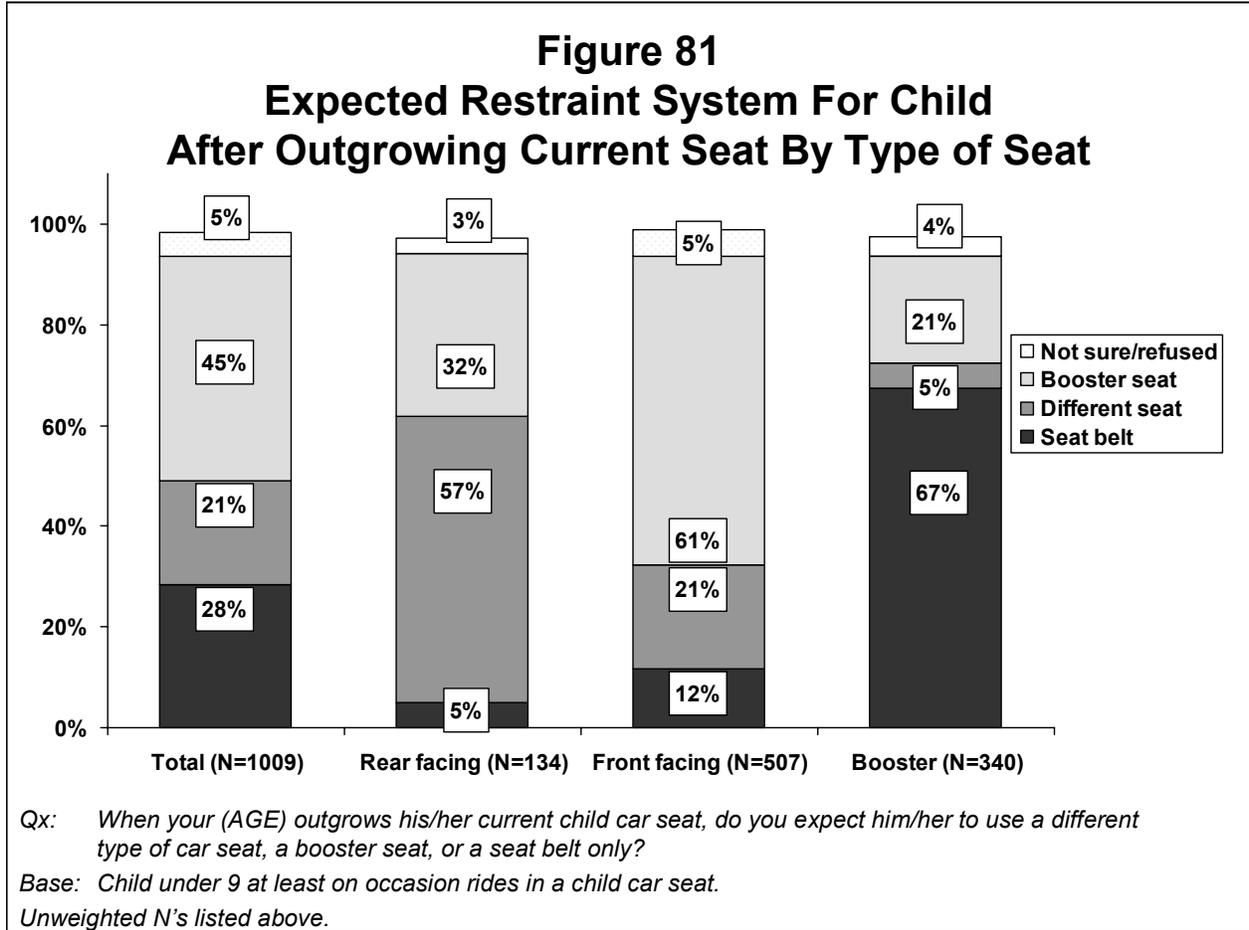
Base: Parents/caregivers as defined at the beginning of Chapter 3.

Unweighted N=1262

The sum of the percentages in the chart does not equal 100% because the numbers are rounded

Expected Restraint System After Outgrowing Current Seat

The interviewers asked parents/caregivers if they expected the child to use “a different type of car seat, a seat belt, or something else” after outgrowing the current seat. The results showed few parents/caregivers expecting children in rear facing (5%) or front facing (12%) child safety seats to move directly to seat belts.



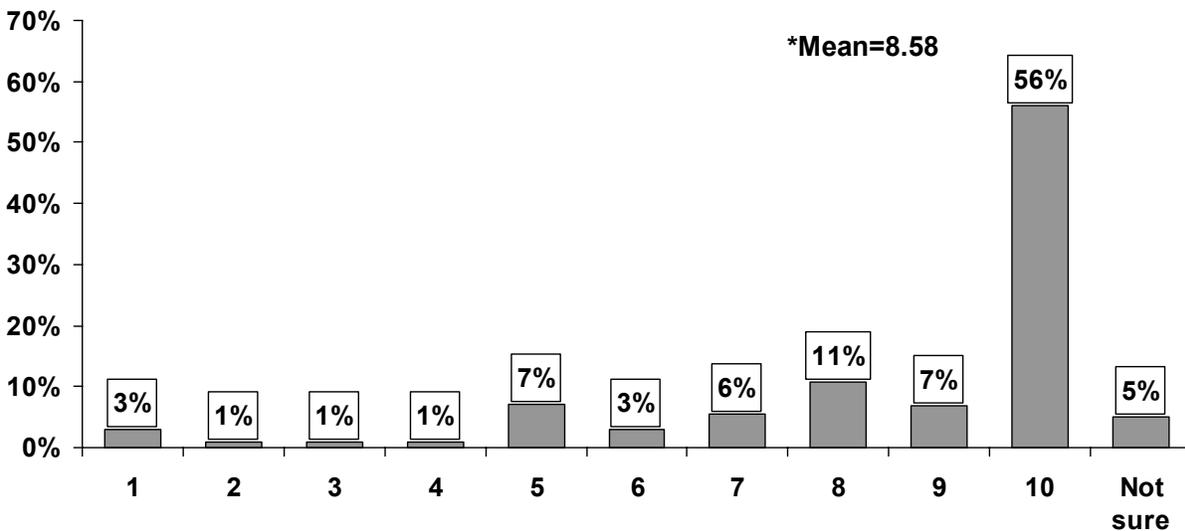
2007 SURVEY RESULTS

CHAPTER 7: 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. Almost three-in-five persons (56%) believed that the police should issue a ticket at every opportunity. The mean score on the 10-point scale was 8.58.

Figure 82
Level Of Support For Enforcing Car Seat Laws



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 violation of child car seat laws, how strict should police enforcement be?

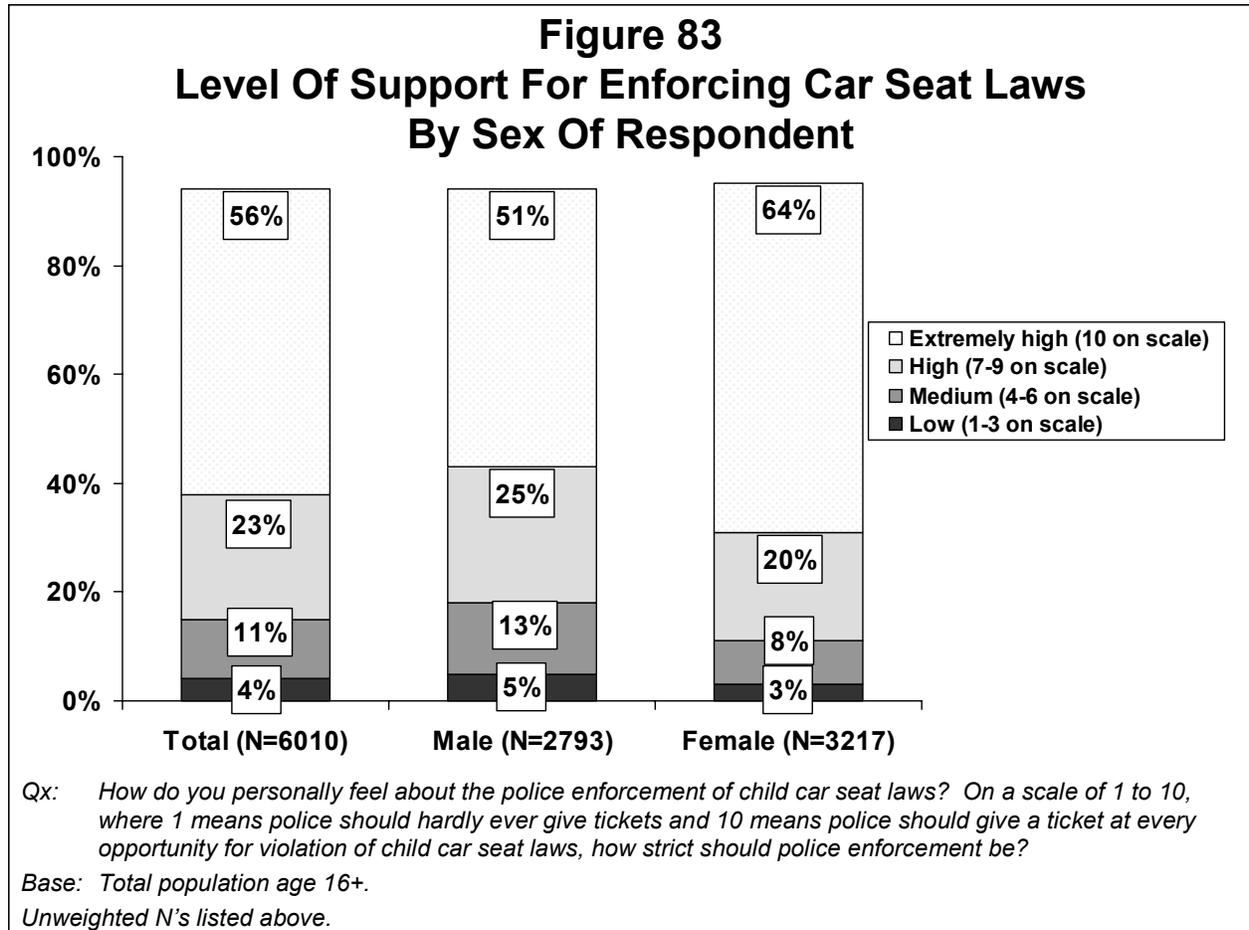
Base: Total population age 16+.

Unweighted N=6010

*The mean excludes respondents in the not sure/refused category.

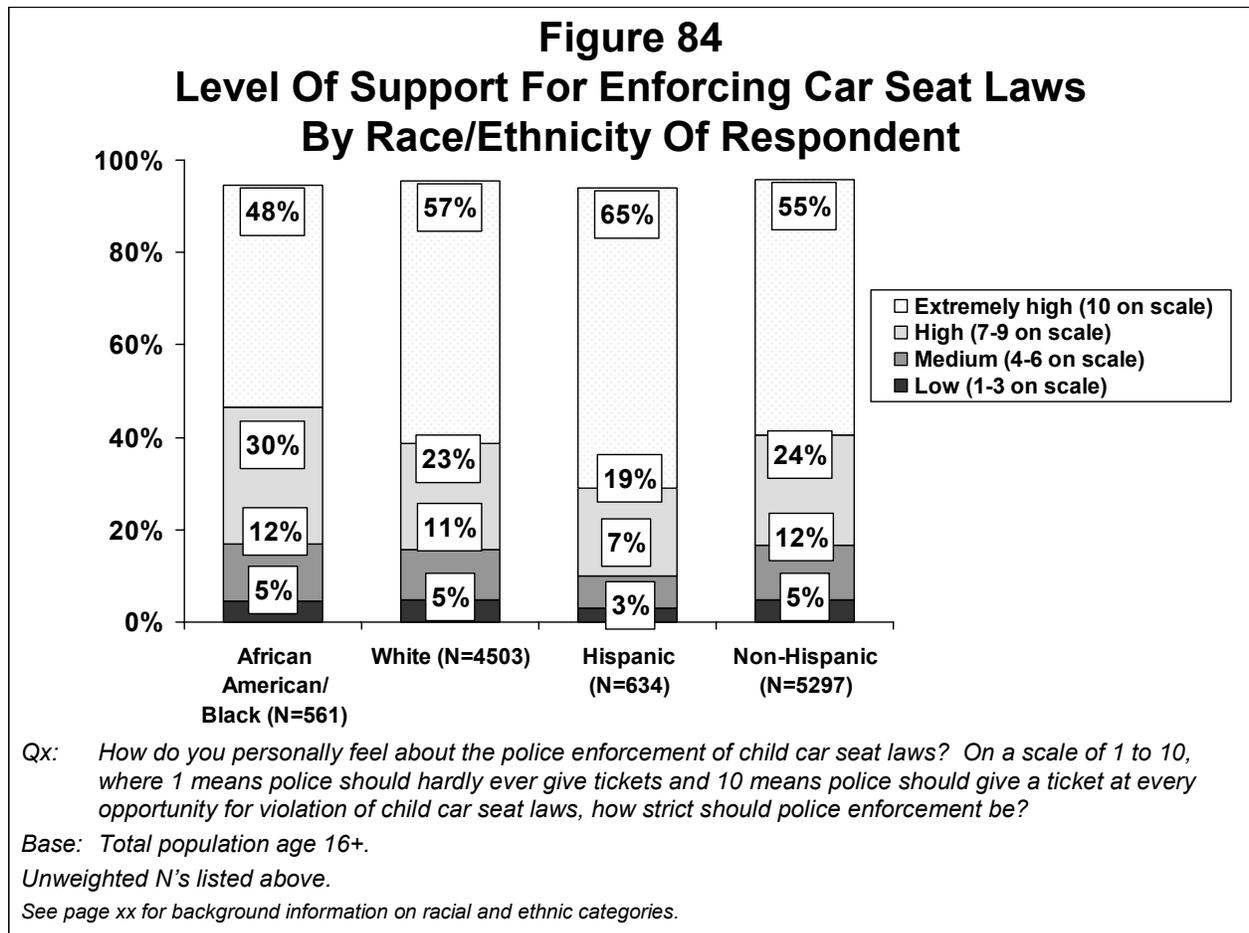
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Females were more likely to call for strict enforcement of the car seat laws than males: 64% of females believed that police should give a ticket at every opportunity versus 51% of males.



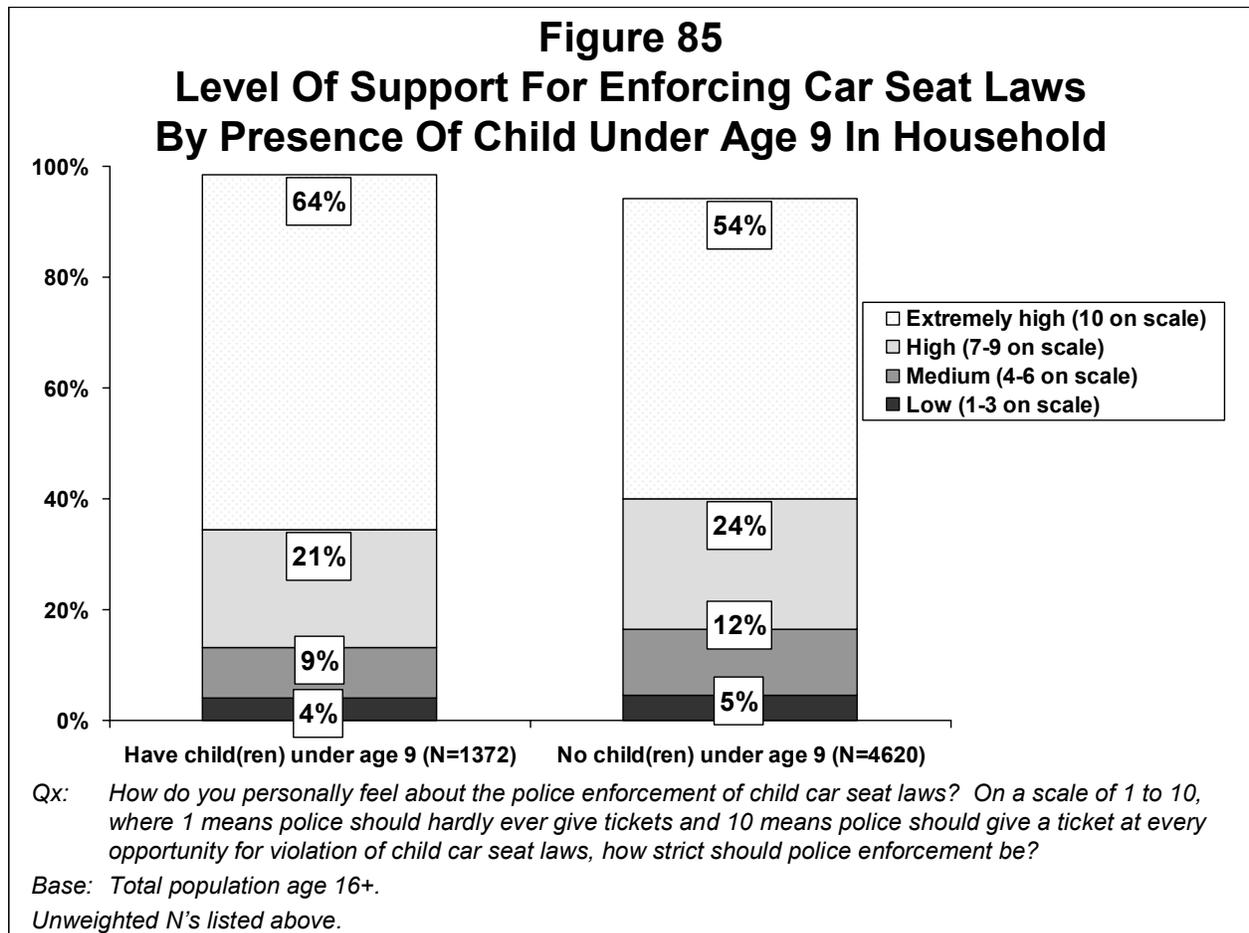
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There was a nine percentage point difference between African Americans/Blacks (48%) and Whites (57%) in expressed preference for extremely high enforcement. In addition, Hispanics were more likely than non-Hispanics to say police should give a ticket at every opportunity for car seat violations.



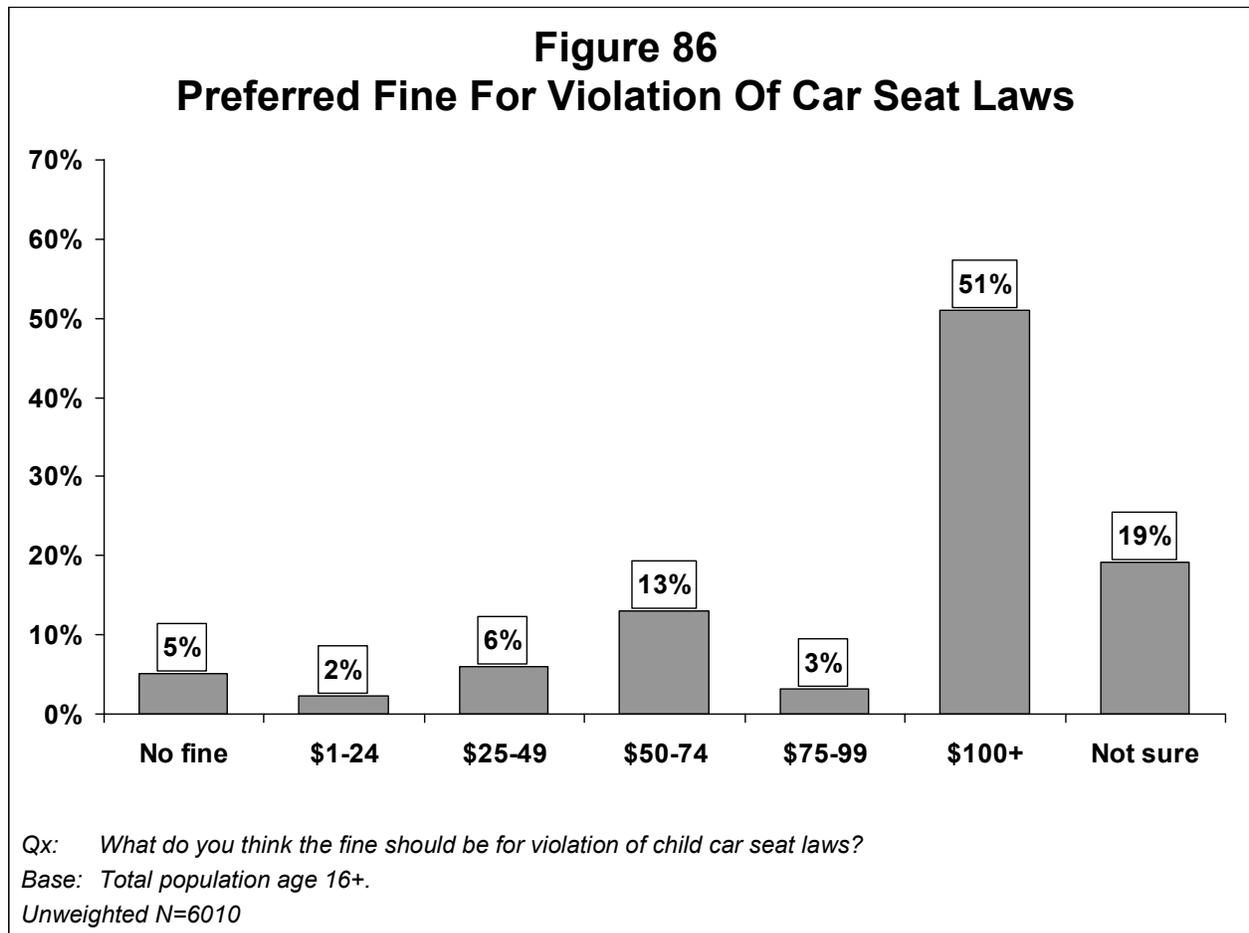
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The level of support for enforcing car seat laws was similar regardless of whether there were children under age 9 living in the household. Sixty-five percent of persons who had a child under the age of 9 in the household favored ticketing at every opportunity, as opposed to 54% who did not have a child in that age range living in their household.



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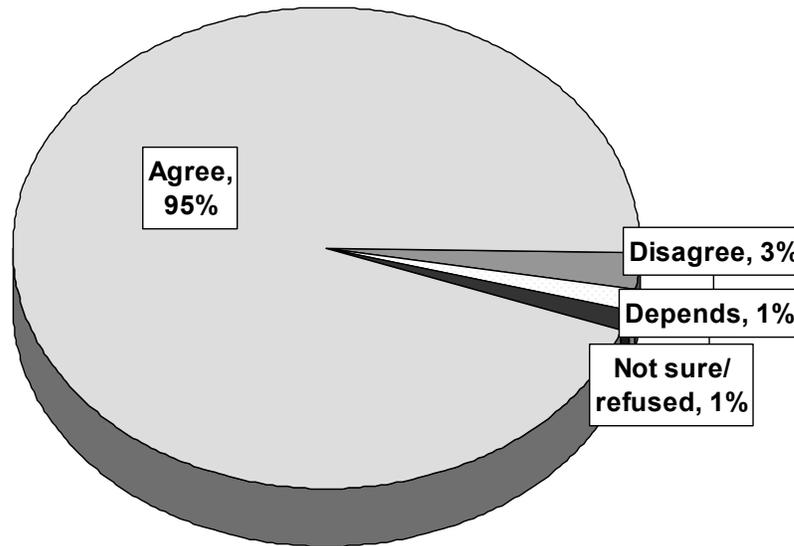
Regardless of their attitude about police enforcement of child car seat laws, respondents age 16 and older were asked what they thought the minimum fine should be for violation of the laws. Two-thirds (67%) believed the fine should be \$50 or more, with one-half of the public (51%) favoring a fine of \$100 or more.



Attitudes About Occupant Restraint Requirements For Children Who Outgrow Car Seats

Ninety-five 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, including booster seats. Three percent disagreed and 1% believed that it depended on the age of the child.

Figure 87
Children Should Be Required To Wear Seat Belts
When They Have Outgrown Car Seats



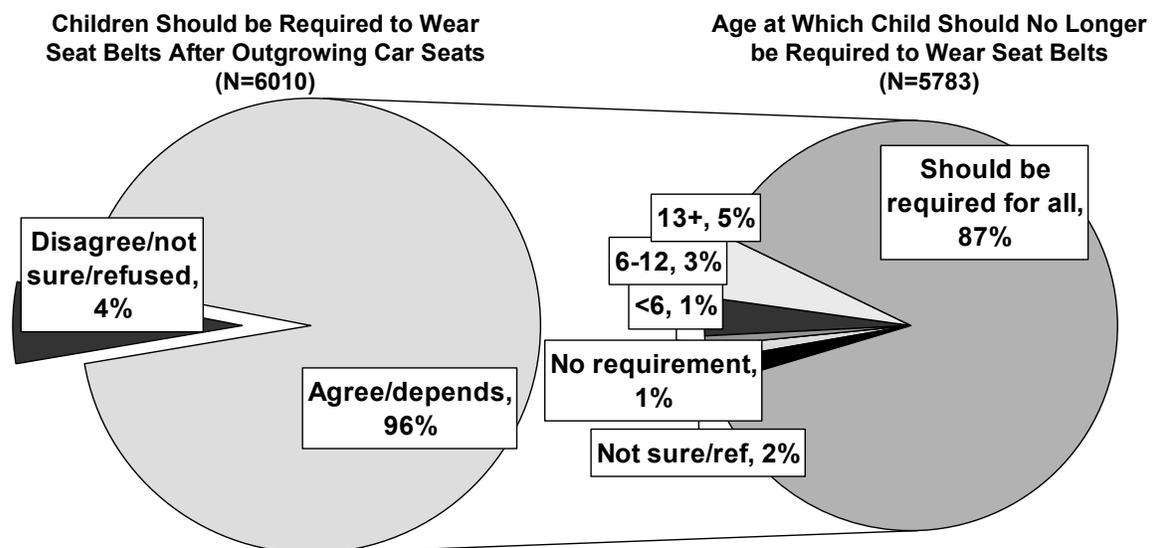
Qx: *What about when children outgrow a child car seat, including booster seats? Do you agree or disagree that they should be required by law to wear seat belts when riding in a vehicle?*

Base: *Total population age 16+.*

Unweighted N=6010

Those who agreed that children should be required to wear seat belts after outgrowing car seats/booster 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 (87%) rejected the notion of an upper age limit by saying that seat belt use should be required for all children (which equated to 84% 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 88
Age At Which Children Should No Longer Be Required To Wear Seat Belts



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

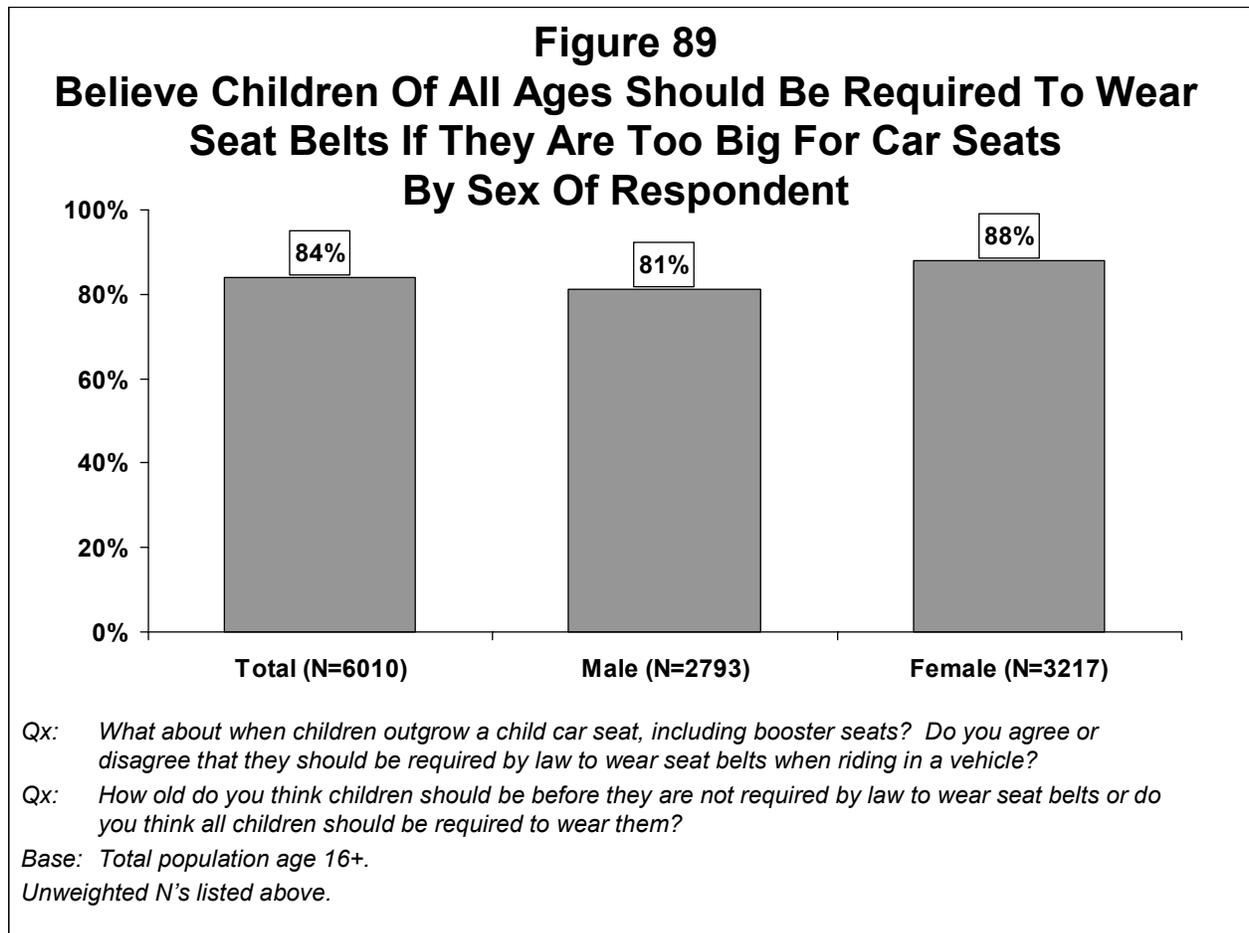
Qx: How old do you think children should be before they are not required by law to wear seat belts or do you think all children should be required to wear them?

Base: Total population age 16+.

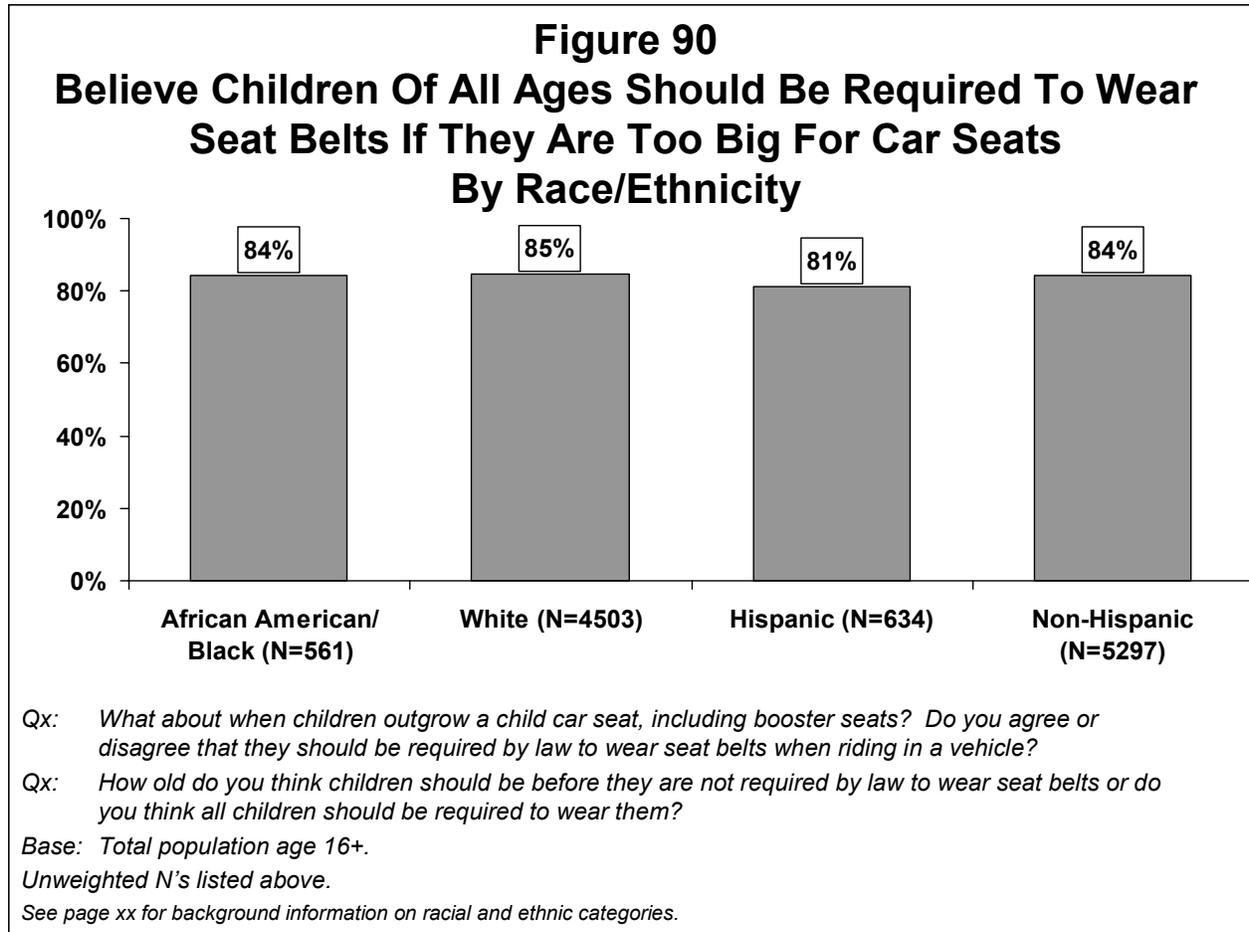
Unweighted N's listed above.

The sum of the percentages in the chart does not equal 100% because the numbers are rounded

As stated on the previous page, 84% of the public age 16 and older believed that all children should be required to wear seat belts after outgrowing car seats (87% of the 96% who agreed there should be a requirement or said it depended on the child's age). Females (88%) were more likely to favor the requirement for all children than were males (81%).



More than eight-in-ten persons in each racial/ethnic group listed below believed that all children should be required by law to wear seat belts after outgrowing car seats.

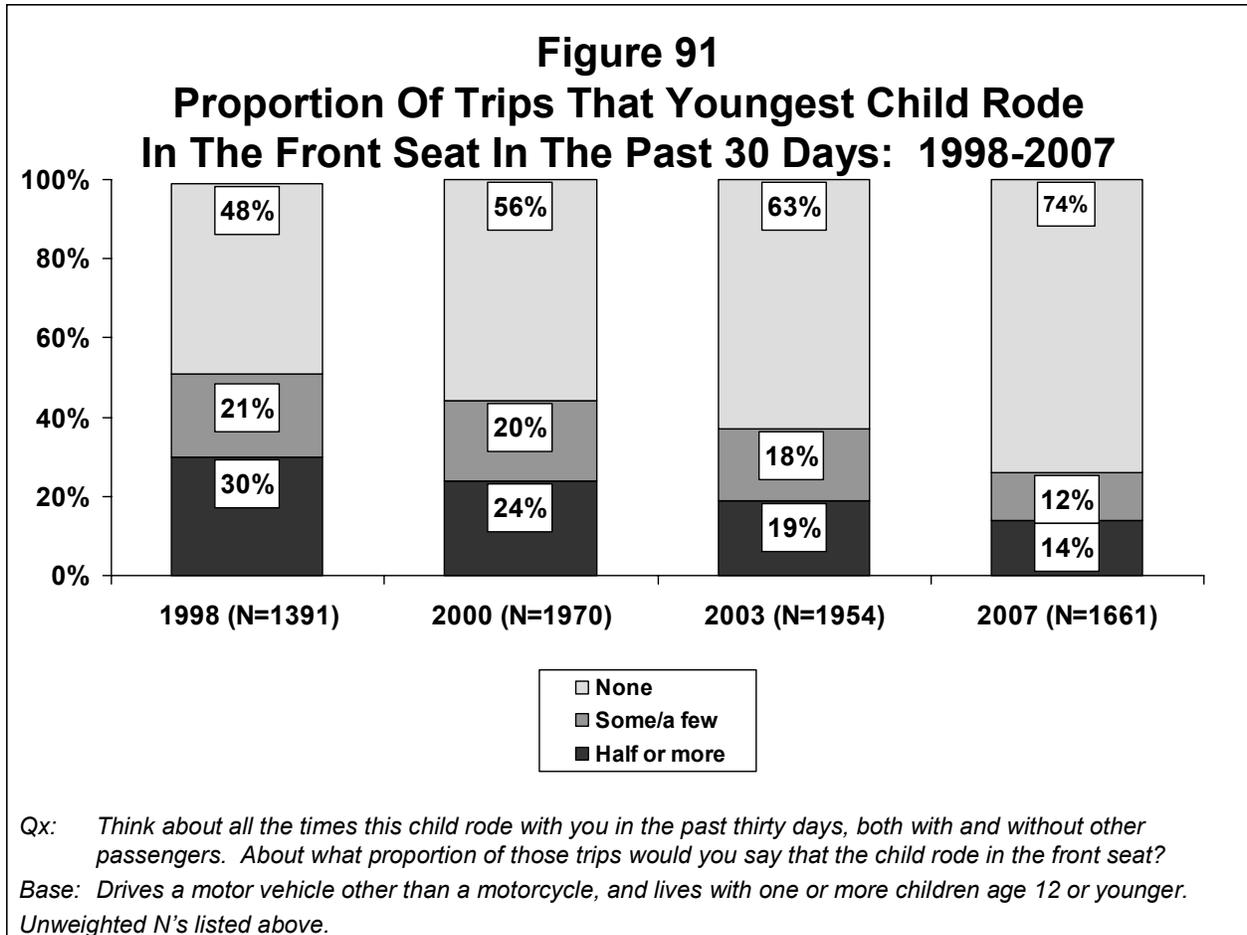


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CHAPTER 8: TRENDS 1994 - 2007

Proportion Of Trips That Child Age 12 Or Younger Rides In Front Seat, 1998-2007.

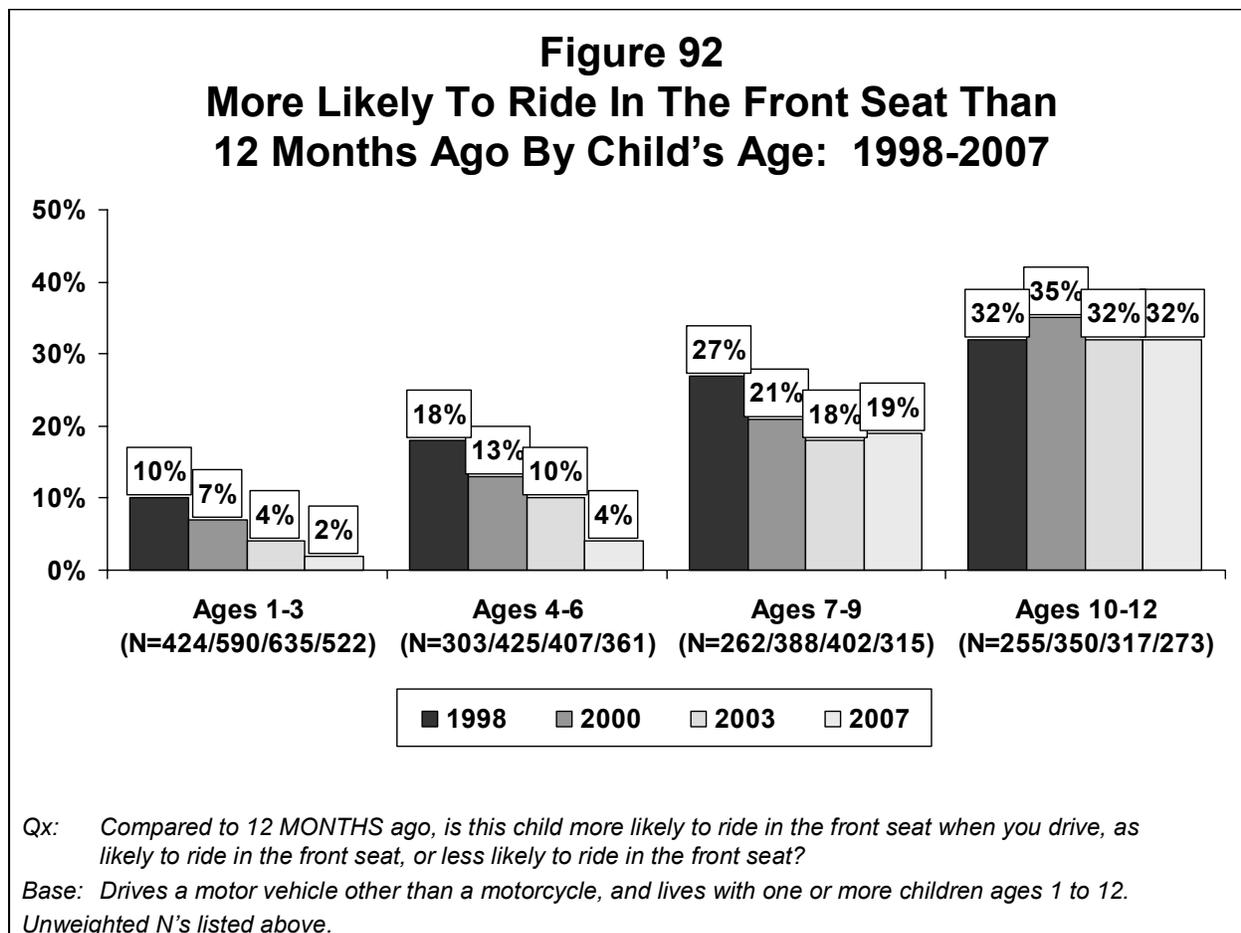
The 1998 survey introduced questions asking the seating position of children age 12 and younger. Drivers who lived with one or more children in this age range were asked the proportion of trips that the youngest child rode in the front seat during the past 30 days when traveling with the respondent. In 1998, 30% said that the child rode in the front seat on half or more trips. The proportion decreased to 24% in 2000, and again to 19% in 2003 and further decreased to 14% in 2007.



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Change In Seating Position Of Child Age 12 Or Younger From 12 Months Ago, 1998-2007

Figure 92 shows less movement to the front seat among younger children in 2007 compared to the survey findings in 2003, 2000 and 1998. This pattern levels out for children ages 10 through 12.



Differences Between Current MVOSS Data And Previous MVOSS Data Concerning Child Restraint Use

Most of the detailed information in the MVOSS concerning attitudes, knowledge, and behavior regarding use of child restraints comes from a subgroup of the survey sample labeled parents/caregivers. Chapter 3 provides the definition of the group for the 2007 survey. This definition differs from that used in 1994-1998 in that the age range for the children was expanded for the 2000 survey. In 2000, drivers entered the parents/caregivers subgroup if they were parents/caregivers of children under age 9. In the surveys conducted from 1994 through 1998, they entered the subgroup if they were parents/caregivers of children under age 6. The 2000 survey extended the age range in order to fully cover the generally recommended ages for booster seat use (ages 4 to 8).

Because the definition of parents/caregivers changes, this means that the 2000, 2003 and 2007 survey results were derived from a somewhat different subgroup than in 1994-1998, thereby affecting comparability of results. The expanded age range not only resulted in inclusion in the 2000, 2003 and 2007 survey of drivers who would have been ineligible for the parents/caregivers subgroup in previous years (i.e., respondents whose youngest child was in the 6-8 age range), but also changed the referent child who would have been selected for some respondents (i.e., if respondents had children both in the 0-5 and 6-8 age ranges, the referent child no longer was restricted to the 0-5 age range in the 2000, 2003 and 2007 survey).

Page 33 notes a second significant change that occurred, this time initiated with the 2007 survey. It involved a change in questions used to determine the type of seat the child was using. While all the surveys strove to be as accurate as possible in determining the seat type, the reader should be aware when reviewing trend data broken out by seat type that different approaches were used to make this determination.

The following pages present trend data from parents/caregivers for the entire 1994-2007 period so that readers have the opportunity to compare results across years. **However, readers should exercise caution in interpreting the trends due to the above-stated issues of comparability of data.**

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Reported All The Time Car Seat Use By Child’s Weight, 1994-2007

Table 19 shows continued high child restraint use among children under 30 pounds. It also shows children weighing 30 to 39 pounds reaching a level of reported child restraint use comparable to that of smaller children. New in this 2007 report, the chart also shows data for children 40 to 60 pounds and 61 pounds or more. The new data corresponds with the collection of data for children up to age 8 starting in 2000.

**Table 19
Reported “All Of The Time” Car Seat Use
By Child’s Weight: 1994-2007**

Child’s Weight	1994	1996	1998	2000	2003	2007
<20 lbs.	93%	96%	99%	86%	98%	99%
20-29 lbs.	89%	86%	95%	93%	93%	97%
30-39 lbs.	60%	68%	76%	87%	88%	95%
40-60 lbs.	N/A	N/A	N/A	28%	43%	67%
61+ lbs.	N/A	N/A	N/A	7%	14%	36%

Qx: *How much does (AGE) weigh?*

Qx: *When you are driving and the (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 1994-1998: Parents/caregivers of children under age 6.

Base 2000-2007: Parents/caregivers of children under age 9 (see Chapter 3 for definition).

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Reported All The Time Car Seat Use By Child's Age, 1994-2007

Table 20 shows a pattern of increasing child restraint use for ages 3, 4, and 5 for all years as well as ages 6, 7 and 8 from 2000 to 2007. The study protocol was changed from reporting on children up to age 5 to reporting on children up to age 8 starting with the study conducted in 2000.

Table 20
Reported "All Of The Time" Car Seat Use
By Child's Age: 1994-2007

Child's Age	1994	1996	1998	2000	2003	2007
<1 year	88%	96%	98%	87%	95%	98%
1 year	86%	89%	99%	95%	94%	98%
2 years	85%	91%	95%	96%	98%	99%
3 years	56%	75%	80%	89%	91%	96%
4 years	33%	33%	46%	66%	80%	95%
5 years	17%	17%	22%	35%	59%	81%
6 years	N/A	N/A	N/A	14%	35%	67%
7 years	N/A	N/A	N/A	8%	16%	47%
8 years	N/A	N/A	N/A	4%	8%	21%

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

Qx: *When you are driving and the (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?*

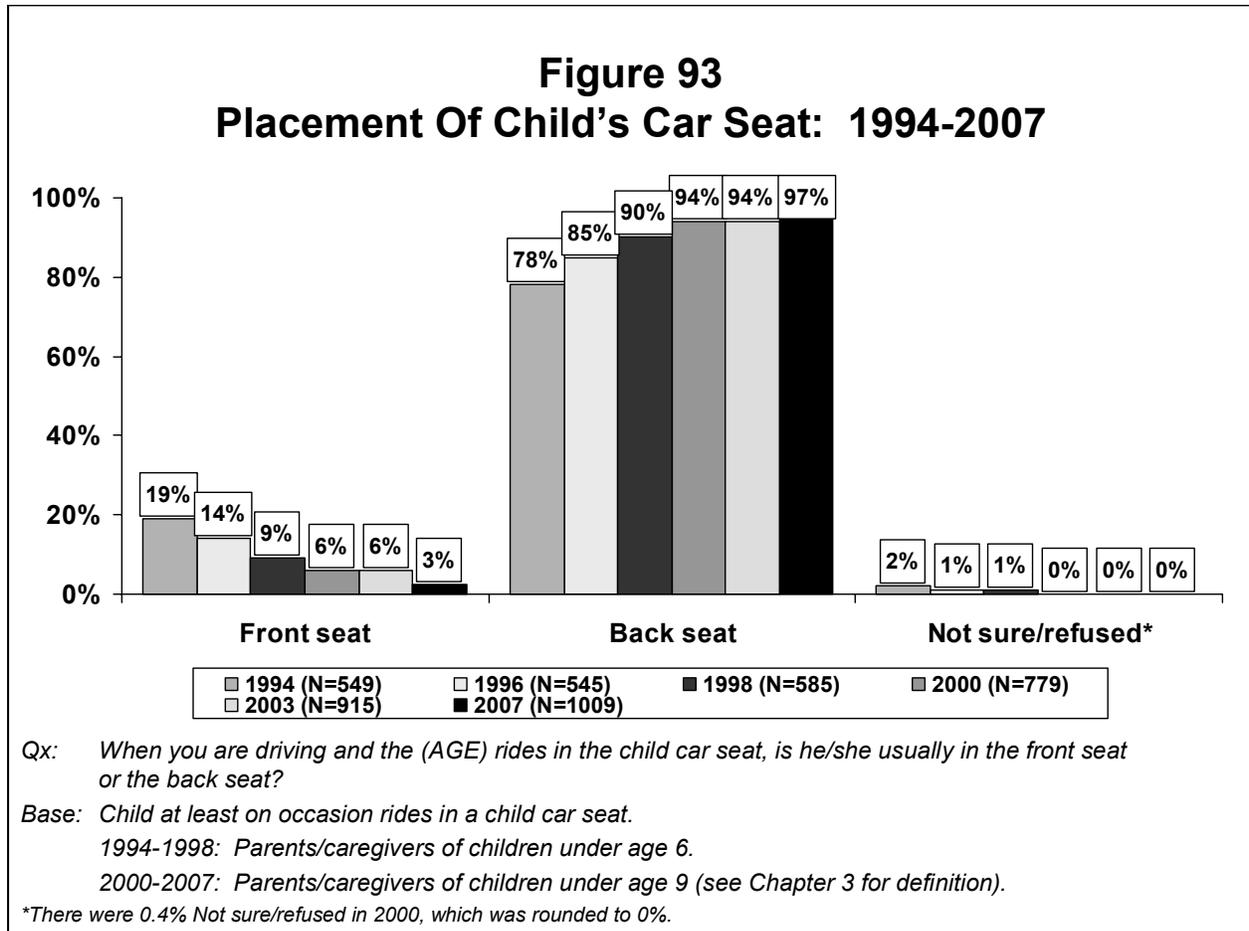
Base 1994-1998: Parents/caregivers of children under age 6.

Base 2000-2007: Parents/caregivers of children under age 9 (see Chapter 3 for definition).

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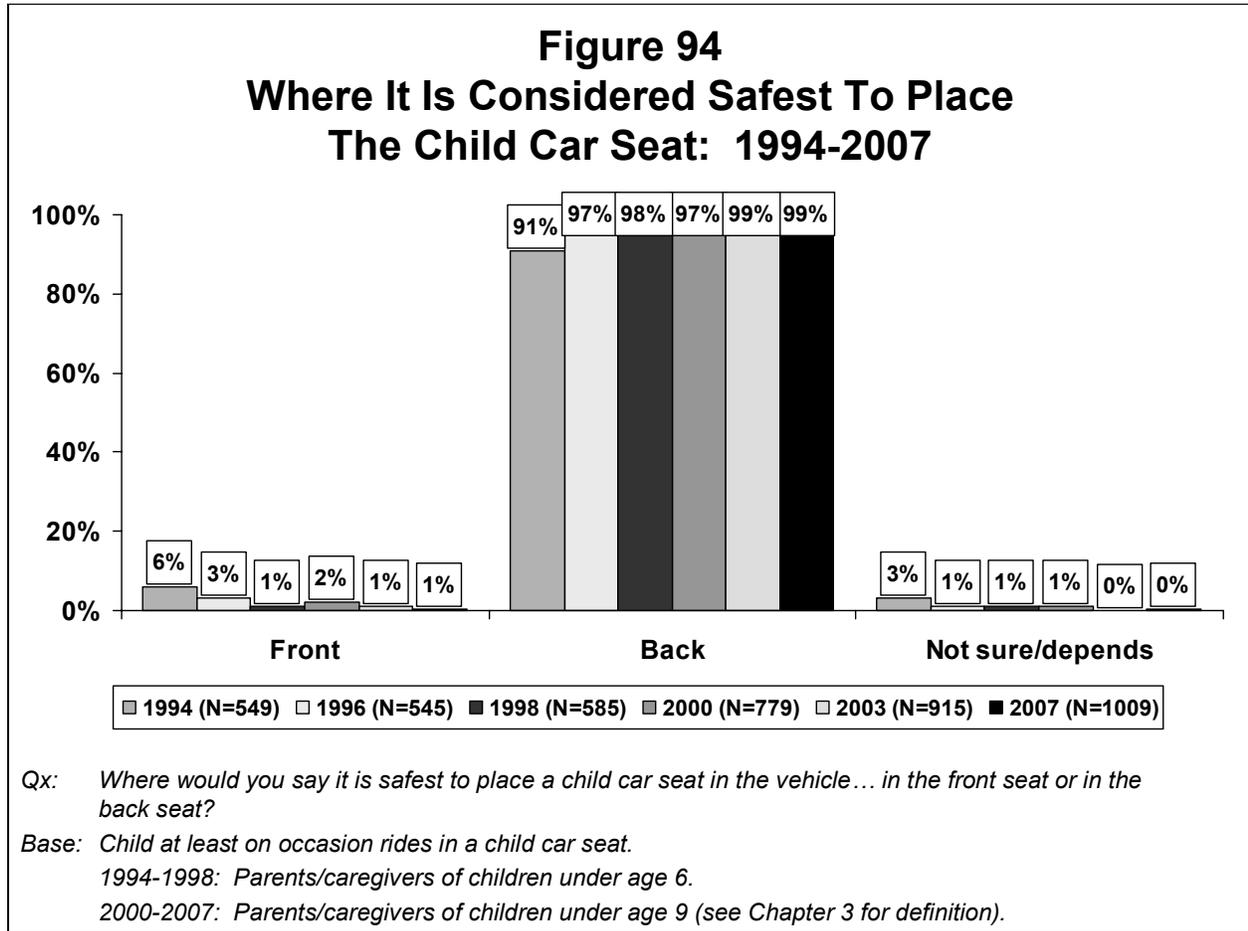
Location Of Car Seat, 1994-2007

The percentage of parents/caregivers who said that the child usually rode in the back seat when in the car seat has risen almost 20 percentage points since 1994, from 78% to 97%.



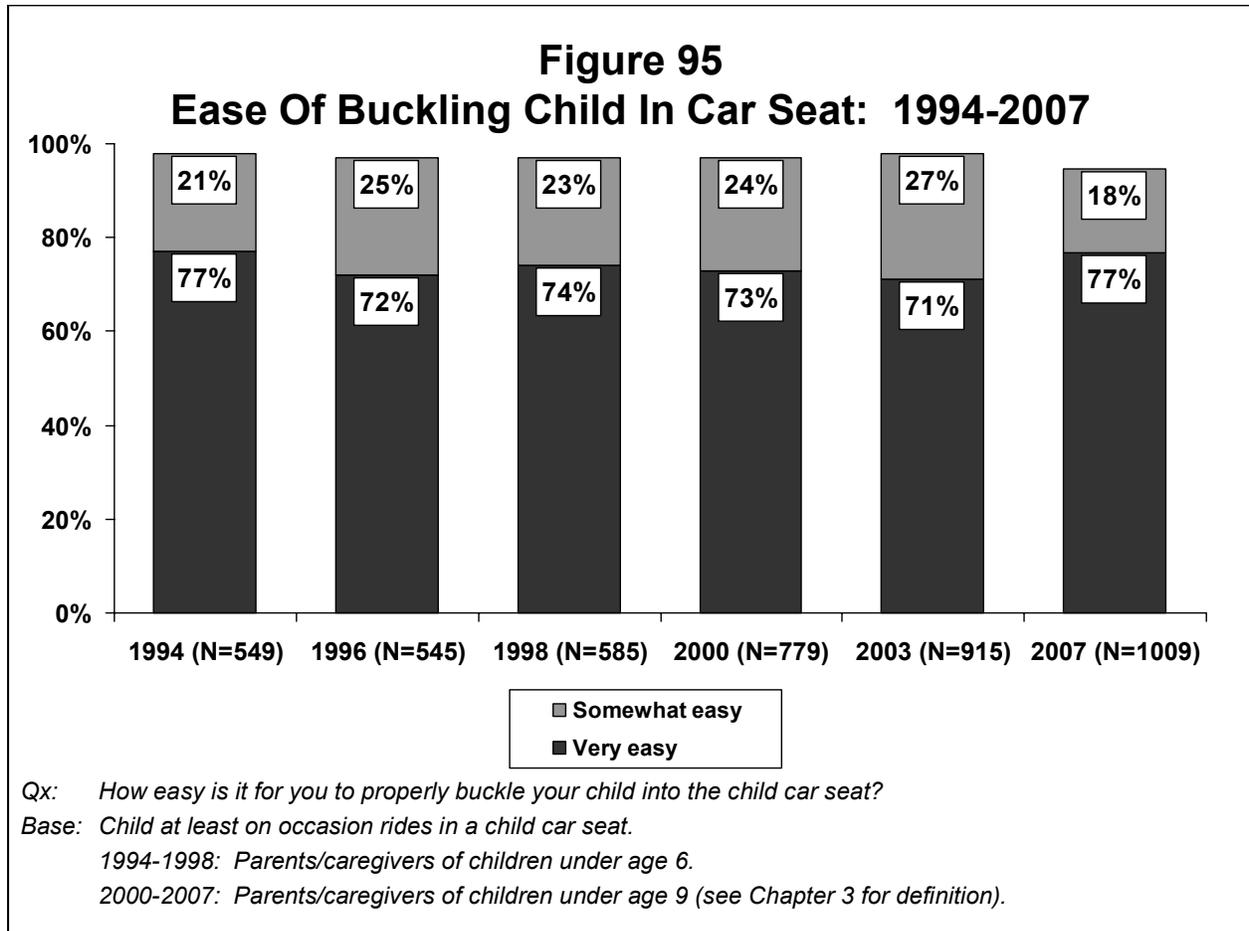
Safest To Place Child Car Seat, 1994-2007

Ninety-nine percent of parents/caregivers of children who used car seats in 2007 knew that the back seat was the safest location to place a child car seat in the vehicle, which was similar to findings from the previous four surveys.



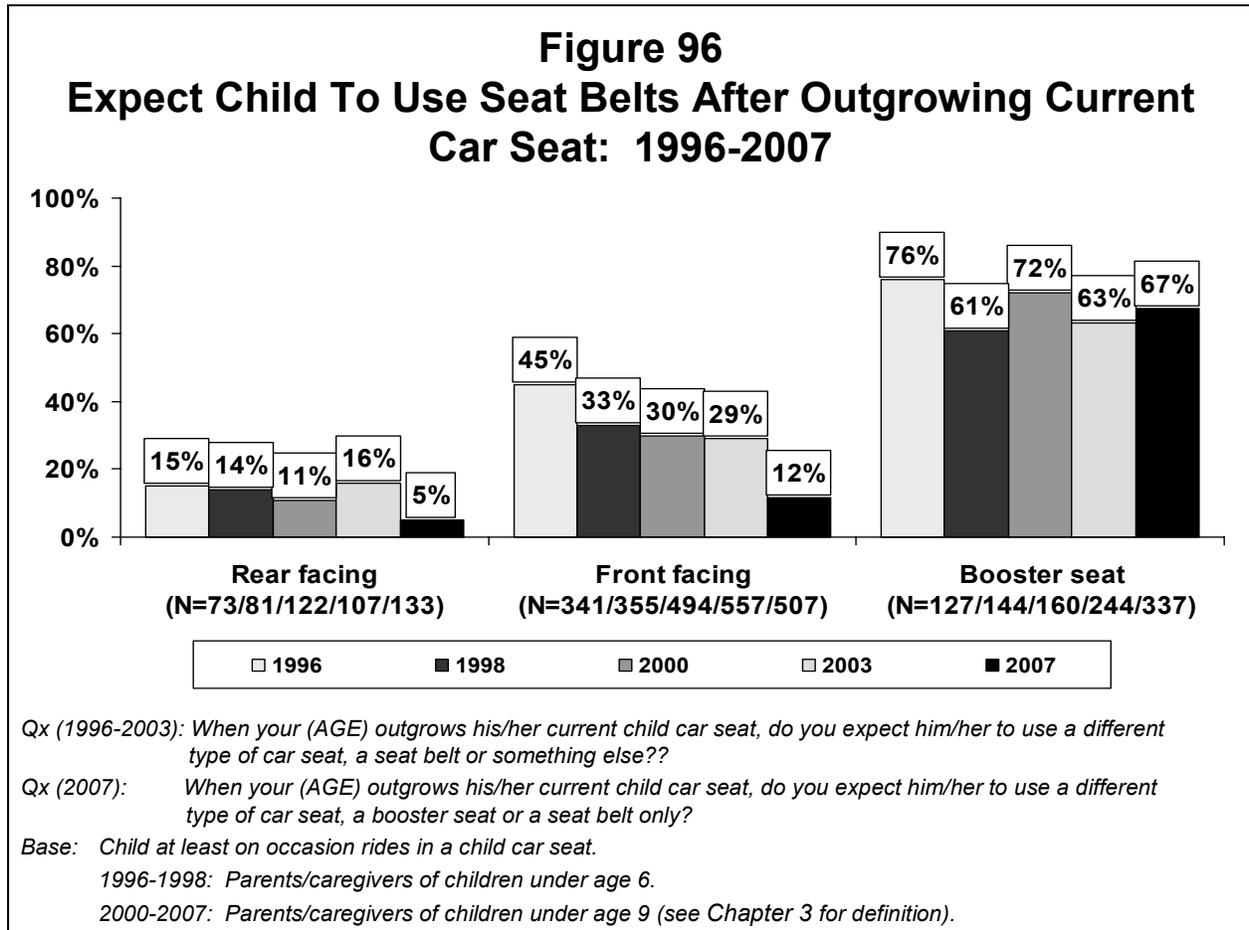
Ease Of Buckling Child, 1994-2007

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.



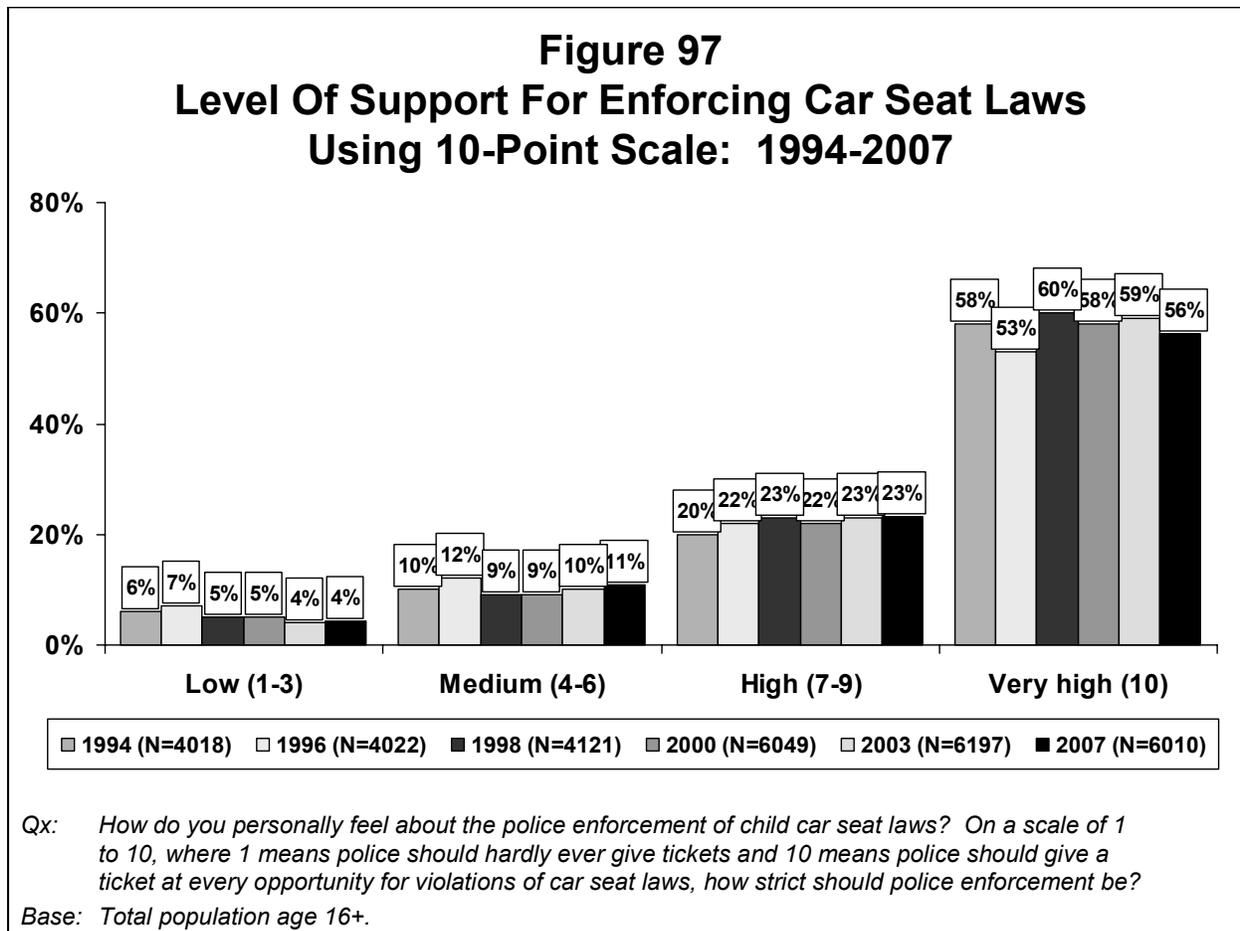
Expected Restraint System For Child After Outgrowing Current Seat, 1996-2007

In 2007, 5% of children in rear facing seats were expected to graduate directly to seat belts compared to more than 10% in each of the earlier survey years in which the question was asked. The percentage of children expected to graduate from front facing child safety seats to seat belts has declined from 45% in 1996 to 12% in 2007.



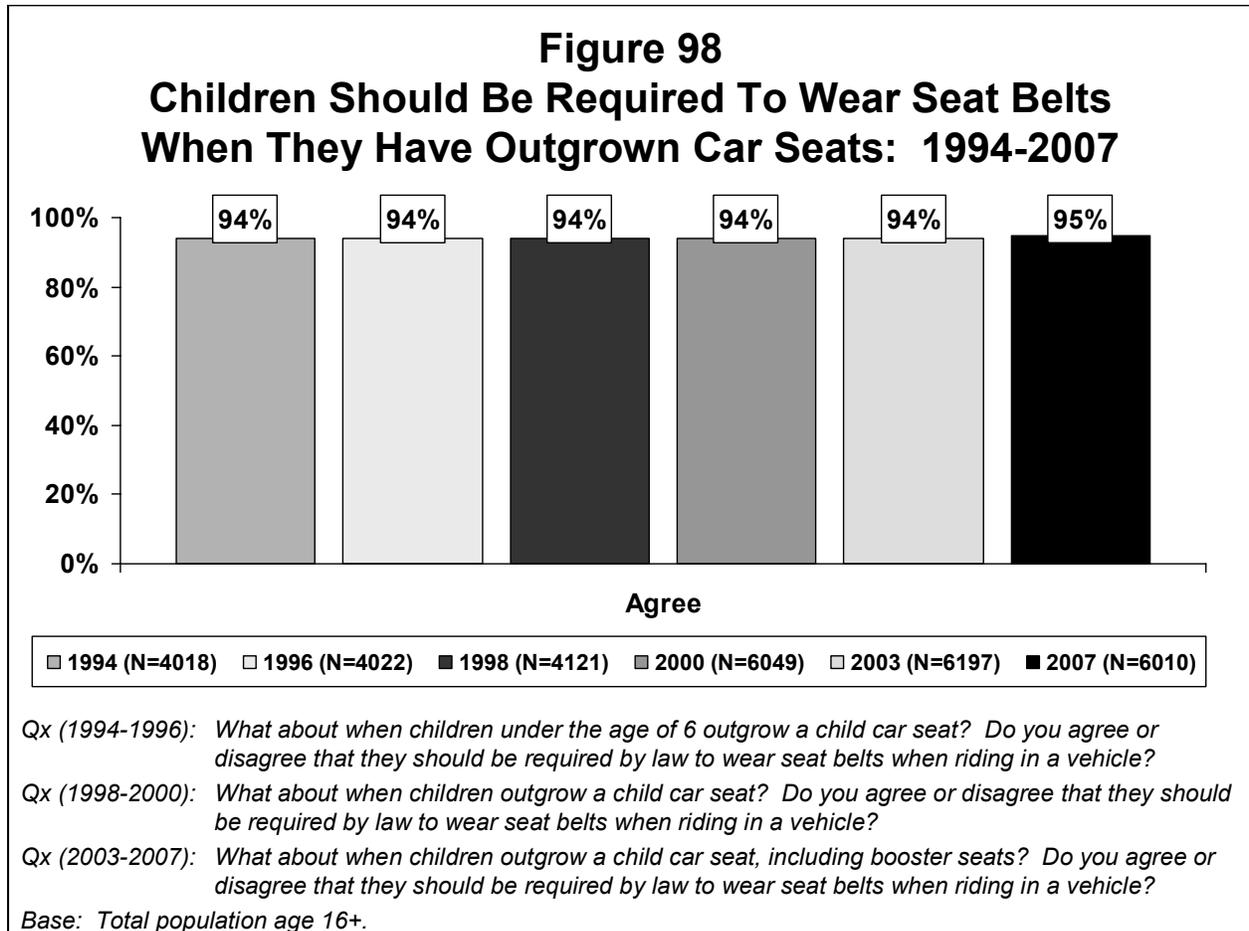
Support For Enforcing Car Seat Laws, 1994-2007

In 2007, 56% of the public believed that police should give a ticket at every opportunity for violations of car seat laws. There was no appreciable change from 1994 (58%).



Support For Laws Requiring Seat Belt Use After Child Has Outgrown Car Seat, 1994-2007

Nearly all of the public (94%-95%) in each survey year has agreed that children who have outgrown child car seats should be required by law to wear seat belts when riding in a vehicle.



2007 SURVEY RESULTS

APPENDIX A: *PRECISION OF SAMPLE ESTIMATES

*Reprinted from:

Boyle, J. and C. Lampkin. 2007 Motor Vehicle Occupant Safety Survey. Volume I. Methodology Report.
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:

$$p \pm z_{\alpha/2} \cdot SE(p) = p \pm z_{\alpha/2} \cdot \sqrt{\frac{(p \cdot q)}{(n - 1)}}$$

Where:

- SE(p) = the standard error of the sample estimate for a proportion
- p = some proportion of the sample displaying a certain characteristic or attribute
- q = (1 - p)
- n = the size of the sample
- $z_{\alpha/2}$ = (1- α /2)-th percentile of the standard normal distribution (1.96 for 95% CI)

The sample sizes for the surveys are large enough to permit estimates for sub-samples of particular interest. Table 21, on the next page, presents the expected size of the sampling error for specified sample sizes of 12,000 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 21
Expected Sampling Error (Plus or Minus)
At the 95% Confidence Level
(Simple Random Sample)

Percentage of the Sample or Sub-Sample Giving
 A Certain Response or Displaying a Certain
 Characteristic for Percentages Near:

Size of Sample or Sub-Sample	<u>10 or 90</u>	<u>20 or 80</u>	<u>30 or 70</u>	<u>40 or 60</u>	<u>50</u>
12,000	0.5	0.7	0.8	0.9	0.9
6,000	0.8	1.0	1.2	1.2	1.3
4,500	0.9	1.2	1.3	1.4	1.5
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 over-sample of youth and young adults (age 16-39). Both the cross-sectional sample and the over-sample 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:

$$ASE = 1.96 \sqrt{\sum_{h=1}^g \left[W_h^2 \left\{ (1-f_h) \left(\frac{s_h^2}{n_h} \right) \right\} \right]}$$

where:

- ASE = allowance for sampling error at the 95% confidence level;
- h = a stratum;
- g = number of strata;
- W_h = proportion of stratum h to total population (N_h/N);
- f_h = sampling fraction in stratum h – sample size divided by population size in stratum h (n_h/N_h);
- n_h = the sample size for the stratum h.
- s²_h = sample variance in stratum h – for proportions, this is equal to

$$\frac{n_h}{n_h - 1} p_h (1 - p_h)$$

Although Table 21 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 (h₁ and h₂) 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 (w₁) was 42.2 percent while the proportion for the 40 and over stratum (w₂) was 57.8 percent.

As shown in Table 22, the disproportionate sampling increases the confidence interval for total sample estimates by an average of 17.1 percent, compared to a simple random sample of the same size. This means the sample design decreases the sampling precision for total population estimates somewhat, while increasing the precision of sampling estimates for the sub-sample aged 16-39 years old. Since the maximum difference in the point estimate between the stratified disproportionate sample and a simple random sample is less than .34 of a percentage point, the sampling error table for a simple random sample will provide a reasonable approximation of the precision of sampling estimates in the survey.

TABLE 22
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

<i>VARIABLE (Version 1 only)</i>	p=	HYPOTHETICAL PROPORTIONATE SAMPLING*	CURRENT DIS- PROPORTIONATE SAMPLING	DIFFERENCE IN CONFIDENCE INTERVALS
<i>Driven in the past year</i>	89.3%	0.79	0.89	12.7%
<i>Drank alcohol in past year</i>	61.2%	1.24	1.42	14.5%
<i>Always use seat belt (N=5252)</i>	75.1%	1.17	1.37	17.1%
<i>Dislike seat belts (N=5258)</i>	30.4%	1.17	1.39	18.8%
<i>Always use passenger belt (N=5376)</i>	85.7%	0.93	1.11	19.4%
<i>Favor (a lot) seat belt laws</i>	71.4%	1.15	1.32	14.8%
<i>Should be primary enforcement</i>	67.3%	1.19	1.38	16.0%
<i>Ever ticketed by police for seatbelt</i>	9.4%	0.74	0.91	23.0%
<i>Ever injured in vehicle accident</i>	26.3%	1.12	1.28	14.3%
<i>Drives a car for work almost every day</i>	52.3%	2.27	2.61	15.0%
<i>Set a good example for others (N=5192)</i> <i>(reason for using seat belts)</i>	77.8%	1.12	1.28	14.3%
<i>Driver-side air bag in vehicle (N=4755)</i>	99.0%	0.28	0.33	17.9%
<i>Race: Black/African American</i>	9.9%	0.76	0.89	17.1%
<i>Ethnicity: Hispanic</i>	13.4%	0.87	1.1	26.4%
<i>Gender: Male</i>	48.4%	1.27	1.46	15.0%
<i>AVERAGE DIFFERENCE IN CONFIDENCE INTERVALS</i>				17.1%
Total sample proportions using SRS formula				
Unless specified otherwise N=5908				

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 that 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. The maximum expected sampling error (i.e., confidence interval in the previous formula) of the first sample is designated $s1$ and the maximum expected sampling error of the second sample is $s2$. The sampling error of the difference between these estimates is sd and 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 sub-samples for various sizes is presented in Table 23. This table can be used to determine the size of the difference in proportions between drivers and non-drivers or other sub-samples that would be statistically significant.

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TABLE 23. Pooled Sampling Error Expressed as Percentages for Given Sample Sizes (Assuming P=Q)

Sample Size	4000	3500	3000	2500	2000	1500	1000	900	800	700	600	500	400	300	200	100	50
	14.1	14.1	14.1	14.1	14.2	14.2	14.3	14.4	14.4	14.4	14.4	14.5	14.5	14.5	14.6	14.6	14.7
	10.0	10.0	10.0	10.0	10.1	10.2	10.3	10.4	10.4	10.4	10.4	10.5	10.5	10.5	10.6	10.6	10.8
	7.1	7.1	7.2	7.2	7.3	7.4	7.6	7.7	7.8	7.8	7.8	7.9	8.0	8.0	8.0	8.2	8.5
	5.9	5.9	5.9	6.0	6.1	6.2	6.5	6.5	6.6	6.6	6.6	6.8	6.9	7.2	7.5	7.5	7.5
	5.1	5.2	5.2	5.3	5.4	5.5	5.8	5.9	6.0	6.0	6.0	6.1	6.3	6.6	6.9	6.9	6.9
	4.7	4.7	4.7	4.8	4.9	5.1	5.4	5.5	5.6	5.6	5.6	5.7	5.9	6.2	6.2	6.2	6.2
	4.3	4.3	4.4	4.5	4.6	4.7	5.1	5.2	5.3	5.3	5.3	5.5	5.7	6.2	6.2	6.2	6.2
	4.0	4.1	4.1	4.2	4.3	4.5	4.8	4.9	4.9	5.1	5.2	5.5	5.2	5.7	5.2	5.2	5.2
	3.8	3.8	3.9	4.0	4.1	4.3	4.7	4.8	4.9	4.9	4.9	5.1	5.2	5.7	5.2	5.2	5.2
	3.6	3.7	3.7	3.8	3.9	4.1	4.5	4.6	4.9	4.9	4.9	5.1	5.2	5.7	5.2	5.2	5.2
	3.5	3.5	3.6	3.7	3.8	4.0	4.4	4.6	4.9	4.9	4.9	5.1	5.2	5.7	5.2	5.2	5.2
	3.0	3.0	3.1	3.2	3.3	3.6	4.4	4.6	4.9	4.9	4.9	5.1	5.2	5.7	5.2	5.2	5.2
	2.7	2.7	2.8	2.9	3.1	3.6	4.4	4.6	4.9	4.9	4.9	5.1	5.2	5.7	5.2	5.2	5.2
	2.5	2.6	2.7	2.8	3.1	3.6	4.4	4.6	4.9	4.9	4.9	5.1	5.2	5.7	5.2	5.2	5.2
	2.4	2.4	2.5	2.8	3.1	3.6	4.4	4.6	4.9	4.9	4.9	5.1	5.2	5.7	5.2	5.2	5.2
	2.3	2.3	2.5	2.8	3.1	3.6	4.4	4.6	4.9	4.9	4.9	5.1	5.2	5.7	5.2	5.2	5.2
	2.2																

Sample Size

DOT HS 810 978
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2007 Motor Vehicle Occupant Safety Survey

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