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Volume 3: Child Passenger Safety

Report

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16. Abstract <p>The 2016 Motor Vehicle Occupant Safety Survey used address-based sampling with a multi-mode methodology to produce nationally representative estimates of self-reported behaviors, attitudes, and knowledge related to various motor vehicle occupant safety topics among United States adults 18 and older. The current volume is third in a series of four volumes describing the survey and the results. The others are Volume 1: Methodology Report; Volume 2: Seat Belt Report; and Volume 4: Emergency Medical Services, Crash Injury Experience, and Other Traffic Safety Topics.</p>			
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This report is the third in a series of four reports on the 2016 Motor Vehicle Occupant Safety Survey (MVOSS). The other three reports are:

Bailly, K., Martin, K., & Block, A. (2019, December). *2016 motor vehicle occupant safety survey; Volume 1: Methodology report* (Report No. DOT HS 812 851). National Highway Traffic Safety Administration. Retrieved from https://rosap.ntl.bts.gov/view/dot/43610/dot_43610_DS1.pdf.

Spado, D., Schaad, A., & Block, A. (2019, December). *2016 motor vehicle occupant safety survey; Volume 2: Seat belt report* (Report No. DOT HS 812 727). National Highway Traffic Safety Administration. Retrieved from <https://rosap.ntl.bts.gov/view/dot/43609>.

Diecker, K., & Block, A. (in press). *2016 motor vehicle occupant safety survey; Volume 4: Emergency medical services, crash injury experience, and other traffic safety topics*. National Highway Traffic Safety Administration.

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Introduction

Background

The National Highway Traffic Safety Administration has conducted seven periodic applications of the Motor Vehicle Occupant Safety Survey (MVOSS) in 1994, 1996, 1998, 2000, 2003, 2007, and the focus of this report, 2016. The MVOSS is a nationally representative survey of self-reported behaviors, attitudes, and knowledge related to various traffic safety topics. While the focus of the survey is adult seat belt use and child passenger safety (including child car seats), there are also questions related to emergency medical services, crash injury experience, emergency situations, air bags, speeding, cell phone use, and alcohol-impaired driving.

This report presents findings from the 2016 MVOSS pertaining to child car seats. Specifically, it explores the following areas.

1. Reported restraint use by children (12 and younger)
2. Car seat acquisition and registration
3. Sources of information about car seats
4. Car seat installation
5. Lower Anchors and Tethers for Children (LATCH)
6. Inspection stations
7. Part-time use of car seats
8. Non-use of car seats
9. Booster seat use
10. Child restraint laws

There is also a supplemental results section that displays selected relationships among survey variables. However, because no statistical significance testing was conducted, and some cases have small sample sizes, these relationships must be interpreted with caution. This section also displays responses across the survey years of 1994 and 2016 on selected issues, but in the absence of trend analysis, these apparent changes must also be interpreted with caution. These tables are meant to describe the responses and to suggest areas for further analysis. As described below, further analysis of this data should consider possible bias due to the relatively low response rate (24%) and potentially large standard errors due to small sub-populations (such as caregivers who regularly transport a child in the household, abbreviated HH) and item non-response.

Methodology

The 2016 MVOSS used address-based sampling and multi-mode administration with web and mail response options to obtain national estimates of the United States population 18 and older. This methodology discontinued telephone administration used in past years. Other notable changes include that the 2016 survey sampled people 18 and older, while previous surveys sampled people 16 and older. In addition, the survey changed from interviewer to self-administered, which can alter the social desirability effect (i.e., the tendency for respondents to provide answers that will be viewed favorably by others, even if not accurate) on responses. All

these changes in methodology can affect comparability of data across years, and readers should exercise caution when interpreting trends. The complete methodology is documented in the accompanying report, *2016 Motor Vehicle Occupant Safety Survey: Volume 1, Methodology Report*.¹

The survey was conducted from June 14, 2016, to February 24, 2017. Administration of two survey versions yielded 11,419 web and mailed paper questionnaires with 6,009 completed responses for Version A and 5,410 completed responses for Version B. Although some questions appeared in both versions (e.g., demographics, crash injury experience, seat belt use), each questionnaire generally had its own set of distinct topics. Version B focused on child passenger safety, emergency medical services, and emergency situations. As discussed in the MVOSS Methodology Report, Version A had an overall response rate of 31 percent, but Version B had a response rate of 24 percent. Unit non-response bias may be an issue as the respondents were different from the Census population, particularly with respect to age, and early respondents were different from late respondents. Although unit non-response adjustments were conducted during the post-stratification weighting process, the difficulty of understanding the missing unit mechanism and the lack of frame information make potential non-response bias important to note for anyone using these data or interpreting results. In addition, the standard errors for all statistics in this report can be large such that differences between groups that appear large in figures or tables should be examined carefully and not assumed to be statistically significant. The large standard errors may be due to small subgroups as well as item non-response. Each figure and table provide the sample size for the subgroup (base), which is frequently much smaller than 5,410, and the number of missing item responses for the subgroup.

Caregiver Subgroup

Respondents were classified as caregivers when they drove children ages 0 to 12 (“under 13”) at least occasionally in the past year regardless of whether the children lived in the households or whether the children were relatives. Results are reported for two subgroups of caregivers. First, a few questions were asked of people who indicated they only drove children who did not live in their households (Driving Children Not in the Same Household). Questions that were more detailed were asked of people who lived with the children they drove and those who were related to children they drove but did not live with them (e.g., grandparents, divorced parents) reported in “Driving Relatives and Children in the Same Household.” These two groups overlapped as some people who reported not living with the children they drove first completed the questions for that group and later indicated they were related to at least one child they drove and subsequently completed the more detailed questions for that group.

The caregiver subgroup definition has changed across survey years to include an increasing child age range. The recent increase for the 2016 survey included the older children covered under booster seat recommendations. The subgroup was also adjusted to include non-relatives.

¹ Bailly, K., Martin, K., & Block, A. (2019, December). *2016 Motor vehicle occupant safety survey: Volume 1, Methodology report* (Report No. DOT HS 812 851). National Highway Traffic Safety Administration. Retrieved from https://rosap.ntl.bts.gov/view/dot/43610/dot_43610_DS1.pdf.

Table 1. Age Range Changes to Caregiver Subgroup Across MVOSS Years

Survey Years	Child Age Range	New Group Included Compared to Previous Years
1994, 1996, 1998	0 – 5 (under 6)	N/A
2000, 2003, 2007	0 – 8 (under 9)	6 – 8
2016	0 – 12 (under 13)	9 – 12

Results are not completely comparable across survey years because data was derived from different subgroups of caregivers. Some respondents included in the later survey years would have been excluded during earlier years before the age range was expanded to include their children. In addition, these changes may have affected which child was selected from a household with multiple children across survey years. Older children excluded from possible selection during early survey years would have been included during later survey years.

Of the 5,410 Version B completed surveys, 2,086 respondents were classified as caregivers. Of these respondents, those who were related to the children they drove (in the household or not) or lived with the children they drove were asked to select the child with the most recent birthday out of all children under 13 that they occasionally drove and to answer questions 16 to 82 pertaining to their experiences with the selected children. There were 1,086 caregivers who were each asked to select a child (all 567 with a child in the household in Table 2 and roughly one third of the group with a child not in their household in Table 2).

Table 2. Survey Completed Surveys

Drove a child 0 - 12 (under 13) at least occasionally in last year	Respondents
Yes, child in household	567
Yes, child not in HH	1,519
Caregiver Subgroup (Subtotal)	2,086
Does not drive children	2,888
Does not drive	155
Missing	281
Version B Questionnaires Completed (Total)	5,410

Note: "Missing" includes surveys lacking sufficient data to classify, usually due to item nonresponse.

Table 2 (cont. from previous page). Caregiver Subgroups as Reported

Drove a child 0 to 12 at least once in the last year	Respondents
1) Yes, child lives in HH	567
2) Yes, child is relative but does not live in HH	519
3) Yes, child does not live in HH and is not a relative	1000
4) Yes, drives child less than occasionally	214
Drivers of Child Not in Same HH (2+3+4)	1733
Relative and Drivers of Children in Same HH (1+2)	1086

The first 15 questions were used to identify caregivers. These questions pertained to experiences driving one or more children under 13. These questions included the self-reported car seat use for drivers of children outside of the households.

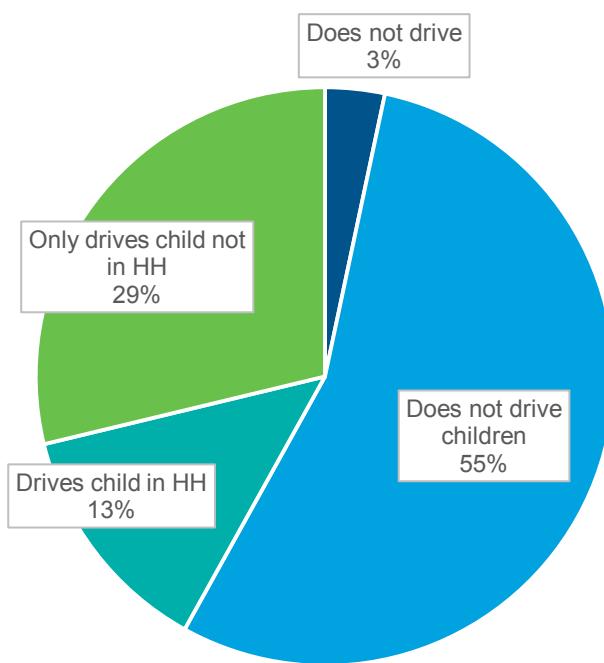
The percentages presented in this report are weighted to reflect the national population 18 and older. Unweighted sample sizes (“n”) are included so that readers know the exact number of respondents answering a given question. Readers are cautioned that some subgroup analyses are based on a small number of cases and therefore may not reflect the same precision as those with more cases. Percentages for some items may not add to 100 percent due to rounding or because the question allowed for more than one response. None of the statistics in the figures or tables are adjusted for missing values using imputation or other methods.

The survey used two questions to categorize cases for subgroup analyses involving ethnicity and race. 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 first question (i.e., it was asked of every respondent). Respondents chose from several different racial categories (American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, and White) and could select more than one. For purposes of analysis, a respondent was assigned to a specific racial category if the respondent selected only that category. Results involving race/ethnicity include categories for White, Black or African American, Hispanic, and Non-Hispanic. Other races were not reported as independent categories because sample sizes were too small for these groups.

Section 1: Primary Results

The survey asked if respondents had driven children from 0 to 12 (referred to as “children” in the terminology in this report, and ignoring those 13 to 18 years old) in the last year, how they were related to the children they drove, and if the children they drove lived with the respondent. Responses to these questions were used to classify a respondent as a caregiver, which is defined as a parent or other person who had occasionally driven a child regardless of whether the child lived in the respondent’s household. Most respondents reported that they did not drive children of this age. **Figure 1** shows the categories based on the four questions asked to derive drivers, caregivers, and whether the children they drove lived in the same households.

Figure 1. Frequency of Driving With a Child 0 to 12 Years in the Past Year



Q1: How often do you drive a motor vehicle?

Q9: For each child UNDER AGE 13 living in your household, please enter the child’s age, gender, and your relationship to the child, going from youngest to oldest. Enter 0 if the child is less than 1 year old. Enter multiple births separately starting with the youngest. Twins (triplets, etc.) are entered separately, youngest first.

Q10: Do you ever drive with (the/at least one) child under 13 that you just mentioned?

Q12: In the past 12 months, have you driven with any children under age 13?

HH = Household.

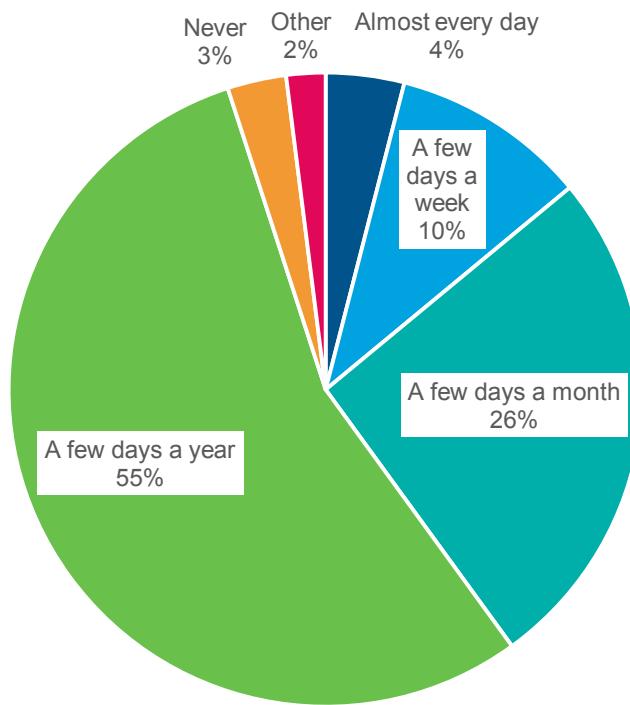
Base: All respondents, n = 5,410.

Unweighted n = 5,129, missing responses, n = 281.

Driving Children Not in the Same Household

The 1,733 respondents who did not live with the children they drove indicated how frequently they drove children (**Figure 2**) and whether those children were in a child restraint system when being driven (**Figure 3**). This group included the 1,519 caregivers from Table 2 plus an additional 214 respondents who had each driven a child at least once in the past year but were not classified as caregivers because they did not indicate they drove children at least occasionally. Respondents completing the paper survey could respond “Never” for their frequency of driving children to catch any respondents who had not appropriately skipped questions earlier. The online survey automatically skipped these questions for respondents, which eliminated this issue.

Figure 2. Frequency of Driving Children 0 to 12 Years: Drivers Who Do Not Live With Child



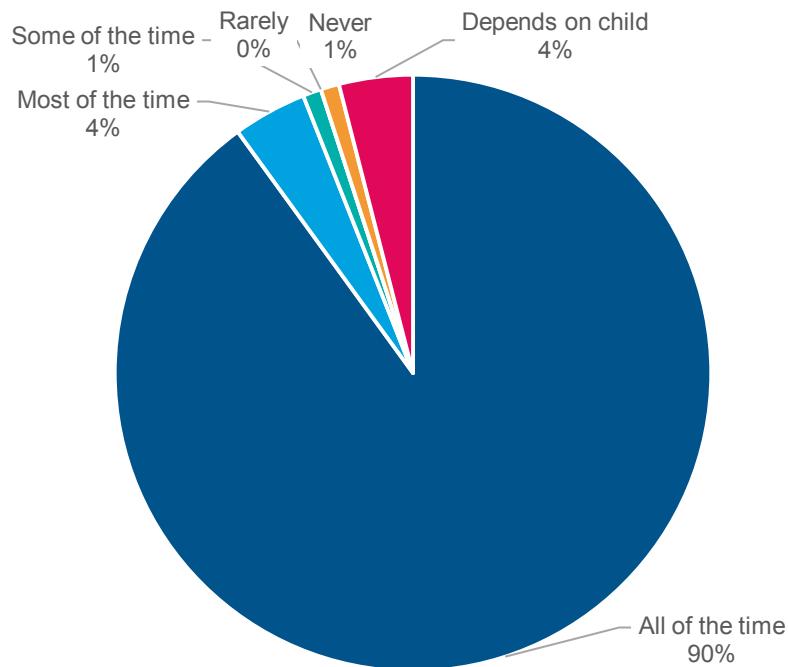
Q13: How often do you drive with children under age 13?

Base: Does not live with a child under 13, but has driven with child passengers in that age range in the past year, n = 1,733.

Unweighted n = 1,546, missing responses, n = 187.

Figure 3 shows that most of the respondents who drove children from outside of their households reported always using car seats, booster seats, or seat belts.

Figure 3. How Often Children (0 – 12) Use Car Seats, Boosters, or Seat Belts: Drivers of Children Outside Homes



Q15: When you are driving and children under age 13 are riding with you, would you say that they are in a car seat, booster seat, or a seat belt?

Base: Does not live with a child under 13, but has driven with child passengers in that age range in the past year, n = 1,733

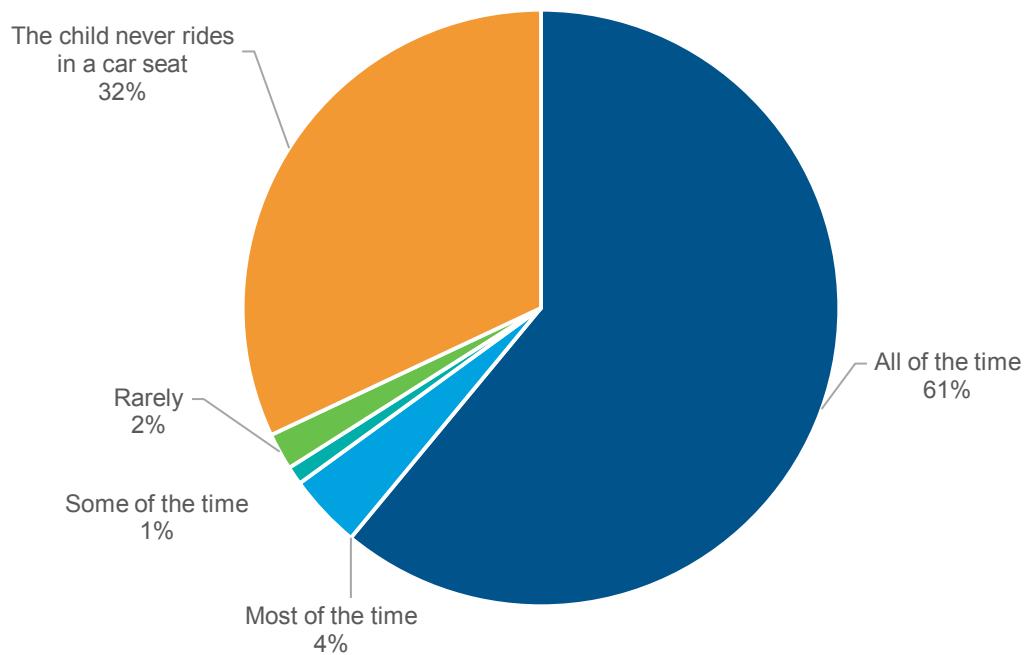
Unweighted n = 1,610, missing responses, n = 123.

Driving Relatives and Children in the Same Household

The survey asked more extensive questions about car seat and booster seat use of the 1,086 caregivers who lived with the children they drove (the 567 caregivers from Table 2) or were related to children they drove who did not live in their households, such as grandparents and divorced parents (519 of the 1,519 from Table 2). These questions pertained to the child with the most recent birthday who was selected as the subject for responding.

Figure 4 shows that nearly two-thirds of caregivers reported using car seats or booster seats all the time for the selected children within their households.

Figure 4. Frequency of Child (0 – 12) Using a Car Seat or Booster Seat: Drivers of Relatives and Children Inside Homes



Q20: When you are driving and the [SELECTED CHILD] rides in the vehicle with you, how often does (he/she) ride in a car seat? Car seats include booster seats.

Base: Drive with a child under 13 who lives in household, n = 1,086.

Unweighted n = 1,060, missing responses, n = 26.

Self-Reported Child Restraint Use

The 736 caregivers who reported that the selected child ever rode in a car seat or booster seat were asked the last time the child did not ride in one. Of those who responded that the child was in a restraint system all the time, nearly all reported that the child had never *not* ridden in a car seat or booster seat.

Table 3. Percentage of Children Not Riding in Car Seats or Booster Seats Recently, Among Those Who Ride in Car Seats or Booster Seats at Least Occasionally

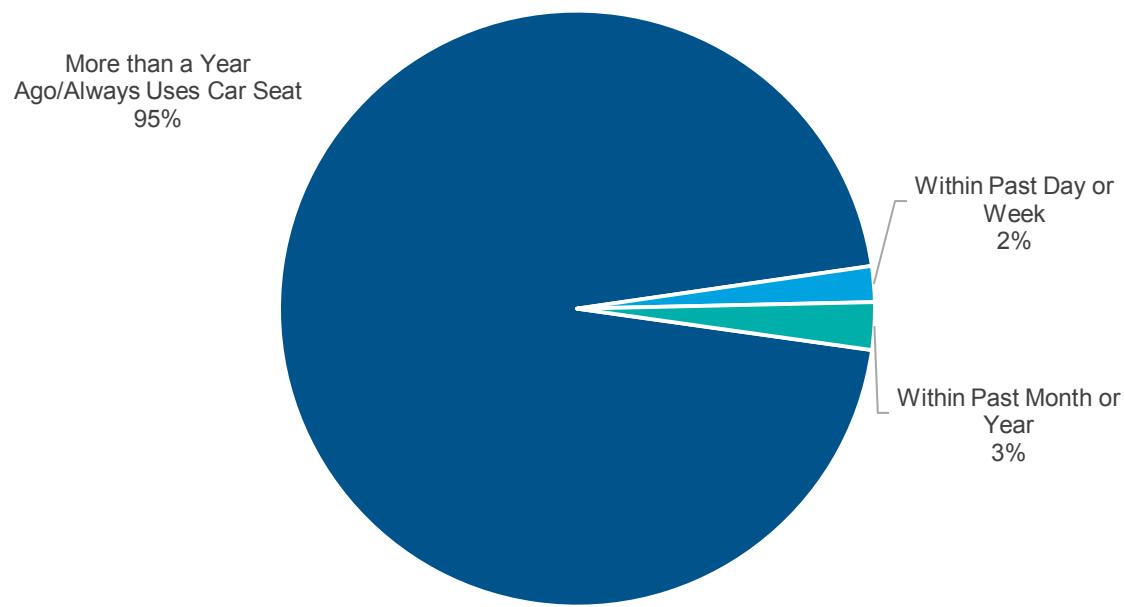
	Unweighted n	All of the Time	Most of the Time	Some of the Time	Rarely
Time since last time riding without a car seat					
Today	(18)	1%	6%	43%	33%
Within the past week	(25)	1%	17%	32%	20%
Within the past month	(29)	1%	44%	13%	16%
Within the past 12 months	(23)	2%	14%	0%	3%
A year or more ago	(14)	<1%	4%	0%	26%
Never, the child has always ridden in a car seat	(621)	95%	15%	13%	2%

Q21: When was the last time the [SELECTED CHILD] DID NOT ride in a car seat when you were driving?
Remember, car seats include booster seats.

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.
Unweighted n = 730, missing responses, n = 6.

Only a few of the caregivers who said the children always used car seats or booster seats when riding with them reported that the children had *not* ridden in one of these restraint systems at least once.

Figure 5. Last Time Child Did Not Ride in a Car Seat or Booster Seat Among “All of the Time” Car Seat or Booster Seat Users



Q20: When you are driving and the [SELECTED CHILD] rides in the vehicle with you, how often does (he/she) ride in a car seat? Car seats include booster seats.

Q21: When was the last time the [SELECTED CHILD] DID NOT ride in a car seat when you were driving? Remember, car seats include booster seats.

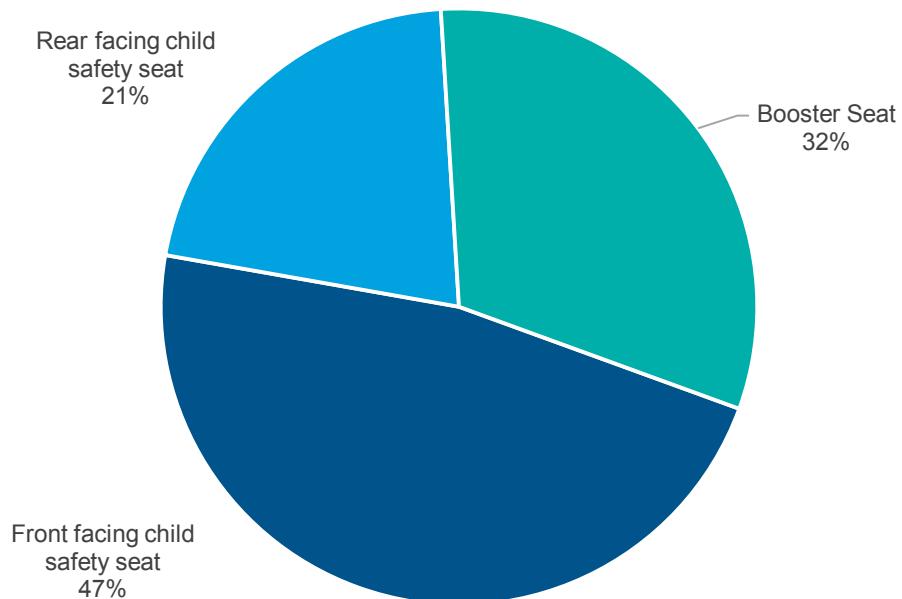
Base: Drives child in car seat all the time = 656.

Unweighted n = 655, missing responses, n = 1.

The questionnaire used three questions to determine car seat type. Respondents were first asked "When the [SELECTED CHILD] 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 [SELECTED CHILD] ride in a booster seat?" If the respondent indicated "yes" then the respondent was asked to provide information on the type of booster seat used.

Just less than half of caregivers responded "yes" to harness and front facing.

Figure 6. Type of Child Car Seat



Q22: When the [SELECTED CHILD] rides in the car seat, does the child wear harness straps that go over the shoulders and buckle between the legs?

Q23: Is the [SELECTED CHILD] 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?

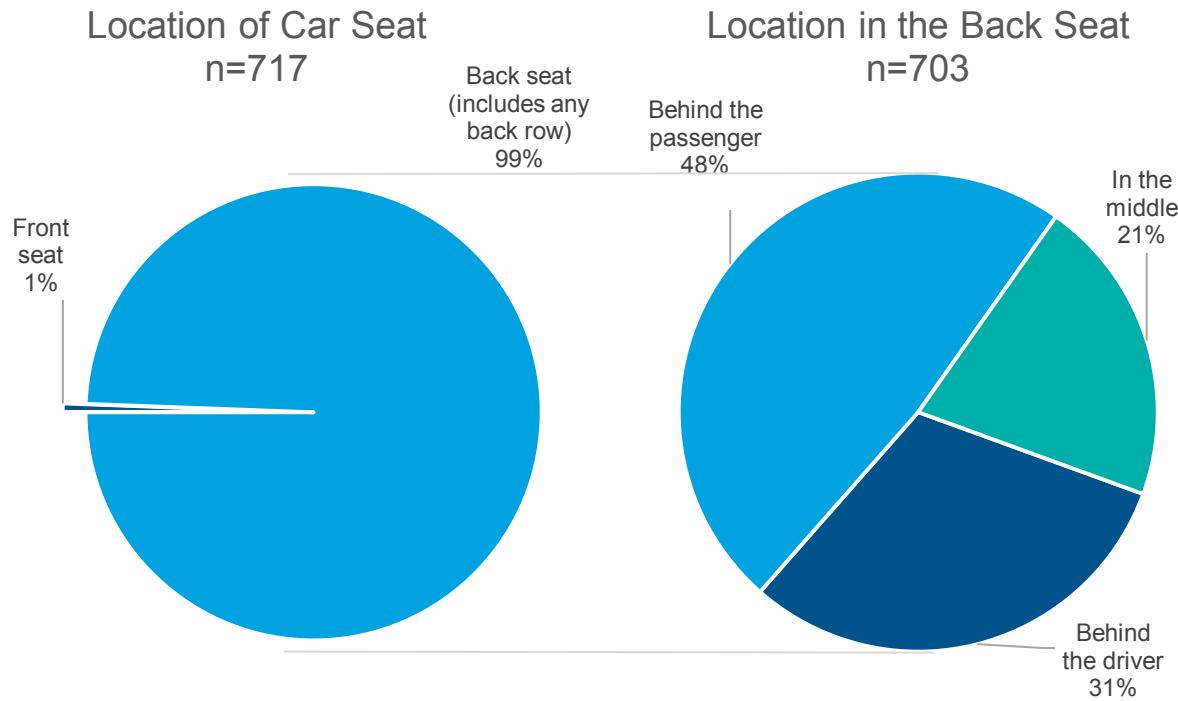
Q24: Does the [SELECTED CHILD] ride in a booster seat?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely) = 736.

Unweighted n = 692, missing responses, n = 44.

Nearly all caregivers reported that the children usually sat in the back when riding in car seats in vehicles they were driving, with half reporting that the children usually rode behind the front passenger seats. Caregivers were also asked if they believed the front or back seat to be the safest for a car seat. Nearly all considered the back seat the safest location while 1 percent said it depended on the type of car seat.

Figure 7. Placement of Child's Car Seat



Q27: When you are driving and the [SELECTED CHILD] rides in the car seat, is he/she usually in the front seat or the back seat?

Q27a: Is the car seat usually behind the driver, behind the passenger or in the middle of the back seat?

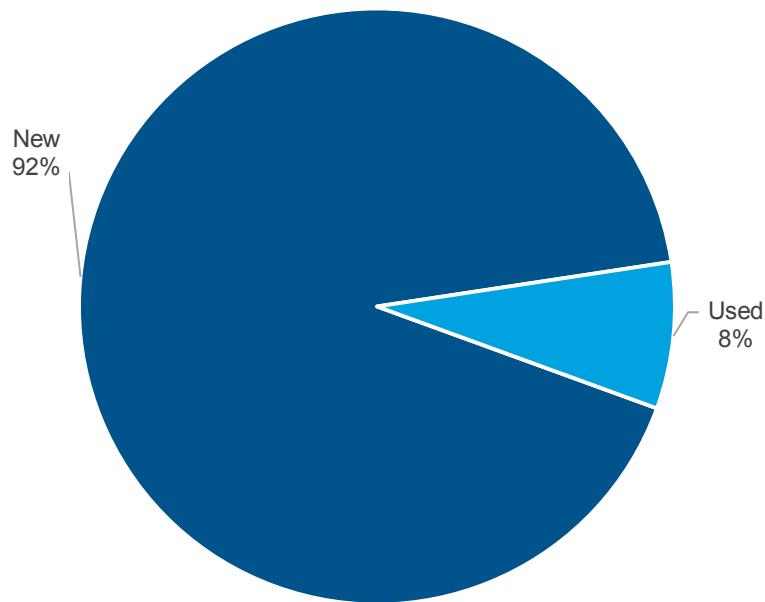
Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely) = 736.

Unweighted n stated above, missing responses Q27, n = 19; missing responses Q27a, n = 33.

Car Seat Acquisition and Registration

Most caregivers reported obtaining their car seats new.

Figure 8. Whether the Car Seat Was New or Used When Acquired



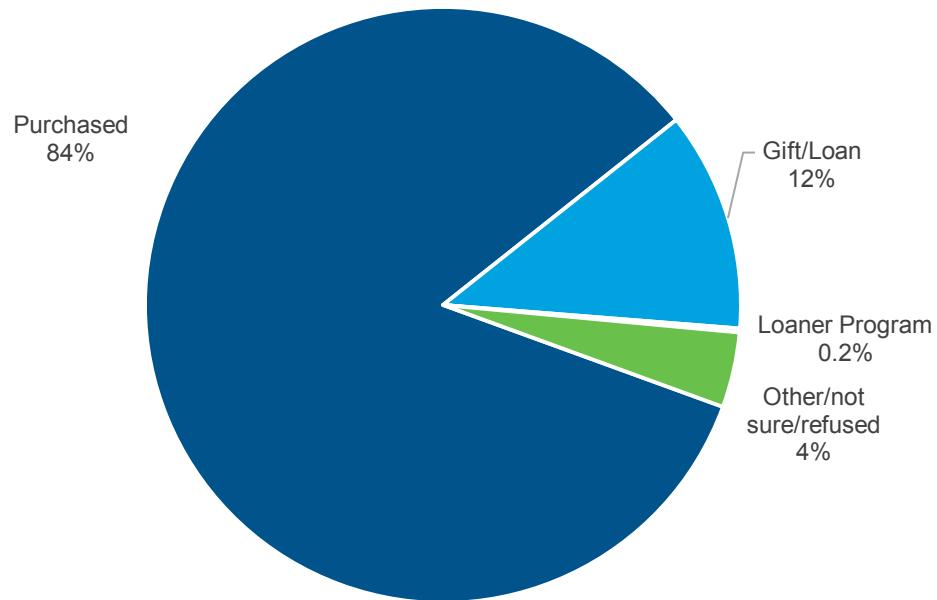
Q31: Now thinking again about the car seat the [SELECTED CHILD] usually rides in, did you get the car seat new or used? Remember, car seats include booster seats.

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely) = 736.

Unweighted n: 726, missing responses, n = 10.

Most caregivers reported purchasing their car seats, while others reported acquiring them as a gift or loaner from a relative or friend, or from a loaner program. Caregivers who said that they received the seats as gifts or loaners from relatives or friends were also asked if the seats were new or used. About two-thirds reported that the gifted/loaned seats from friends were new.

Figure 9. How Child's Car Seat Was Obtained



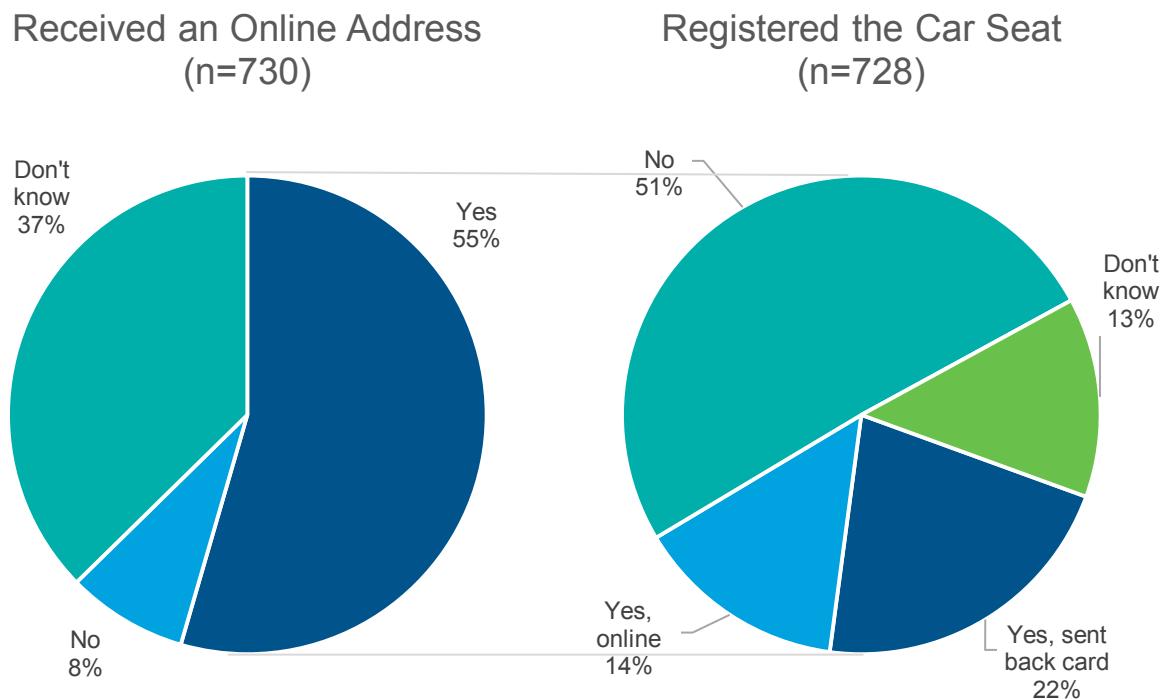
Q32: How did you get the car seat the [SELECTED CHILD] is using?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely) = 736.

Unweighted n = 728, missing responses, n = 8.

The survey asked caregivers who reported that they obtained their car seats new whether they came with registration cards. More than two-thirds said registration cards came with the seats, while a quarter didn't know whether cards had come with the seats and the remainder confirmed that they had not received registration cards. In addition, caregivers were asked whether the seats came with online addresses they could use to register the seats. Those respondents who answered in the affirmative were then asked whether they had registered their car seats online or by mail. Of those who had received an online address for registration, half did not register the seats, while a third registered the seats either online or by mailing the registration cards back.

Figure 10. Presence of an Online Address for Registering Car Seat and Whether the Car Seat Was Registered



Q34: Was there an online address that came with the car seat when you got it where you could register the car seat?

Q35: Did you register the car seat?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.

Unweighted n's listed above, missing responses Q34, n = 6; missing responses Q35, n = 8.

Caregivers were asked what might entice a caregiver to register a child's car seat. Respondents could write down any idea they had or select "I don't think anything would be effective." Their responses fell into several categories. A quarter of respondents reported that a financial incentive would entice a consumer to register a car seat.

Table 4. What Would Motivate a Caregiver to Register a Car Seat Online

Enticements for Registration	Percentage
Financial incentive/compensation or rebate	25%
Other	16%
Make clear why seat needs to be registered	10%
Allow registration at time of purchase	8%
Web-based solutions (QR codes, texting, email)	5%
Require registration	4%
Make registration more noticeable	4%
Sticker/tag	2%

Q36: When car seats are registered, it provides contact information that can be used to alert parents about a recall or safety issue related to the car seat. But many parents do not register their car seats even when registration cards or online addresses are provided. What, if anything, do you think would get parents to register their car seats?

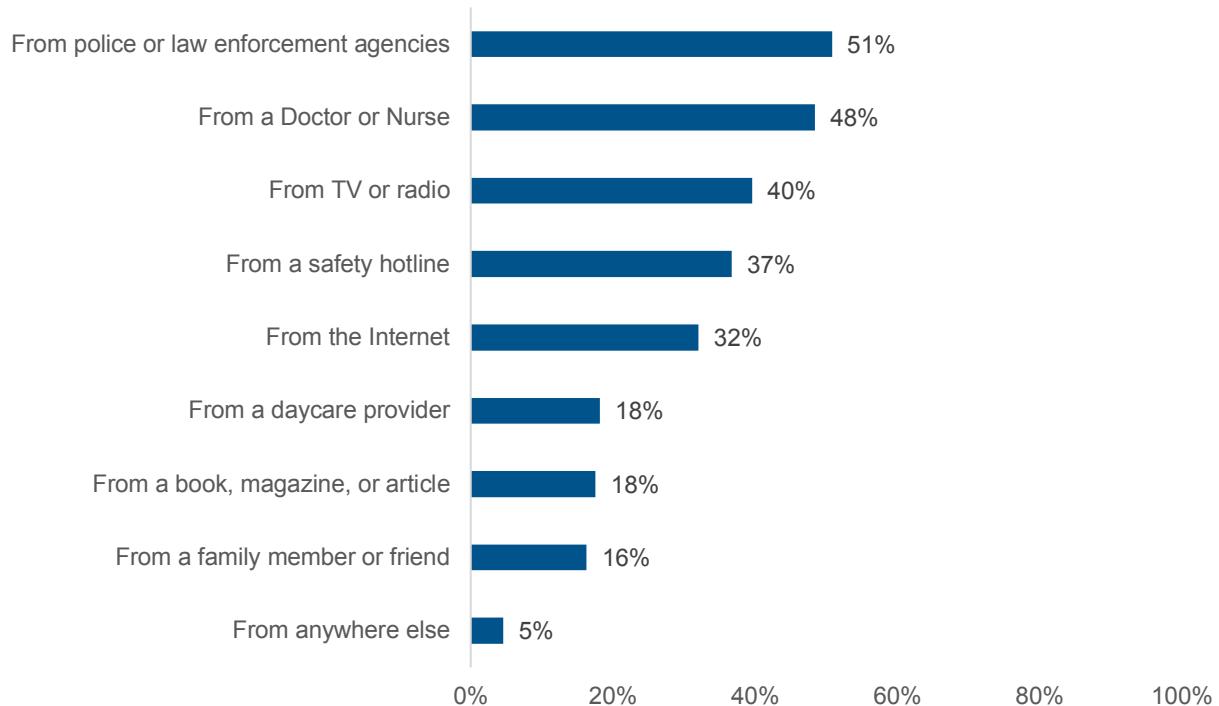
Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.

Unweighted n = 548, missing responses, n = 188.

Sources of Information About Car Seats

The survey asked where caregivers received information on car seats and provided nine potential information sources. The respondents were asked whether they had ever read or heard information or received advice about the need to use child car seats from each source. The respondents were then given the opportunity to volunteer additional sources that were not on this list.

Figure 11. Sources for Information on the Child Car Seats



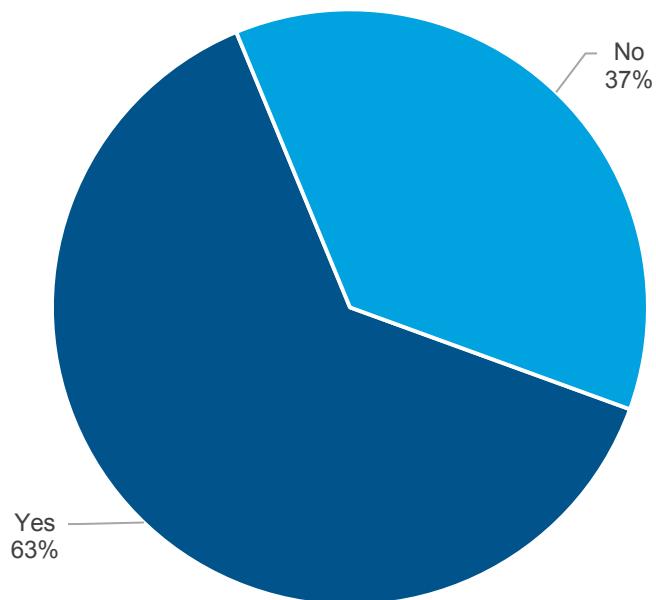
Q38: Did you ever read or hear of any information or receive any advice about the need to use car seats from any of the following sources?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.
Unweighted n = 727, missing responses, n = 9.

Respondents could select multiple sources where they had received information about car seats.

Caregivers were asked whether they had seen or heard the message, “Is your child in the right car seat?” Nearly two-thirds of respondents reported exposure to this message.

Figure 12. Has Seen or Heard the Message “Is Your Child in the Right Car Seat?”



Q39: Have you seen or heard the following message: “Is your child in the right car seat?”

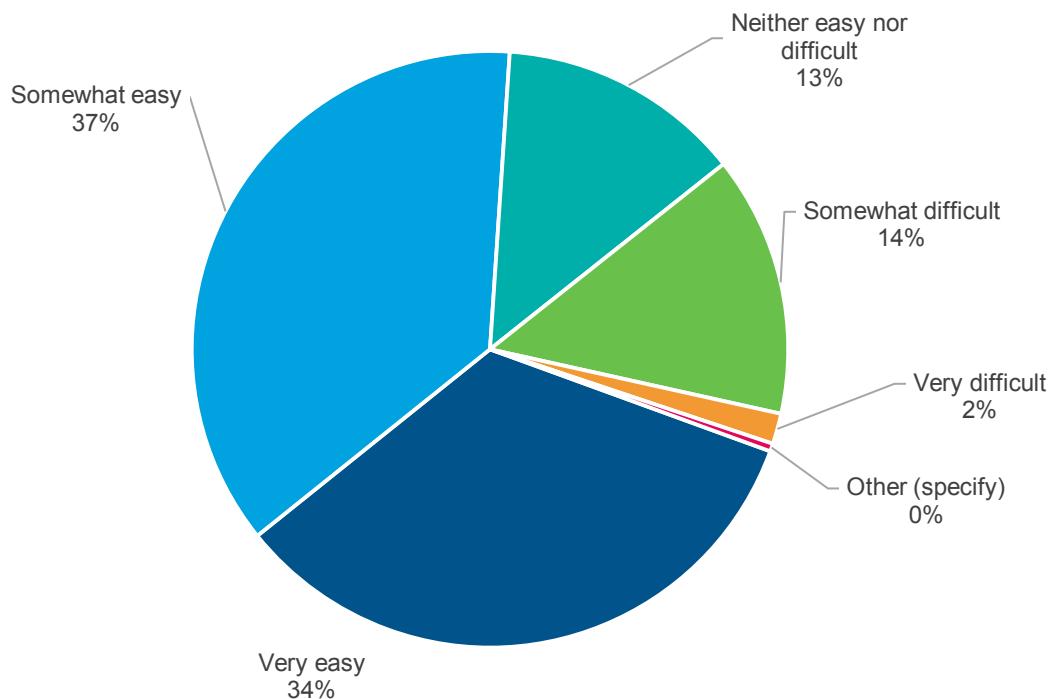
Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.

Unweighted n = 729, missing responses, n = 9.

Car Seat Installation

Caregivers were asked to rate how easy it was to attach their car seats to the vehicles they usually drive using a scale of 1 – 5 (very easy – very difficult). Most reported that it is either very or somewhat easy. An “other” option was provided for respondents to give more details if desired, and fewer than 0.5 percent of respondents used that option.

Figure 13. Ease of Attaching Car Seat to Vehicle



Q45: Overall, how easy or difficult is it for you to attach the car seat to the vehicle you usually drive?

Base: Child uses car seat, but not a booster seat, at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 515.

Unweighted n = 473, missing responses, n = 42.

Using the same scale that ranged from very easy to very difficult, caregivers were asked to rate the difficulty of specific tasks involved in attaching car seats to vehicles. If the task was not relevant to their car seats, they were directed to skip the question.

Table 5. What Is Difficult About Attaching Car Seat to Vehicle?

Task involved in attaching car seat	Unweighted n	Very Easy	2	3	4	Very Difficult
Routing the seat belt through the car seat	(291)	21%	38%	26%	12%	3%
Locking the seat belt	(297)	36%	35%	17%	10%	1%
Adjusting the seat belt to make sure it is tight enough	(297)	23%	29%	24%	19%	5%
Placing the car seat into position in the space available	(308)	29%	37%	24%	9%	2%
Attaching the car seat to the lower anchors (or LATCH)	(300)	19%	23%	28%	21%	9%
Connecting the tether strap on the back of the car seat to the vehicle	(272)	17%	30%	25%	22%	5%

Q44a – Q44f: On a 1 to 5 scale, where 1 is very easy and 5 is very difficult, how easy or difficult do you consider the following to be when you attach the car seat to your vehicle?

Base: Child uses car seat, but not a booster seat, at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 515.

Unweighted n's listed above, missing responses, n = 215 - 243. Rows will not add to exactly 100 percent due to rounding.

The survey asked caregivers if they had ever driven with children in the car seats and later found that the car seats were not securely attached. More than three-quarters responded “no.” Respondents who acknowledged driving with the children and later discovering that the car seats were not securely attached were asked why this happened. Respondents were provided with potential reasons and instructed to select all that applied to their situations.

Table 6. Reasons Why Car Seat Was Not Securely Attached

Reason	Percent
The car seat was moved between cars or within the same car	34%
The car seat was put in by someone else who did not attach it right	31%
I forgot/I wasn't paying attention	22%
It's hard to attach the car seat tightly enough	19%
The child in the seat loosened it	13%
Another child loosened the seat	12%
Other	6%

Q46a: Why did this happen?

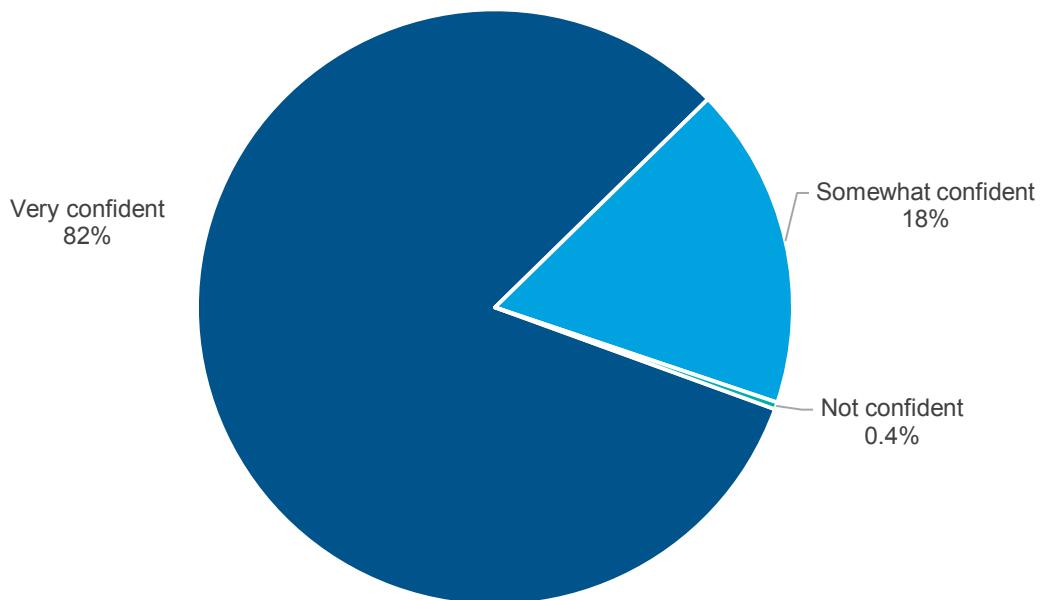
Base: Caregivers who have drove with a child in the car seat and later found that the car seat was not securely attached, n = 113.

Unweighted n = 113.

The survey also asked if a child had ever gotten himself or herself out of the car seat while the caregiver was driving. Sixteen percent reported that their children had escaped the car seats while in moving cars.

Nearly all caregivers reported that they were at least somewhat confident that the car seats were attached correctly.

Figure 14. Level of Confidence That Car Seat Was Attached Correctly



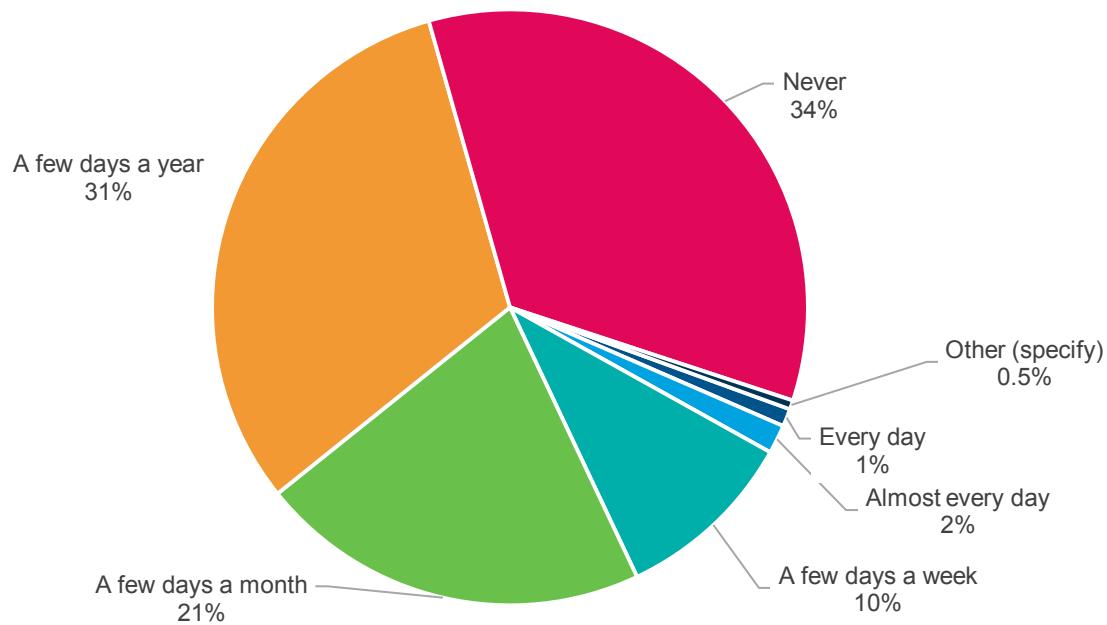
Q47: When you attach the car seat to your vehicle, how confident do you usually feel that the car seat is correctly attached?

Base: Child uses car seat, but not a booster seat, at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 515.

Unweighted n = 482, missing responses, n = 33.

Most caregivers reported moving the seats to different vehicles a few days a year or less although some reported moving them more than once a week.

Figure 15. Frequency of Moving Car Seat Between Vehicles

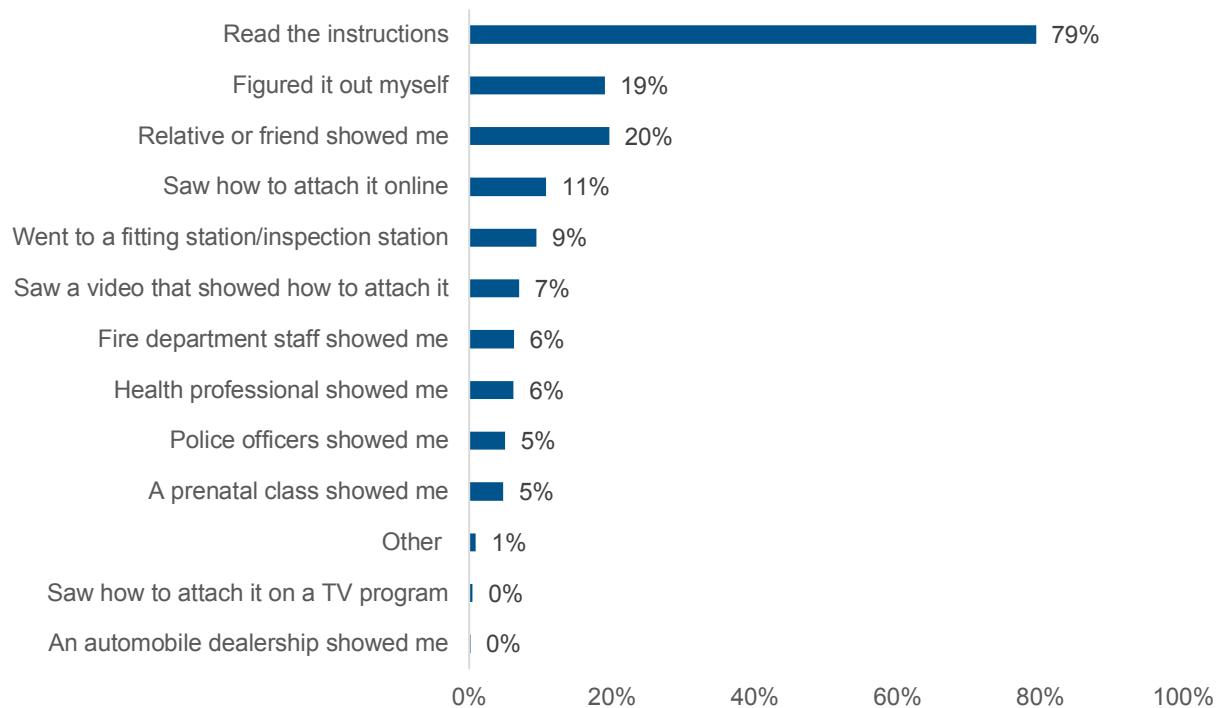


Q52: How often do you move the car seat from one motor vehicle to another motor vehicle?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.
Unweighted n = 730.

Caregivers were asked how they learned to attach the car seats to the vehicles. They were given 13 options to select from and asked to select all that applied and/or specify a method not presented in the response options. Most reported learning to attach car seats to vehicles by reading the instructions.

Figure 16. How Learned to Attach Car Seat to Vehicle



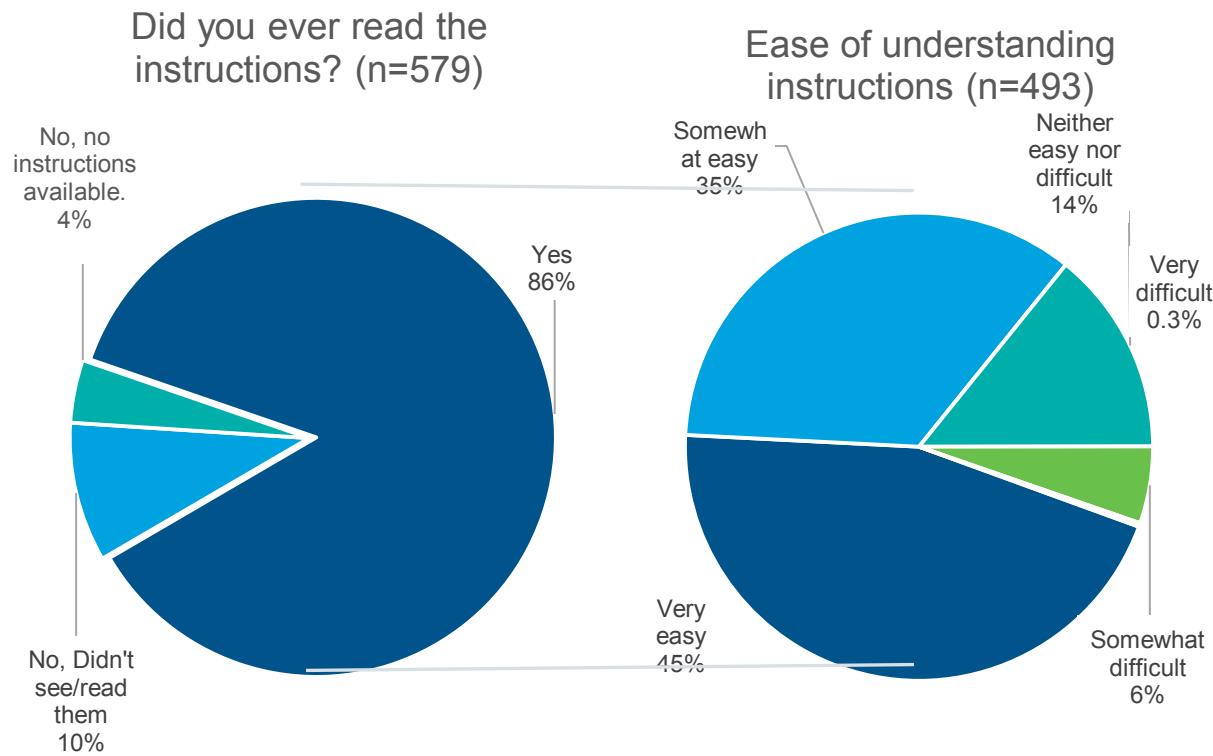
Q40: How did you learn to attach the car seat to the vehicle?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.

Unweighted n = 484, missing responses, n = 252.

Caregivers generally reported that they had read instructions for the car seats, and most found the instructions at least somewhat easy to understand. A small proportion reported that the instructions were available, but they did not read them.

Figure 17. Ease of Understanding the Car Seat Instructions



Q41: Did you ever read the instructions for the car seat or see the instructions in a video or online?

Q43: How easy or difficult were the instructions to understand?

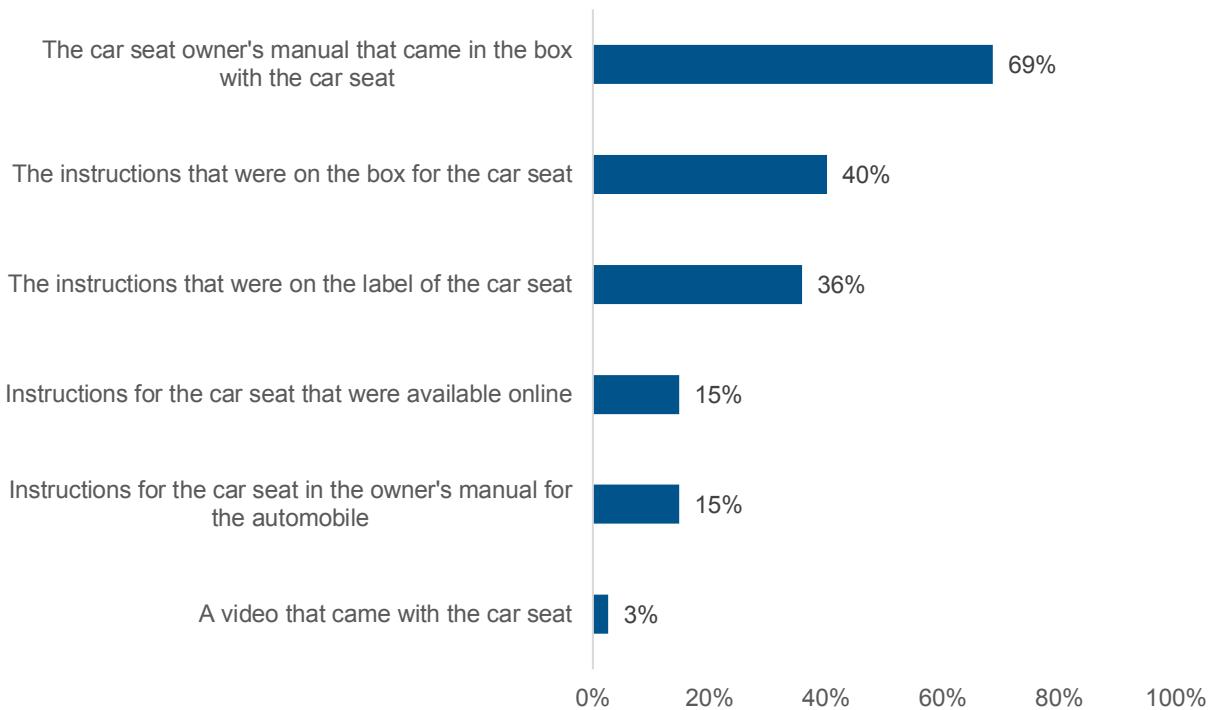
Base Q41: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.

Base Q43: Read the child car seat instructions, n = 493.

Unweighted n's listed above, missing responses Q41, n = 157; missing responses Q43, n = 0.

Caregivers were also asked which instructions they had read. The caregivers could select more than one of the six listed sources, thus the sum of the percentages for the different instruction material exceeds 100. Sixty-nine percent reported reading the car seats' owner manuals that came with the car seats.

Figure 18. Source of Car Seat Instructions Read or Watched, by Caregivers



Q42: Which instructions did you read or watch?

Base: Read the child car seat instructions, n = 493.

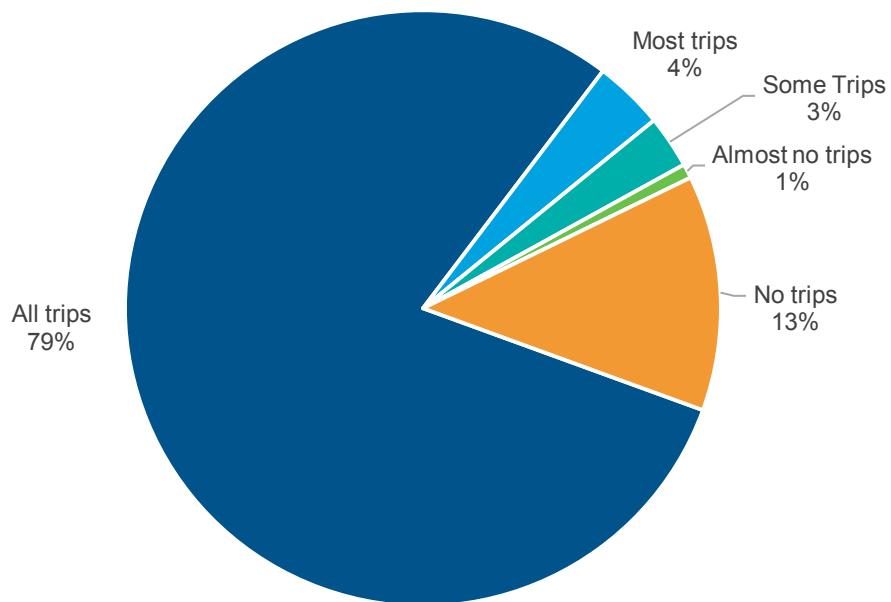
Unweighted n = 490, missing responses, n = 3.

Lower Anchors and Tethers for Children

Caregivers were asked about the presence of lower anchors (the LATCH system) in the vehicles they normally drive. Most said that their vehicles had the lower anchors required to securely attach car seats to vehicles.

Caregivers reporting the presence of lower anchors, but not use of booster seats, were asked about the rate at which their car seats were attached to the lower anchors. Seventy-nine percent reported that the car seats were attached to the lower anchors on all trips. Thirteen percent reported that the car seats were not attached to the lower anchor system during any trips.

Figure 19. Frequency That Car Seat Is Attached to Lower Anchors



Q64: When you are driving with the [SELECTED CHILD], and the child is riding in a car seat, how often is the car seat attached to the lower anchors? Is it...?

Base: Vehicle contains lower anchors and child not in a booster seat, n = 382.

Unweighted n = 366, missing responses, n = 16.

The same respondents were asked whether they had had any difficulties attaching the car seats to the lower anchors. Asked to select all that apply, 73 percent reported that they had no difficulty completing that task, and 27 percent reported that they did experience difficulties.

Respondents who reported having difficulties attaching the car seat to the lower anchors were asked to recall the specific difficulties they experienced. The responses were grouped into the reasons found in Table 7. Thirty-one percent reported difficulty with clipping/unclipping the hooks to the anchors, and 30 percent reported difficulty with accessing the anchors.

Table 7. Difficulties When Attaching Car Seat to Lower Anchors

Reason	Percent
Difficult to clip/unclip hooks to anchors	31%
Difficult to access	30%
Straps too short	17%
Difficult to find	15%
Difficult to adjust strap/make strap tight	12%
N/A	10%

Q65a: What difficulties have you had attaching the car seat to the lower anchors?

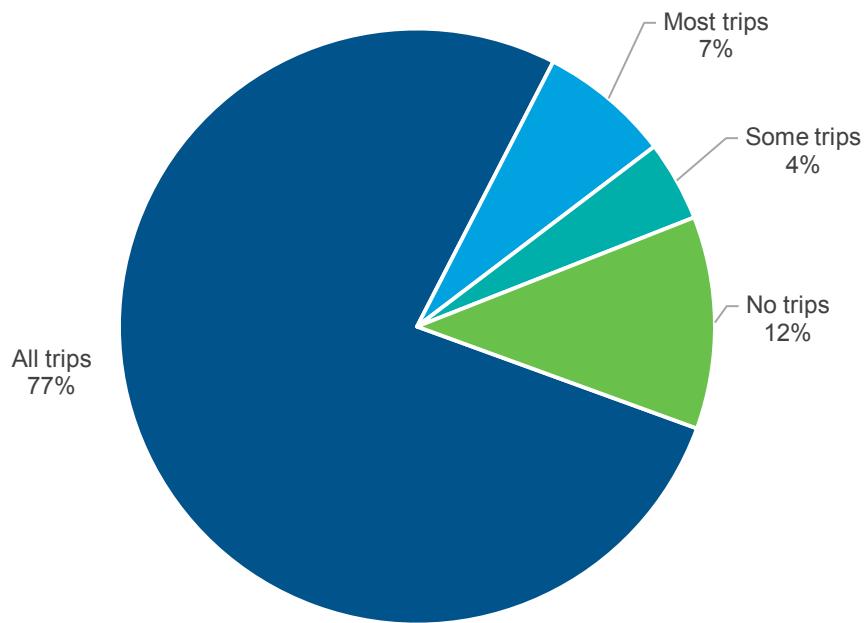
Base: Caregivers who have had difficulties fastening the car seat into the lower anchors, n = 104.

Unweighted n = 101, missing responses, n = 3.

Seventy-eight percent of caregivers surveyed with front-facing child car seats reported that they had top tether straps on the backs of the car seats, near the top. Fourteen percent reported no top tether straps, while 8 percent did not know.

Of those who reported top tethers, 77 percent reported driving with the top tether straps attached to the vehicles on all trips. Twelve percent of those with tether straps reported not using them on any trips.

Figure 20. Frequency of Car Seat Attached via the Top Tether to the Vehicle



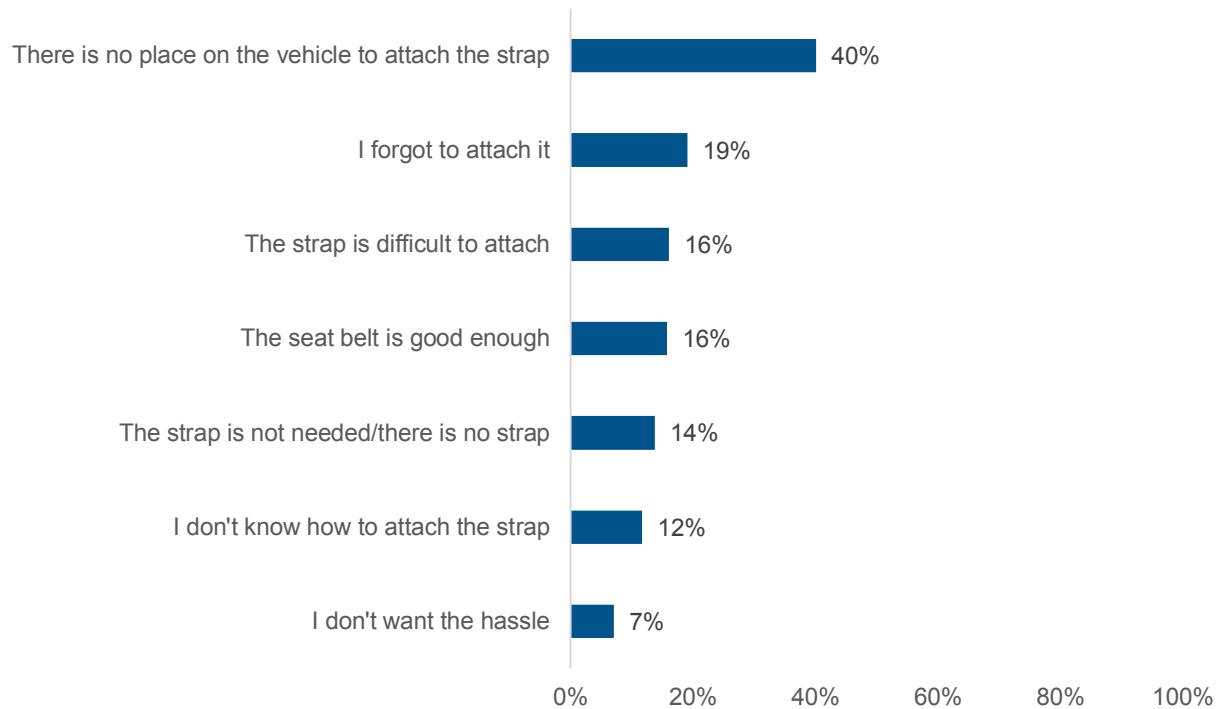
Q49: When the [SELECTED CHILD] rides in the car seat, how often is the tether strap attached to the motor vehicle? Would you say that the tether strap is attached to the motor vehicle on all trips, most trips, some trips, or no trips?

Base: Child rides in a front facing seat that's not a booster and the caregiver reported a tether, n = 271.

Unweighted n = 250, missing responses, n = 21.

Respondents who reported not using the top tether straps were asked to select one or more reasons they were not attached. Forty percent reported the reason was because there was no place in the vehicles to attach the straps. Nineteen percent reported that they did not use the top tether straps because they forgot to attach the straps to the vehicles.

Figure 21. Reasons Top Tether Strap Not Attached*



Q50: 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: Child rides in a front facing seat that's not a booster and has a tether but it is not used all the time,

Unweighted n = 59, missing responses, n = 0.

*Additional choices of “other” and “don’t know” received no endorsement from respondents and are thus not listed here.

Car Seat Inspection Stations

Caregivers were asked if they ever went to inspection stations to have their car seats installation checked. Twenty-three percent reported that they had gone to inspection stations, while 77 percent reported no experience visiting inspection stations.

Caregivers who each reported visiting an inspection station were then asked what type of organization or company sponsored the car seat check. Forty-one percent reported that the stations were sponsored by fire or rescue units, and 32 percent reported police departments.

Table 8. Sponsor of the Inspection Station Visited

Sponsor	Percent
Fire or rescue units	41%
Police department	32%
Hospital, medical center, or health center	16%
State or county agency	12%
The Safe Kids organization	4%
Car dealership	3%
Retail store	3%
Church	2%
Don't Know/Not Sure	2%
Other	2%

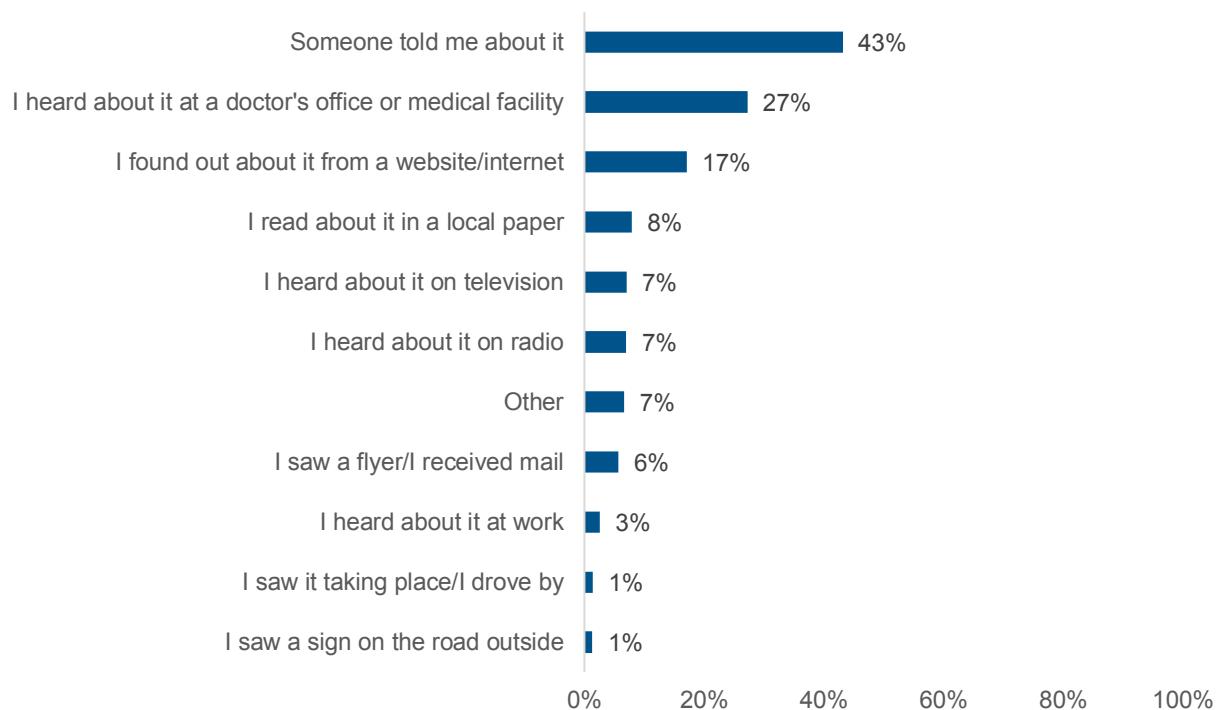
Q54: What type of organization or company sponsored the car seat check?

Base: Went to an inspection station, n = 193.

Unweighted n = 193.

Caregivers were asked how they found out about the inspection stations. Forty-three percent reported word-of-mouth, followed by 27 percent doctors' offices or hospitals, and 17 percent internet websites. Other sources were selected by less than 10 percent of the respondents.

Figure 22. How Heard About Inspection Station



Q55: How did you find out about the car seat check you went to?

Base: Went to an inspection station, n = 193.

Unweighted n = 191, missing responses, n = 2.

Respondents could check all that applied.

Caregivers were asked if the people who were checking their car seats at the inspection station found anything wrong with how the car seats were installed to the vehicles or with how the children were secured to the car seats. Eighty-one percent reported that they found no problems, while 19 percent reported that the inspection station technicians found problems. The caregivers were also asked if the technicians suggested that they do anything differently in how they attached the seats or buckled in their children. Seventy-two percent said they did not make any suggestions, while 28 percent said they did suggest changes. Respondents were asked if the technicians suggested different car seats for their children. Ninety-seven percent did not receive the suggestion of a new car seat, while 3 percent did.

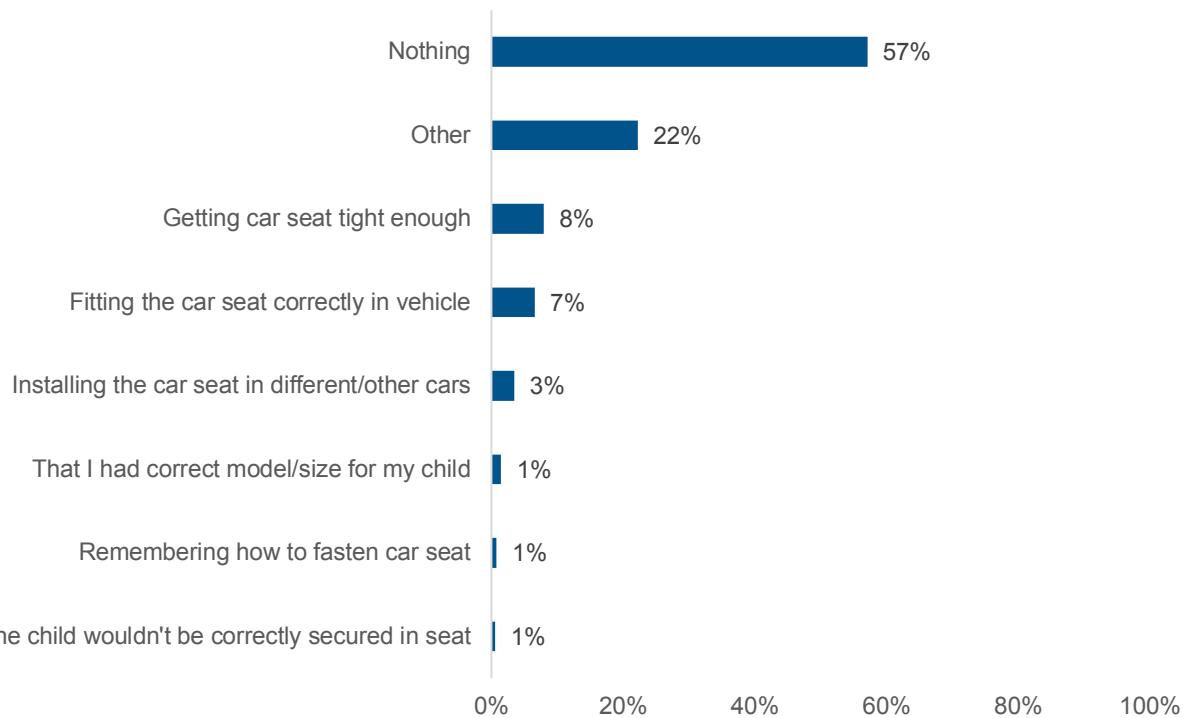
The child passenger safety curriculum for technicians at inspection stations calls for the parent or other supervising caregiver to be the last person to adjust the child car seat before leaving the inspection station, rather than the technician. Fifty-five percent of respondents reported that they were the last ones to adjust the seats, while 41 percent indicated that it was the technicians. In addition, 78 percent of respondents affirmed that they had been given a chance at the inspection

station to attach the seats and buckle in their children. Twenty percent reported that they were not given a chance.

Sixty-nine percent reported full confidence that they could attach the car seats when they left the car seat inspections. Eighteen percent reported learning to do a better job attaching the seats and buckling in the children, but still being unsure that they could do everything correctly themselves. Thirteen percent reported they had not learned anything they did not already know.

Respondents who reported attending inspection stations were asked what they felt most unsure of when they left the stations. Categories were created from the open-ended responses. Fifty-seven percent reported “nothing,” and 22 percent reported “other.” Eight percent reported that they felt most unsure about “getting the car seat fit tight enough.”

Figure 23. What Respondent Felt Most Unsure of After Car Seat Inspection



Q62: When you left, what did you feel most unsure about?

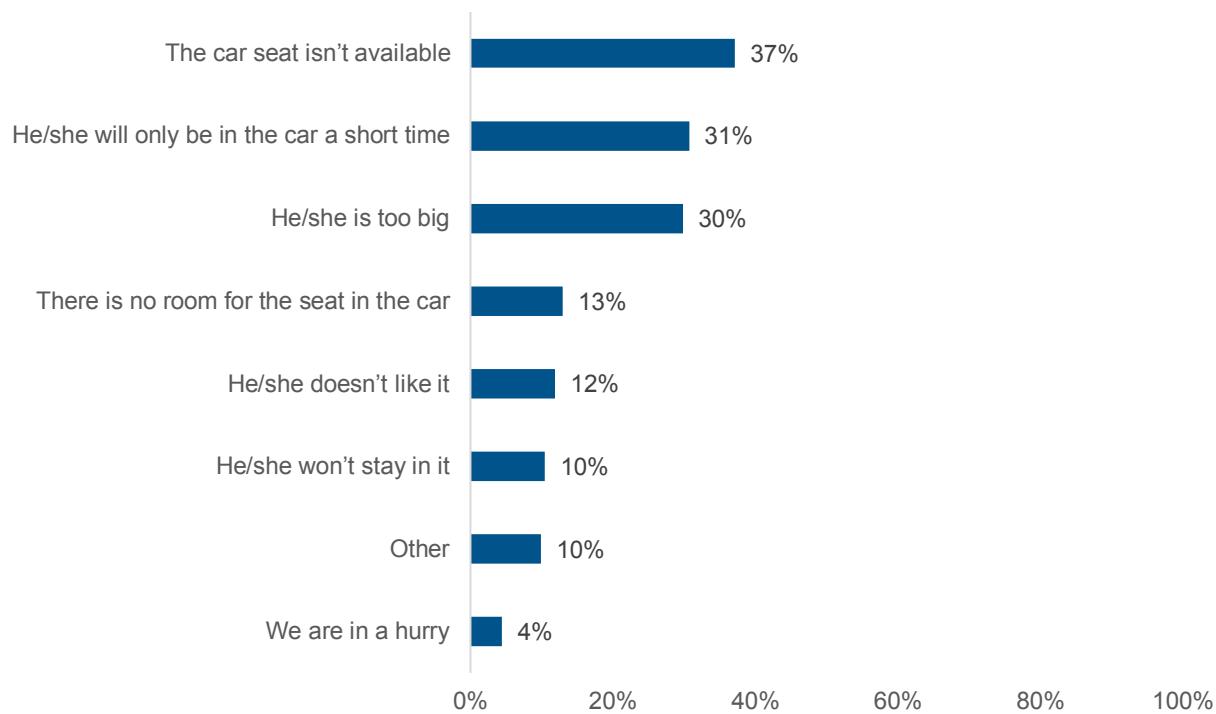
Base: Went to an inspection station, n = 193.

Unweighted n = 164, missing responses, n = 29.

Occasional Users of Car Seats and Booster Seats

Caregivers who said that the children rode in car seats or booster seats occasionally, but not all the time, were asked to select all reasons for the part-time use out of a list of seven options and/or specify another reason not listed. More than a third selected “the car seat isn’t available,” and just less than a third selected “he/she will only be in the car a short time,” and/or “he/she is too big.”

Figure 24. Reasons Child Does Not Ride in Car Seat or Booster Seat – Part-Time Users



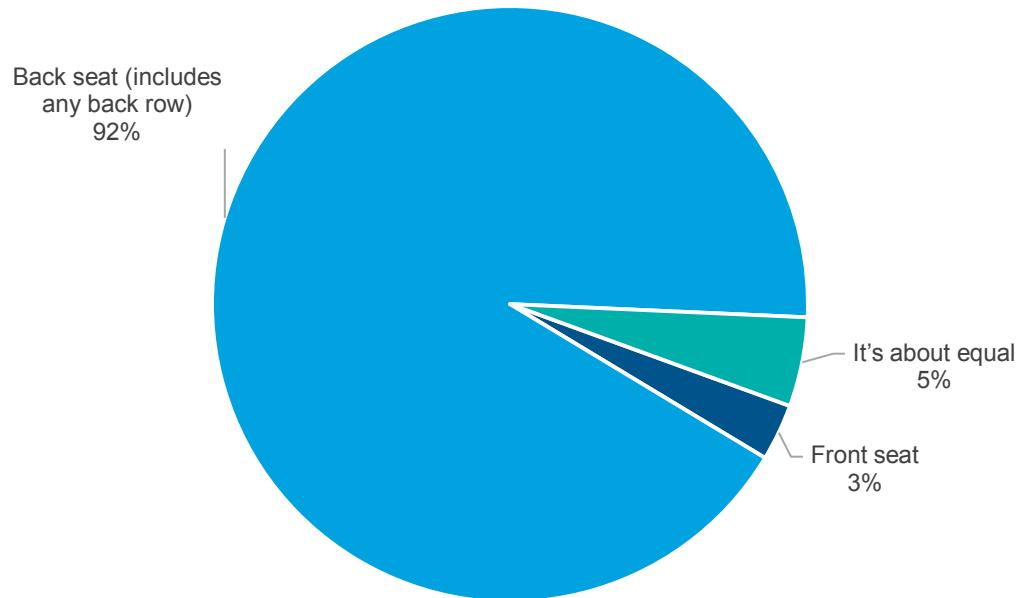
Q66: Please indicate which of the following statements are true. Again, car seats include booster seats. When my [SELECTED CHILD] doesn't ride in a car seat, it is sometimes because...

Base: Child uses car seat, but not all of the time (most of the time, some of the time, or rarely), n = 100.

Unweighted n = 93, missing responses, n = 7.

Nearly all caregivers reported that children sat in the back seats when not in a car seat.

Figure 25. Does Child Usually Sit in Front or Back Seat When Not Riding in Car Seat?



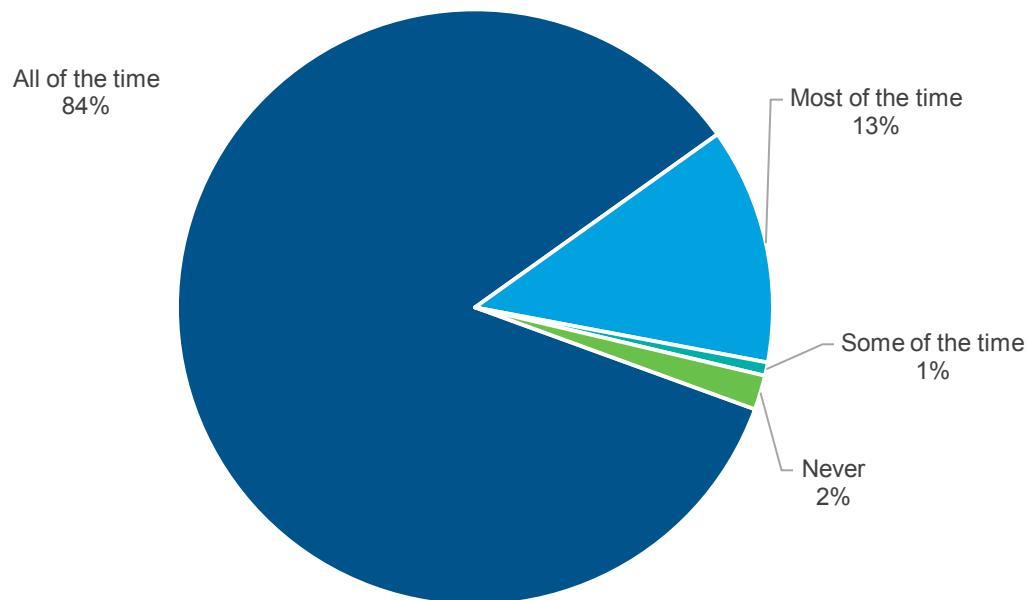
Q67: When the [SELECTED CHILD] doesn't ride in the car seat when riding with you, does (he/she) usually sit in the front seat or in the back seat?

Base: Child uses car seat, but not all of the time (most of the time, some of the time, or rarely), n = 100.

Unweighted n = 92, missing responses, n = 8.

Of those who reported occasional use of car seats, most reported that the children used seat belts “all of the time” or “most of the time” when not in their car seats.

Figure 26. Frequency of Seat Belt Use When Child Not in Car Seat



Q68: When the [SELECTED CHILD] doesn't ride in the car seat when riding with you, how often is (he/she) buckled in a seat belt?

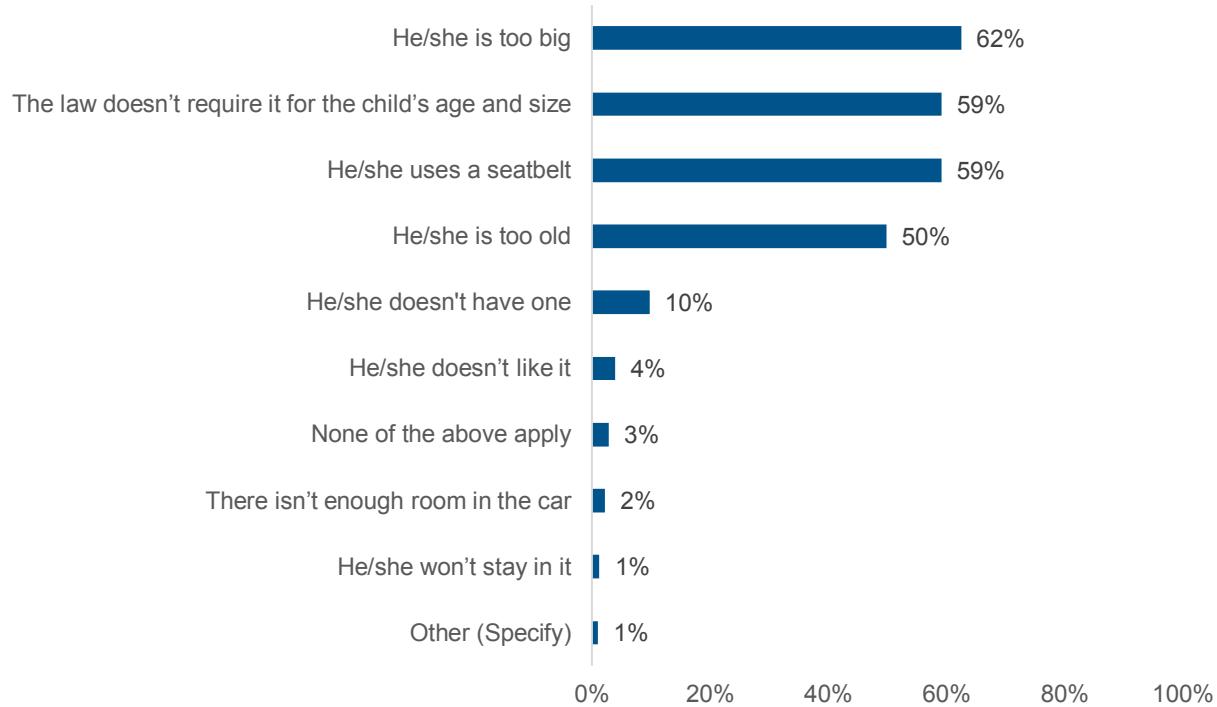
Base: Child uses car seat, but not all of the time (most of the time, some of the time, or rarely), n = 100.

Unweighted n = 91, missing responses, n = 9.

Non-Users of Car Seats and Booster Seats

Caregivers who reported that their children never rode in car seats or booster seats were asked to select all reasons for non-use out of a list of nine options and/or report an additional reason not listed. Nearly two-thirds reported “he/she is too big,” and half or more reported “the law doesn’t require it for the child’s age and size,” “he/she uses a seat belt,” and/or “he/she is too old.” Some of these children may have been of an age and size where they could safely use the seat belts.

Figure 27. Reasons Child Never Rides in Car Seat or Booster Seat



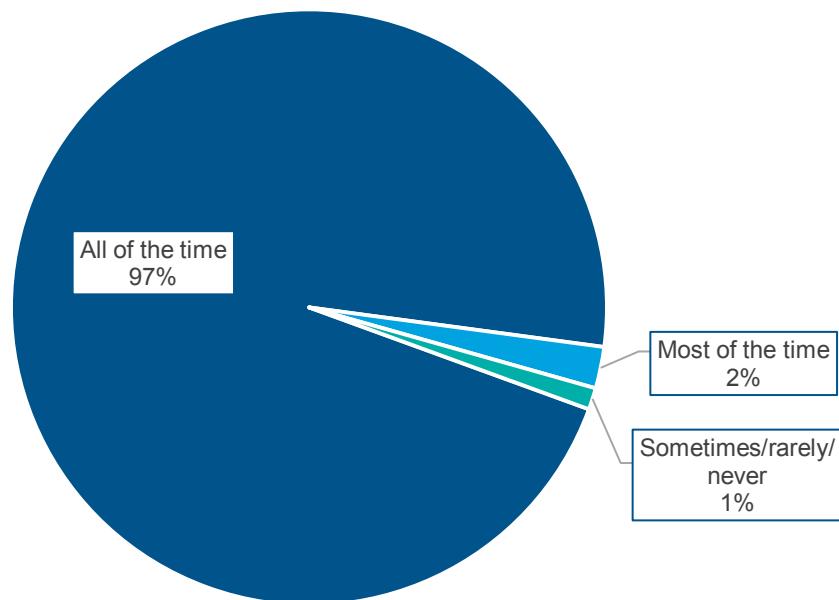
Q71: Please indicate which of the following statements are reasons why the [SELECTED CHILD] does not ride in a car seat. Again, car seats include booster seats.

Base: Child never uses a car seat, n = 329.

Unweighted n = 323, missing responses, n = 6.

Of those who reported never using car seats or booster seats, nearly all reported securing their children in seat belts.

Figure 28. Frequency Child Uses Seat Belt — Children Who Never Use Car Seats or Booster Seats



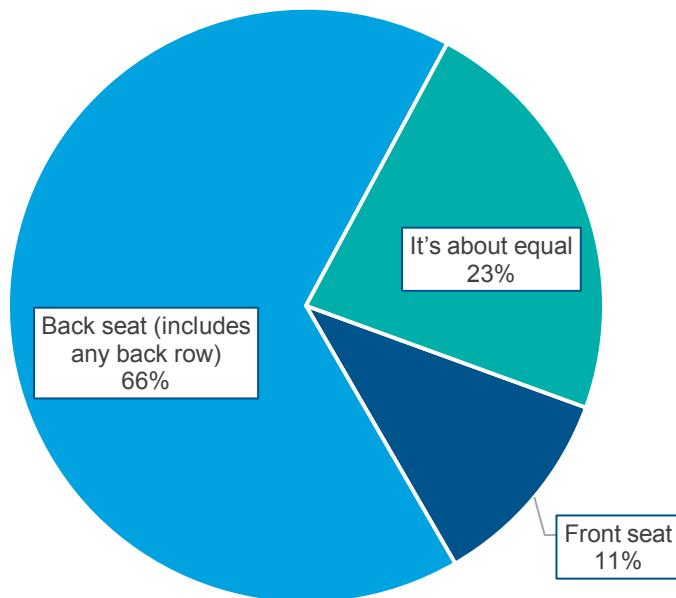
Q73: How often does he/she use a seat belt?

Base: Child never uses a car seat, n = 329.

Unweighted n = 322, missing responses, n = 7.

Of those who reported never using car seats or booster seats, two-thirds reported that the selected children usually sat in the back seats.

Figure 29. Where a Child Usually Sits in a Vehicle — Children Who Never Use Car Seats or Booster Seats



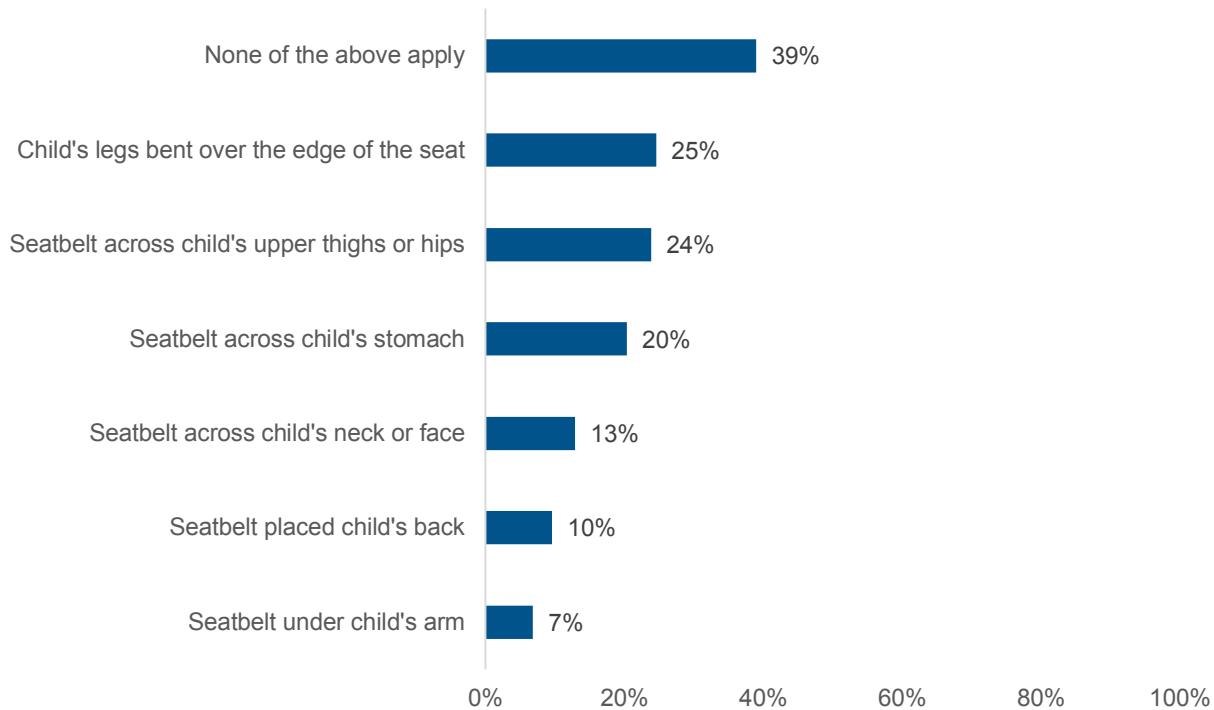
Q72: Where does the [SELECTED CHILD] usually sit in the vehicle when you are driving -- the front seat or the back seat?

Base: Child never uses a car seat, n = 329.

Unweighted n = 322, missing responses, n = 7.

Caregivers who reported never using car seats or booster seats were asked about seat belt fit for the children. Respondents were asked to select all that apply from a list of seven response options. More than a third selected “none of the above apply.”

Figure 30. How Seat Belt Fits the Child — Children Who Never Use Car Seats or Booster Seats



Q70: Please indicate if any of the following things usually happen when the [SELECTED CHILD] wears a seat belt while riding in a motor vehicle. On most trips...

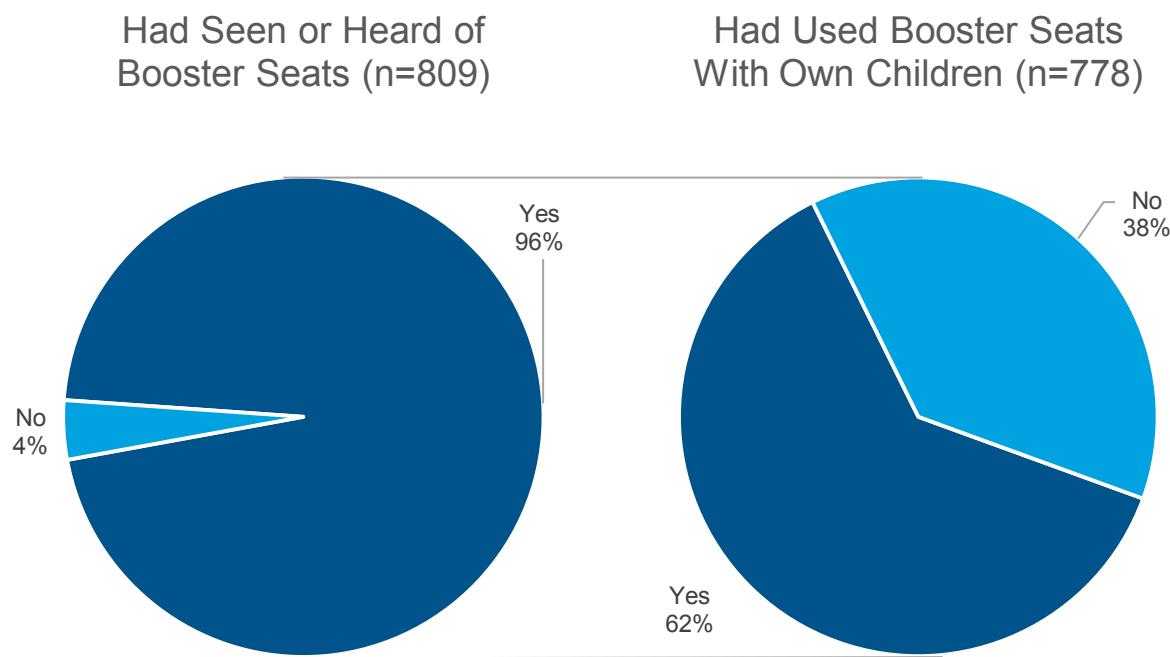
Base: Child never uses a car seat, n = 329.

Unweighted n = 316, missing responses, n = 13.

Booster Seats

Nearly all caregivers were aware of booster seats. Among these, nearly two-thirds reported that they had used them with their children. This survey question asked about booster seat use among all children each respondent drives, not just the child with the most recent birthday (who was the target child for many other questions in this survey).

Figure 31. Knowledge and Use of Booster Seats



Q76: Before today, had you ever seen or heard of a seat made for children riding in motor vehicles called a booster seat?

Q77: Have you ever used a booster seat when driving with your child or children?

Base Q76: Drivers of related children or children in the same household, n = 1,086.

Base Q77: Caregivers aware of booster seats, n = 784.

Unweighted n's listed above, missing responses Q76, n = 277; missing responses Q77, n = 6.

Respondents who reported having heard of booster seats were asked to recall the most important reason for using booster seats. The most frequent responses were “to make the child safer,” and “to make the seat belt fit properly.”

Table 9. Most Important Reason for Booster Seat

Reason	Percent
To make the child safer	47%
To make the seat belt fit properly	30%
Other	14%
When child is too big for safety seat but too small for seat belt	3%
It's the law	3%
NA/Not sure/refused	2%
To allow the child to see out of the window better	1%
Keeps the child still	1%
Better than just the seat belt	0.5%
Safety/health professionals recommend it	*
Don't want a ticket	*

Q80: What would you say is the MOST IMPORTANT reason for having a child use a booster seat?

Base: Caregivers who said they were aware of booster seats, n = 784.

Unweighted n = 708, missing responses, n = 76.

* - Less than 0.5 percent.

Caregivers were asked to select all factors that could influence a decision to move their children from car seats to seat belts from a list of eight response options and/or specify an additional factor not listed. More than three-fourths reported “the law.”

Table 10. How Decide That Child Can Stop Using Car Seat and Instead Ride in Seat Belt Only

Reason	Percent
The law	78 percent
Child's weight	36%
Child's height	35%
The fit of the seat belt	35%
Child's age	29%
The instructions that came with the seat	28%
Child's behavior	10%
Child's preference	3%
Other (Specify)	2%

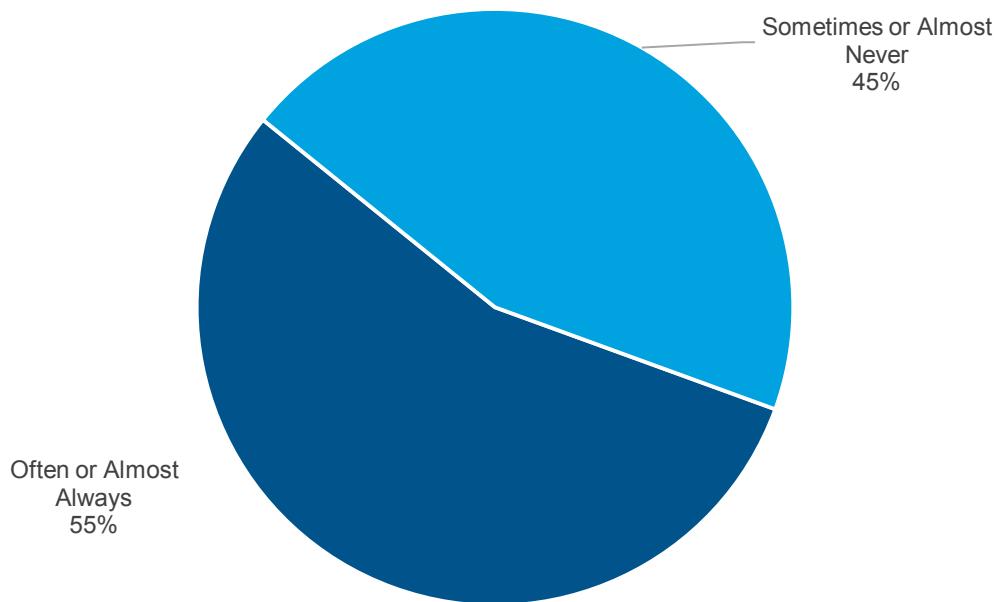
Q81: Suppose you were deciding whether a child is ready to stop using a car seat and instead can ride in a seat belt only. What would you base your decision on?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.
Unweighted n = 729, missing responses, n = 7.

Attitudes Toward Enforcement of Child Restraint Laws

Respondents were asked how often they thought drivers would be ticketed when children are seen riding in the cars without seat belts or car seats. Most respondents reported that driver would be ticketed almost always or often, but nearly half reported that this would happen sometimes or almost never.

Figure 32. Frequency With Which Police Ticket the Driver for a Child Not in a Car Seat



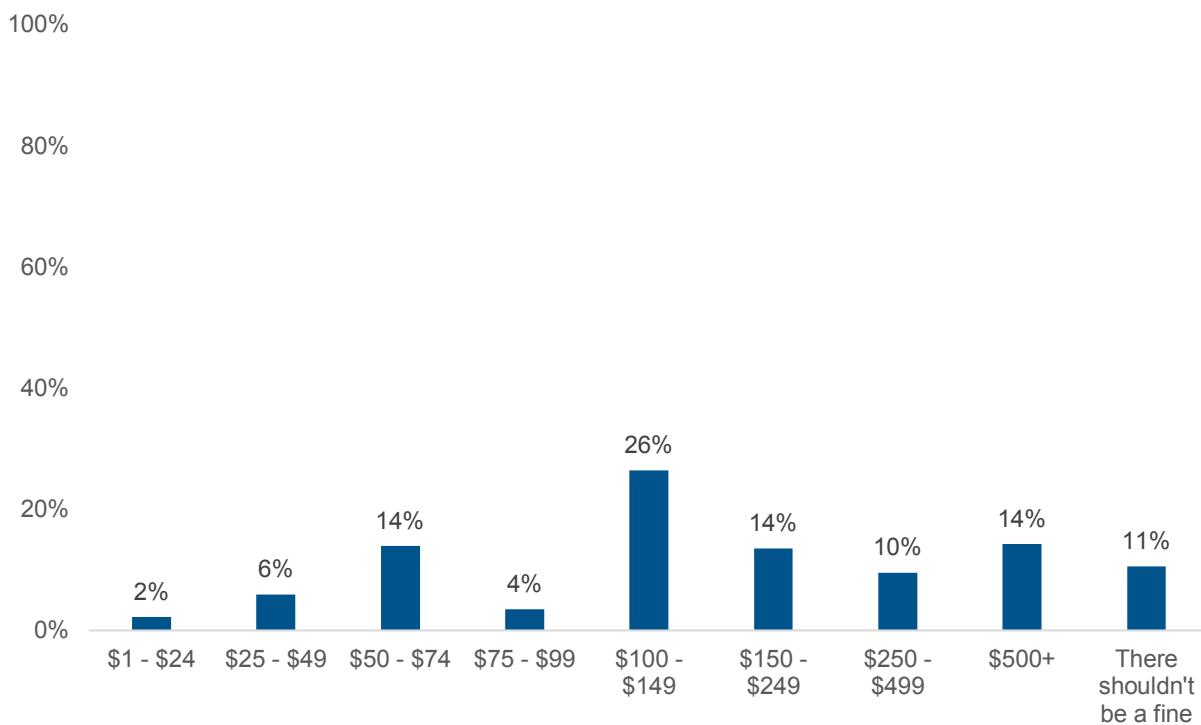
Q83: When police in your community see a child riding in a motor vehicle that is not in a car seat or using a seat belt, how often do you think the police will ticket the driver?

Base: Total population 18+, n = 5,410.

Unweighted n = 5,256, missing responses, n = 154.

Respondents were asked what they thought the minimum fine should be for violation of the car seat laws. Most favored a fine of \$100 or more.

Figure 33. Preferred Fine for Violation of Car Seat Laws



Q84: What do you think the fine should be for violation of car seat laws?

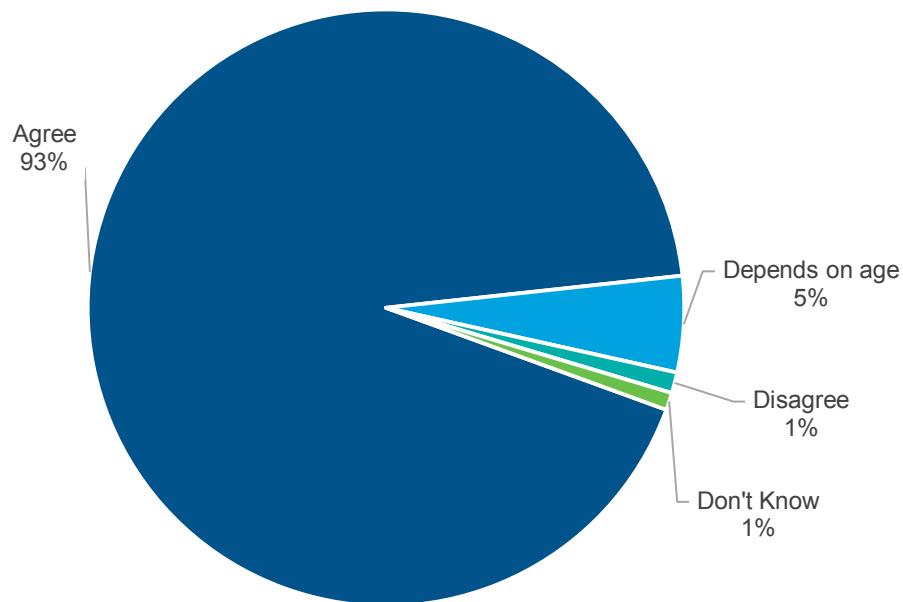
Base: Total population 18+, n = 5,410.

Unweighted n = 5,162, missing responses, n = 248.

Open-ended responses were collapsed into the categories seen here for reporting purposes.

Nearly all respondents felt that children should be required to wear seat belts when they outgrow car seats, although a few responded that this depended on the children's age.

Figure 34. Children Should Be Required to Wear Seat Belts When They Have Outgrown Car Seats



Q85: What about when children outgrow a car seat? Do you agree or disagree that they should be required by law to wear seat belts when riding in a vehicle?

Base: Total population 18+, n = 5,410.

Unweighted n = 5,303, missing responses, n = 107.

Respondents who responded via the Web were given the option to answer "Don't Know" to this question.

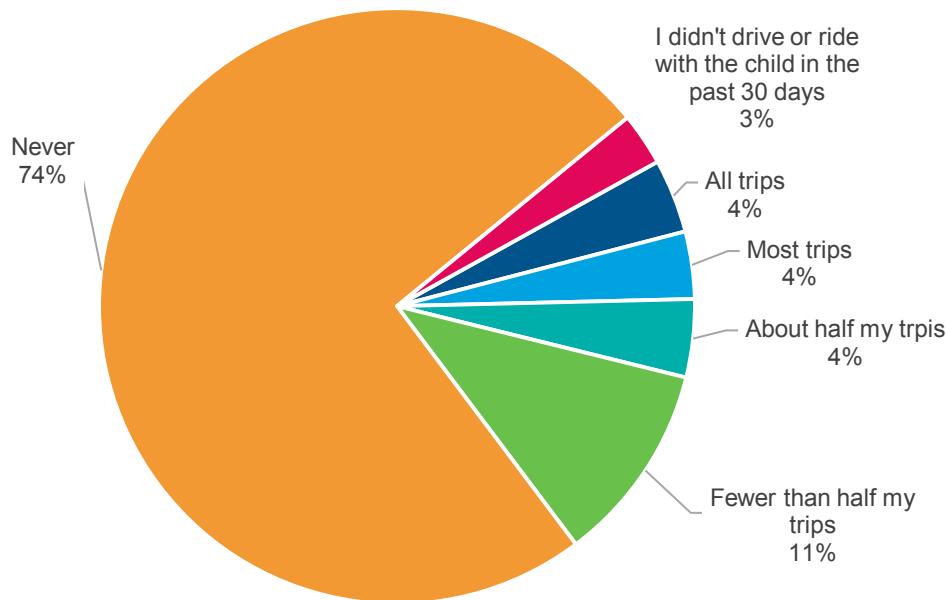
Section 2: Supplemental Results

Results Regarding Children in the Front Seat Collected Through MVOSS Version A (Seat Belt Survey)

The MVOSS survey was constructed of two survey versions, Version A (Seat Belt Survey) and Version B (Child Passenger Safety Survey). While most questions pertaining to child passenger safety reside in Version B, Version A includes a few questions regarding children. The results of these Version A questions are presented here. More details about Version A can be found in the MVOSS Volume 1: Methodology Report² and MVOSS Volume 2: Seat Belt Report.³

Drivers with children living with them at least half the time were each asked about the seating position of the youngest child in the vehicle. Three-fourths said the children hadn't ridden in the front seats in the past 30 days when riding with them.

Figure 35. Proportion of Trips the Child Rode in the Front Seat



Q22 (Version A, Seat Belt Survey): Think about all the times this youngest child rode with you in the PAST 30 DAYS, both with and without other passengers. How often would you say that the child rode in the front seat?

Base: Has a child living with them at least half the time, n = 1,312.

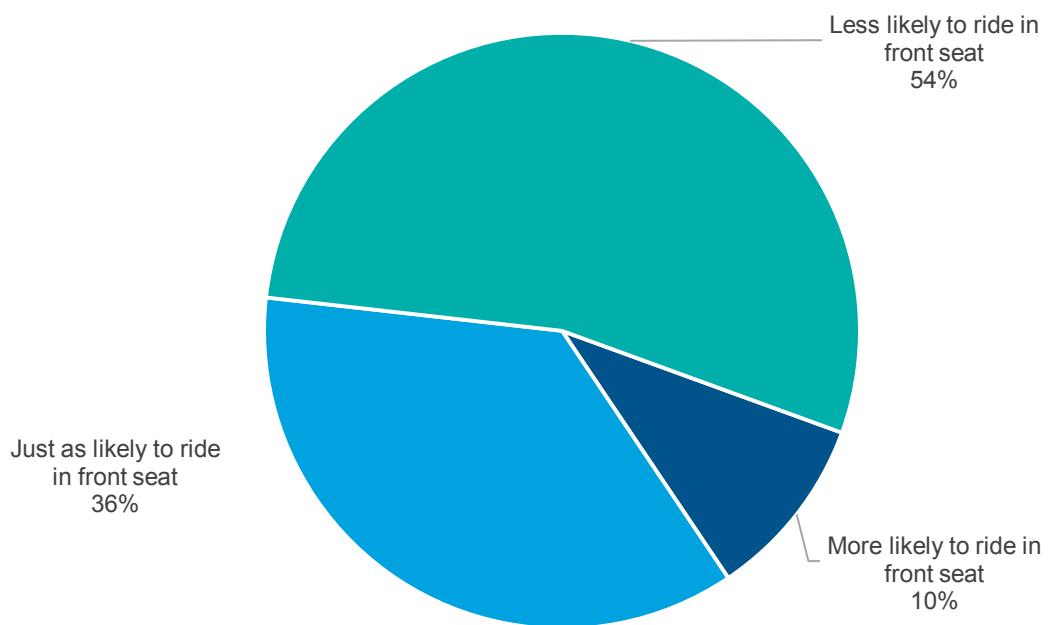
Unweighted n = 1,153, missing responses, n = 159.

² Bailly, K., Martin, K., & Block, A. (2019, December). *2016 Motor vehicle occupant safety survey; Volume 1: Methodology report* (Report No. DOT HS 812 851). National Highway Traffic Safety Administration. Retrieved from https://rosap.ntl.bts.gov/view/dot/43610/~dot_-43610_DS1.pdf.

³ Spado, D., Schaad, A., & Block, A. (2019, December). *2016 motor vehicle occupant safety survey; Volume 2: Seat belt report* (Report No. DOT HS 812 727). National Highway Traffic Safety Administration. Retrieved from <https://rosap.ntl.bts.gov/view/dot/43609>.

The survey asked if the children's usual seating position when riding with the respondents had changed from a year earlier. More than half reported that the children were "less likely to ride in the front seat."

Figure 36. Compared to 12 Months Ago, Is This Child More Likely, Just as Likely, or Less Likely to Ride in the Front Seat?



Q23 (Version A, Seat Belt Survey): Compared to 12 Months Ago, Is this child more likely, just as likely, or less likely to ride in the front seat?

Base: Has a child living with them at least half the time, n = 1,312.

Unweighted n = 1,034, missing responses, n = 278.

If the respondent's child was more likely to ride in the front seat than a year earlier, the survey asked the respondent to select all reasons for this change from a list of six options and/or specify a reason not listed. Nearly three-quarters reported "the child is older/larger."

Table 11. Why the Child Is More Likely to Ride in the Front Seat

Reason	Percent
The child is older/larger	71%
The child and I are the only ones in the vehicle	45%
The child prefers the front	24%
The child likes to sit by me	15%
I want to be able to see/reach the child	10%
There's no other place for the child in the vehicle	11%
Any other reasons	3%

Q23a (Version A, Seat Belt Survey): Why is the child more likely to ride in the front seat when you drive?

Base: Drivers who responded that their child was more likely to ride in the front seat than they were 12 months previously, n = 118.

Unweighted n = 120.

Similarly, if the respondent's child was less likely to ride in the front seat than 12 months ago, the survey asked the respondent to select all reasons for this change out of a list of seven options and/or specify a reason not listed. Three quarters reported "it's safer in the back."

Table 12. Why the Child Is Less Likely to Sit in the Front Seat

Reason	Percent
It's safer in the back	76%
The child is too young/small to sit in the front	61%
It's the law	57%
The child's car seat is in the back	50%
Concerns about airbags	38%
There is no other place for the child in the vehicle	8%
The child prefers the back	4%

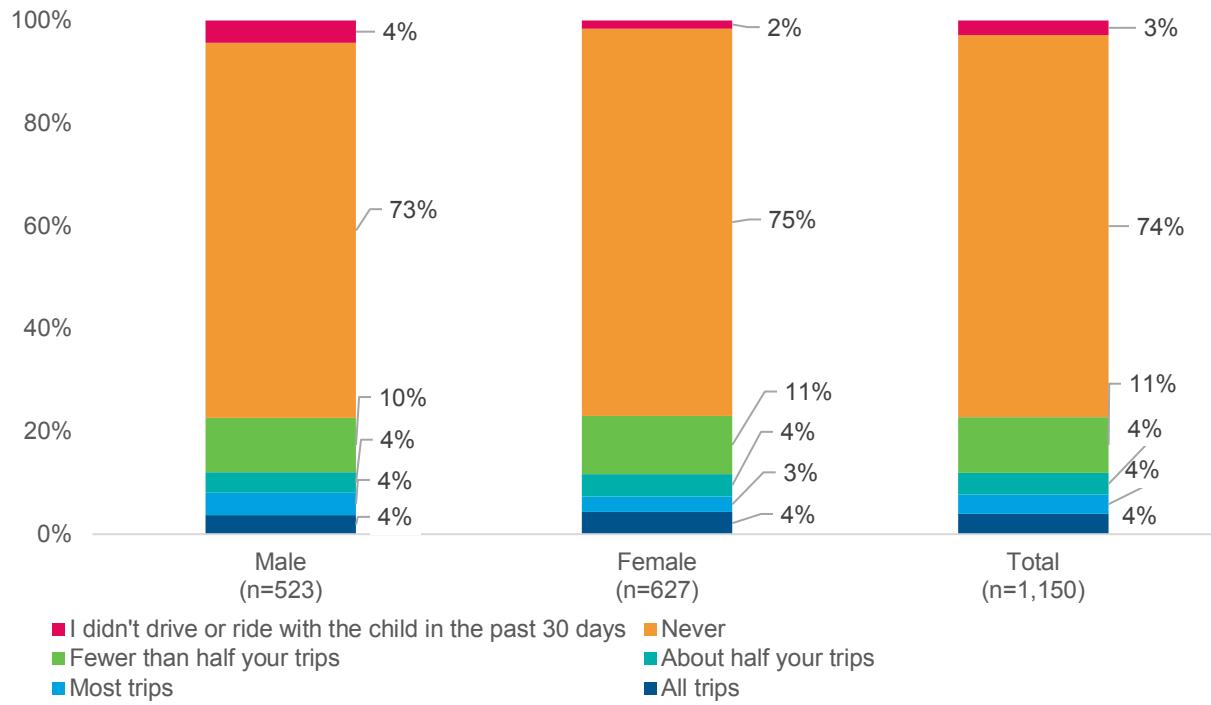
Q23b (Version A, Seat Belt Survey): Why is the child less likely to ride in the front seat?

Base: Drivers who responded that their child was less likely to ride in the front seat than they were 12 months previously, n = 502.

Unweighted n = 513.

Figures 37 – 51 and Tables 14 and 15 present reported frequency and changes surrounding riding in the front seat with a variety of demographic and geographic variables. However, statistical analyses were not conducted to support statements regarding relationships between any of these variables.

Figure 37. Proportion of Trips the Child Rode in the Front Seat, by Sex of Adult Respondent



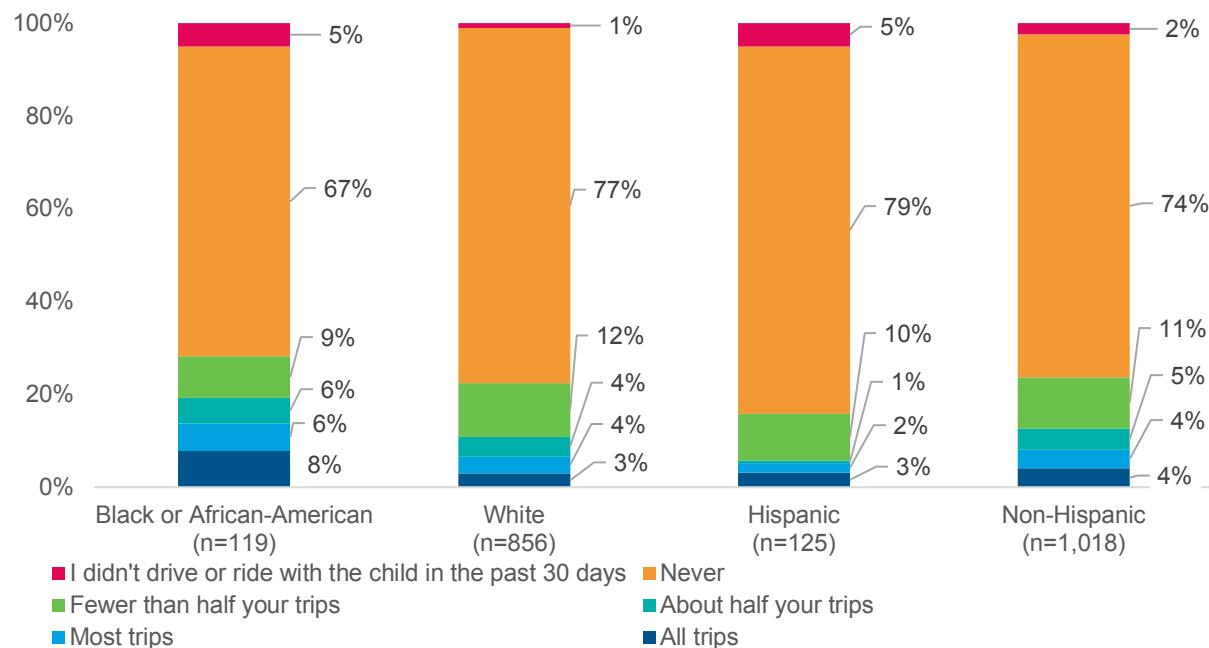
Q22 (Version A, Seat Belt Survey): Think about all the times this youngest child rode with you in the PAST 30 DAYS, both with and without other passengers. How often would you say that the child rode in the front seat?

Q86 (Version A, Seat Belt Survey): Are you a male or female?

Base: Has a child living with them at least half the time, n = 1,312.

Unweighted n's listed above, missing responses, n = 162.

Figure 38. Proportion of Trips the Child Rode in the Front Seat, by Race of Adult Respondent



Q22 (Version A, Seat Belt Survey): Think about all the times this youngest child rode with you in the PAST 30 DAYS, both with and without other passengers. How often would you say that the child rode in the front seat?

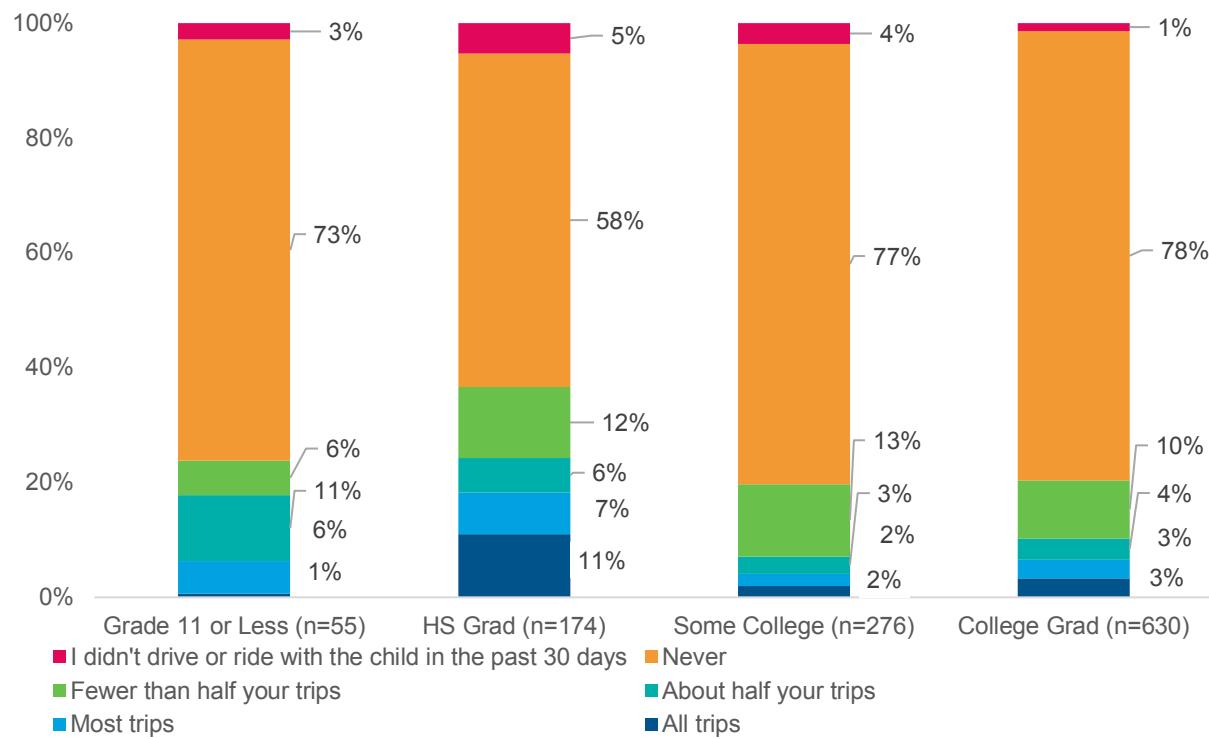
Q89 (Version A, Seat Belt Survey): Which of the following racial categories describes you?

Q88 (Version A, Seat Belt Survey): Do you consider yourself to be Hispanic or Latino?

Base: Has a child living with them at least half the time, n = 1,312.

Unweighted n's listed above, missing responses, n = 294.

Figure 39. Proportion of Trips the Child Rode in the Front Seat, by Education of Adult Respondent



Q22 (Version A, Seat Belt Survey): Think about all the times this youngest child rode with you in the PAST 30 DAYS, both with and without other passengers. How often would you say that the child rode in the front seat?

Q90 (Version A, Seat Belt Survey): What is the highest grade or year of school you completed?

Base: Has a child living with them at least half the time, n = 1,312.

Unweighted n's listed above, missing responses, n = 177.

Table 13. Proportion of Trips the Child Rode in the Front Seat, by Population Density (RUCCS)⁴

	All trips	Most trips	About half your trips	Fewer than half your trips	Never	Did not drive a child past month
Rural-Urban Continuum Code						
Metro - Counties in metro areas of 1 million population or more	4%	2%	3%	11%	78%	2%
Metro - Counties in metro areas of 250,000 to 1 million population	3%	4%	4%	11%	71%	7%
Metro - Counties in metro areas of fewer than 250,000 population	3%	10%	8%	10%	69%	0%
Nonmetro - Urban population of 20,000 or more, adjacent to a metro area	9%	4%	3%	8%	75%	1%
Nonmetro - Urban population of 20,000 or more, not adjacent to a metro area	3%	0%	6%	15%	76%	0%
Nonmetro - Urban population of 2,500 to 19,999, adjacent to a metro area	8%	7%	13%	12%	59%	0%
Nonmetro - Urban population of 2,500 to 19,999, not adjacent to a metro area	2%	1%	9%	10%	70%	8%
Nonmetro - Completely rural or less than 2,500 urban population, adjacent to a metro area	0%	25%	0%	0%	75%	0%
Nonmetro - Completely rural or less than 2,500 urban population, not adjacent to a metro area	0%	0%	0%	41%	52%	7%

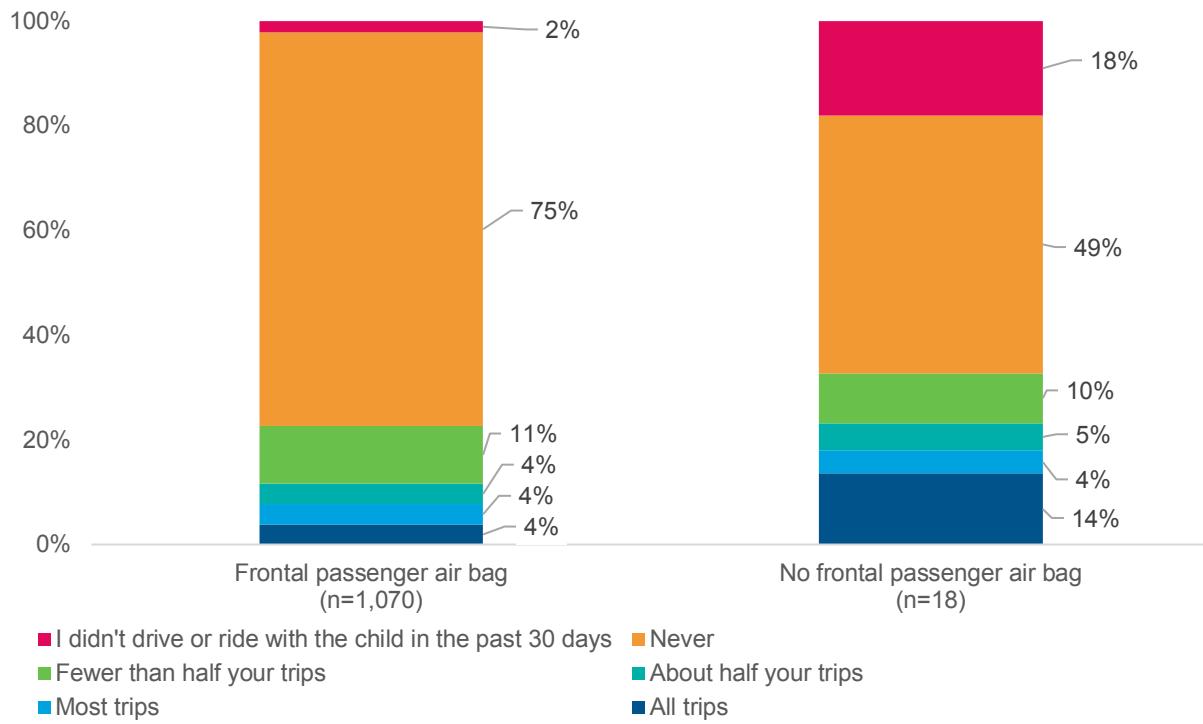
Q22 (Version A, Seat Belt Survey): Think about all the times this youngest child rode with you in the PAST 30 DAYS, both with and without other passengers. How often would you say that the child rode in the front seat?

Base: Has a child living with them at least half the time, n = 1,312.

Unweighted n = 1,152, missing responses, n = 160.

⁴ In order to compare residents in rural or urban communities, USDA Rural Urban Continuum Codes (RUCCS) were used to approximate these groupings. There is a total of nine groups, and all respondents were assigned to a group based on their sampled ZIP Code.

Figure 40. Proportion of Trips the Child Rode in the Front Seat, by Presence of an Air Bag



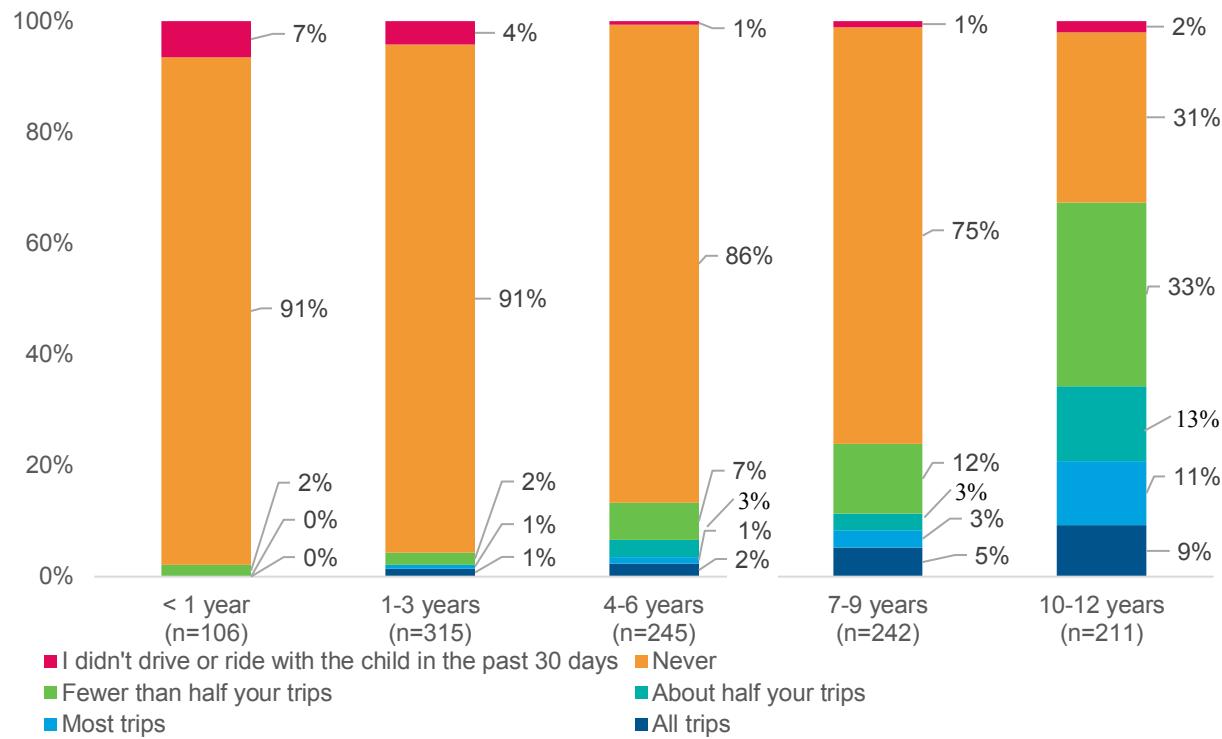
Q22 (Version A, Seat Belt Survey): Think about all the times this youngest child rode with you in the PAST 30 DAYS, both with and without other passengers. How often would you say that the child rode in the front seat?

Q55 (Version A, Seat Belt Survey): Does the vehicle you normally drive have an air bag?

Base: Has a child living with them at least half the time, n = 1,312.

Unweighted n's listed above, missing responses, n = 224.

Figure 41. Proportion of Trips the Child Rode in the Front Seat, by Age of Child



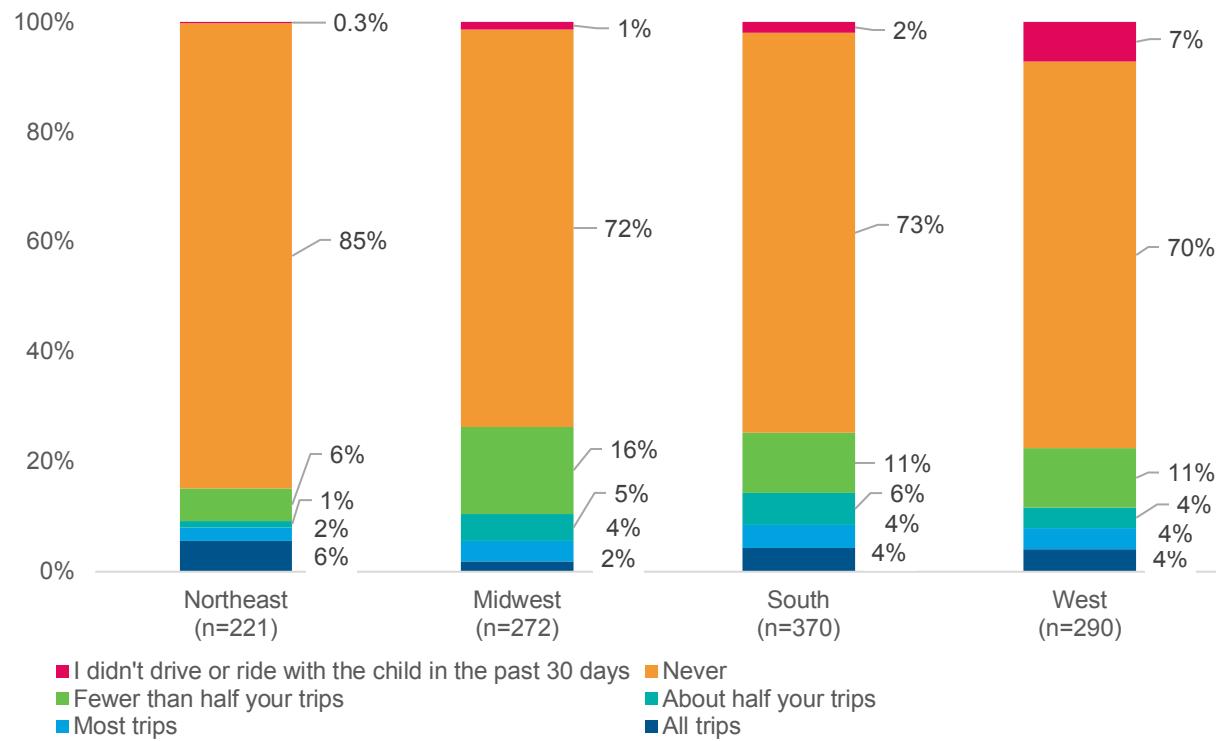
Q22 (Version A, Seat Belt Survey): Think about all the times this youngest child rode with you in the PAST 30 DAYS, both with and without other passengers. How often would you say that the child rode in the front seat?

Q21 (Version A, Seat Belt Survey): How old is the youngest child?

Base: Has a child living with them at least half the time, n = 1,312.

Unweighted n's listed above, missing responses, n = 193.

Figure 42. Proportion of Trips the Child Rode in the Front Seat, by Region of Country



Q22 (Version A, Seat Belt Survey): Think about all the times this youngest child rode with you in the PAST 30 DAYS, both with and without other passengers. How often would you say that the child rode in the front seat?

Base: Has a child living with them at least half the time, n = 1,312.

Unweighted n's listed above, missing responses, n = 159.

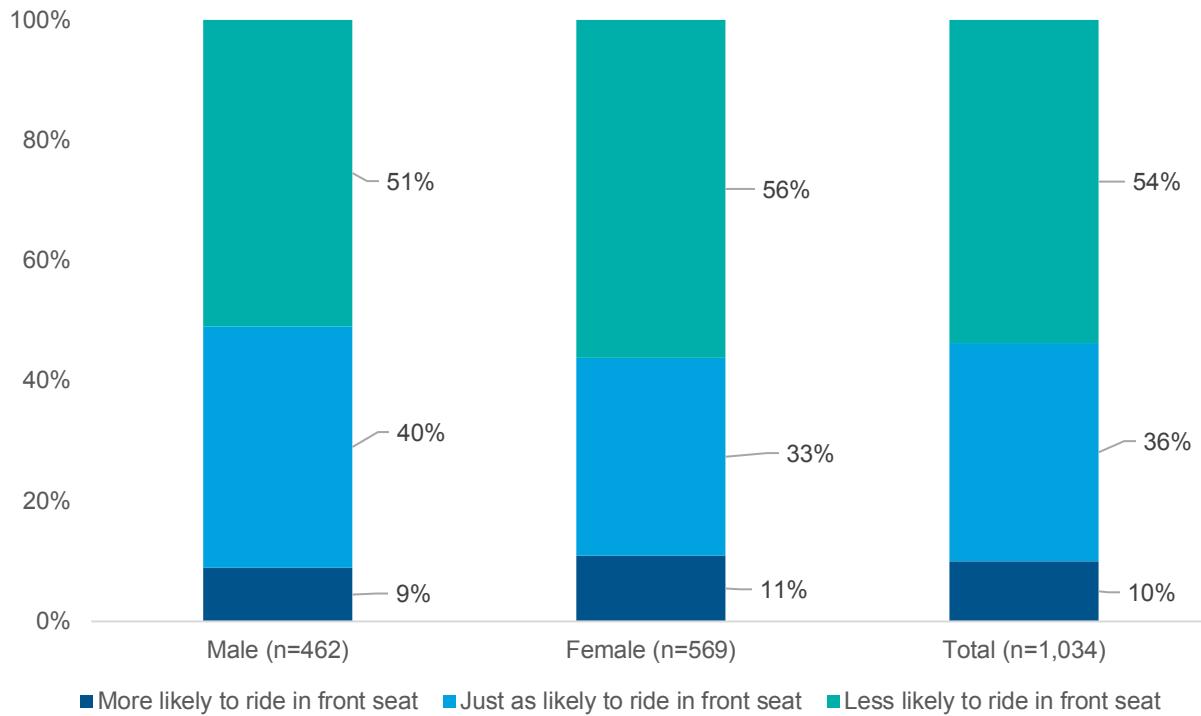
Northeast: CT, ME, MA, NH, NJ, NY, PA, RI, VT.

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

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

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

Figure 43. Compared to 12 Months Ago, Is This Child More Likely, Just as Likely, or Less Likely to Ride in the Front Seat, by Sex of Adult Respondent



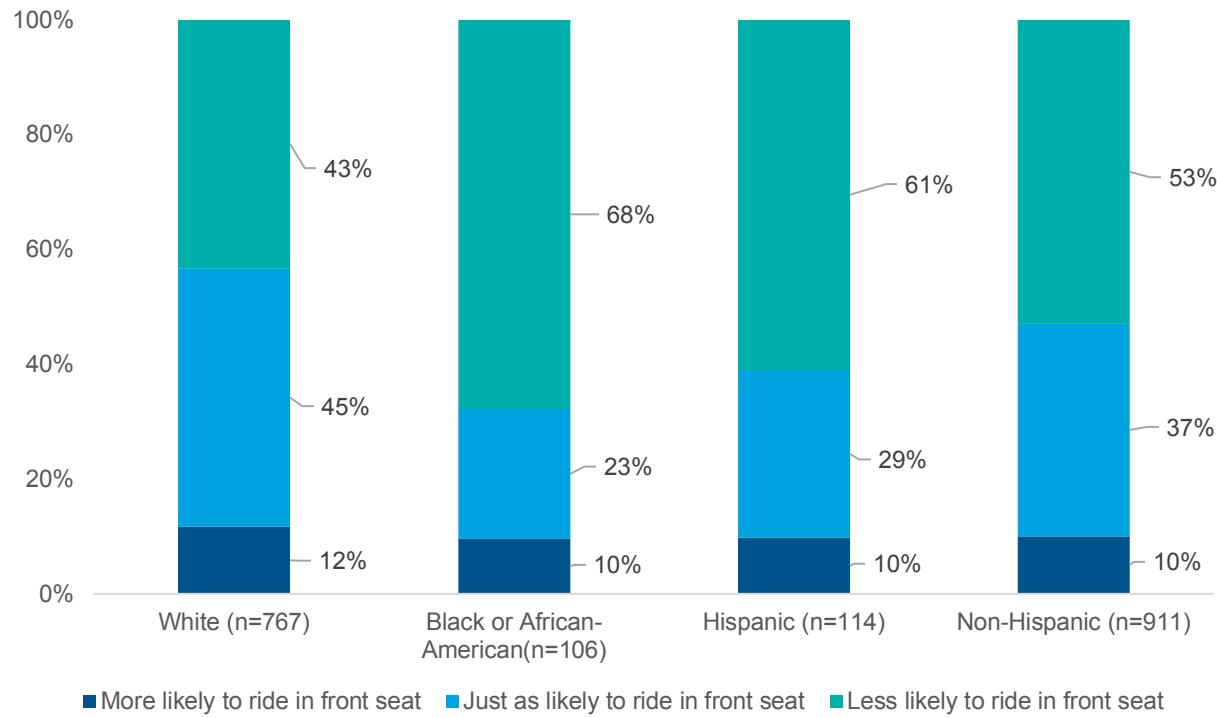
Q23 (Version A, Seat Belt Survey): Compared to 12 MONTHS ago, is this child more likely, just as likely, or less likely to ride in the front seat?

Q86 (Version A, Seat Belt Survey): Are you a male or a female?

Base: Has a child living with them at least half the time, n = 1,312.

Unweighted n's listed above, missing responses, n = 278.

Figure 44. Compared to 12 Months Ago, Is This Child More Likely, Just as Likely, or Less Likely to Ride in the Front Seat, by Race/Ethnicity of Adult Respondent



Q23 (Version A, Seat Belt Survey): Compared to 12 MONTHS ago, is this child more likely, just as likely, or less likely to ride in the front seat?

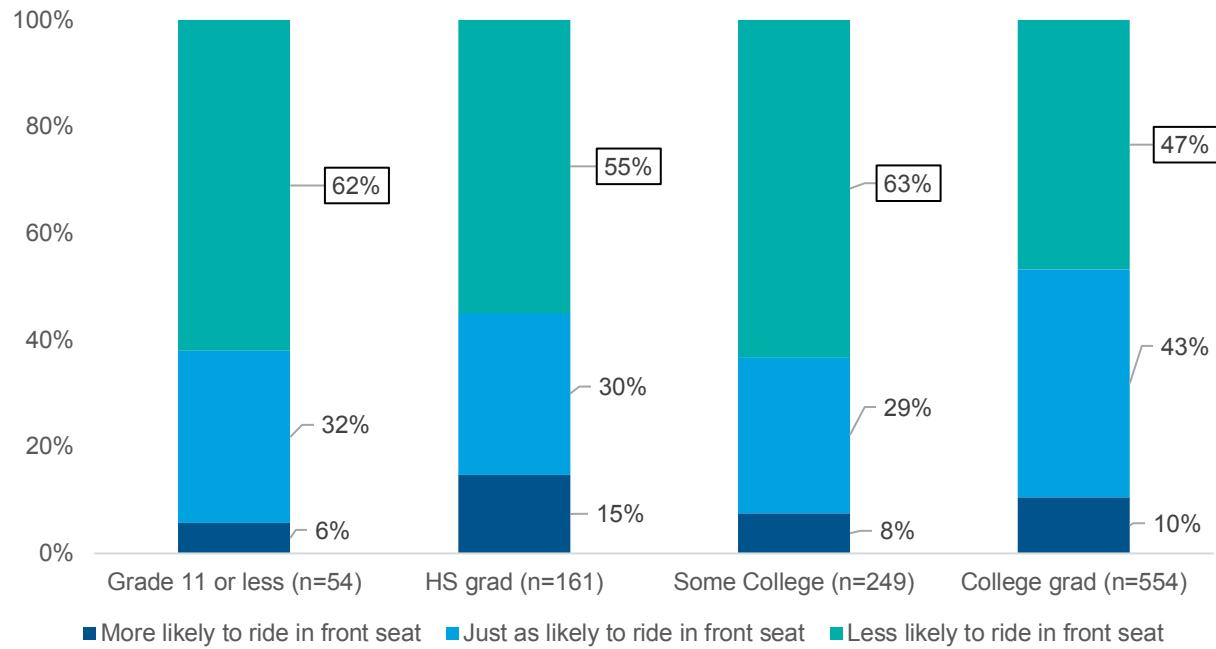
Q89 (Version A, Seat Belt Survey): Which of the following racial categories describes you?

Q88 (Version A, Seat Belt Survey): Do you consider yourself to be Hispanic or Latino?

Base: Has a child living with them at least half the time, n = 1,312.

Unweighted n's listed above, missing responses, n = 287.

Figure 45. Compared to 12 Months Ago, Is This Child More Likely, Just as Likely, or Less Likely to Ride in the Front Seat, by Education of Adult Respondent



Q23 (Version A, Seat Belt Survey): Compared to 12 MONTHS ago, is this child more likely, just as likely, or less likely to ride in the front seat?

Q90 (Version A, Seat Belt Survey): What is the highest grade or year of school you completed?

Base: Has a child living with them at least half the time n = 1,312.

Unweighted n's listed above, missing responses, n = 294.

Table 14. Compared to 12 Months Ago, Is This Child More Likely, Just as Likely, or Less Likely to Ride in the Front Seat, by Population Density (RUCCS)

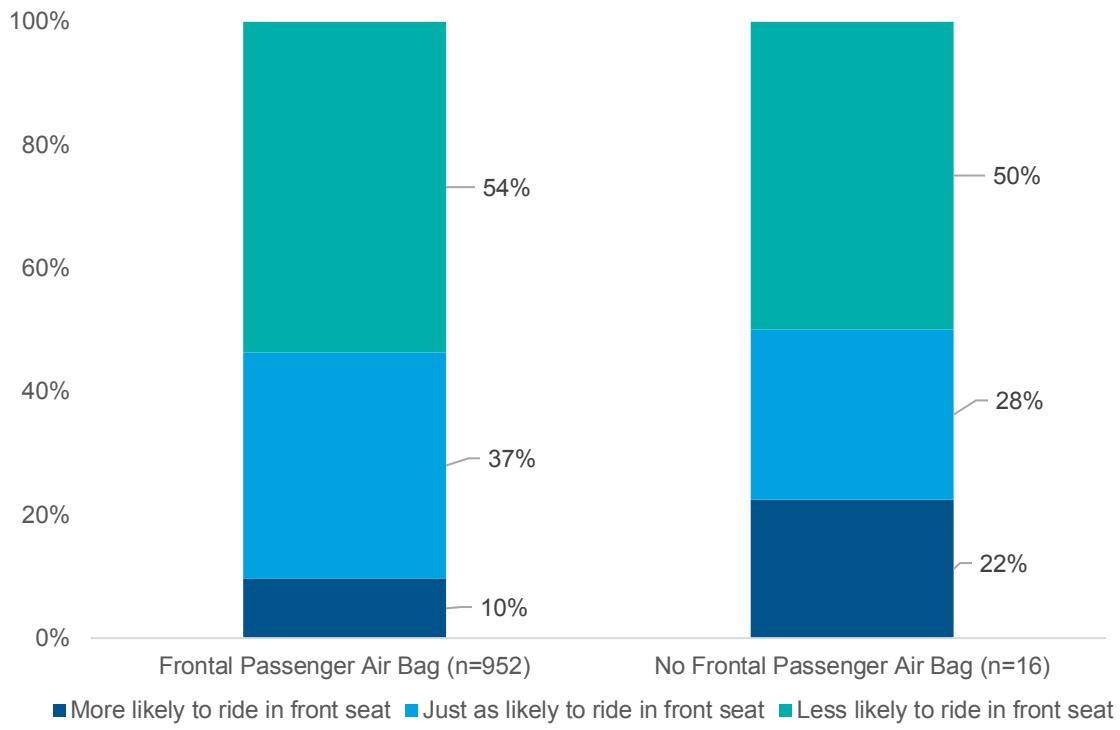
	More Likely to Ride in Front Seat	Just as Likely to Ride in Front Seat	Less Likely to Ride in Front Seat
Rural-Urban Continuum Code			
Metro - Counties in metro areas of 1 million population or more	11%	33%	56%
Metro - Counties in metro areas of 250,000 to 1 million population	8%	39%	53%
Metro - Counties in metro areas of fewer than 250,000 population	10%	41%	49%
Nonmetro - Urban population of 20,000 or more, adjacent to a metro area	18%	33%	49%
Nonmetro - Urban population of 20,000 or more, not adjacent to a metro area	0%	49%	51%
Nonmetro - Urban population of 2,500 to 19,999, adjacent to a metro area	14%	53%	33%
Nonmetro - Urban population of 2,500 to 19,999, not adjacent to a metro area	6%	36%	58%
Nonmetro - Completely rural or less than 2,500 urban population, adjacent to a metro area	0%	25%	75%
Nonmetro - Completely rural or less than 2,500 urban population, not adjacent to a metro area	0%	51%	49%

Q23 (Version A, Seat Belt Survey): Compared to 12 MONTHS ago, is this child more likely, just as likely, or less likely to ride in the front seat?

Base: Has a child living with them at least half the time, n = 1,312.

Unweighted n = 1,033, missing responses, n = 279.

Figure 46. Compared to 12 Months Ago, Is This Child More Likely, Just as Likely, or Less Likely to Ride in the Front Seat, by Presence of Air Bag*



Q23 (Version A, Seat Belt Survey): Compared to 12 MONTHS ago, is this child more likely, just as likely, or less likely to ride in the front seat?

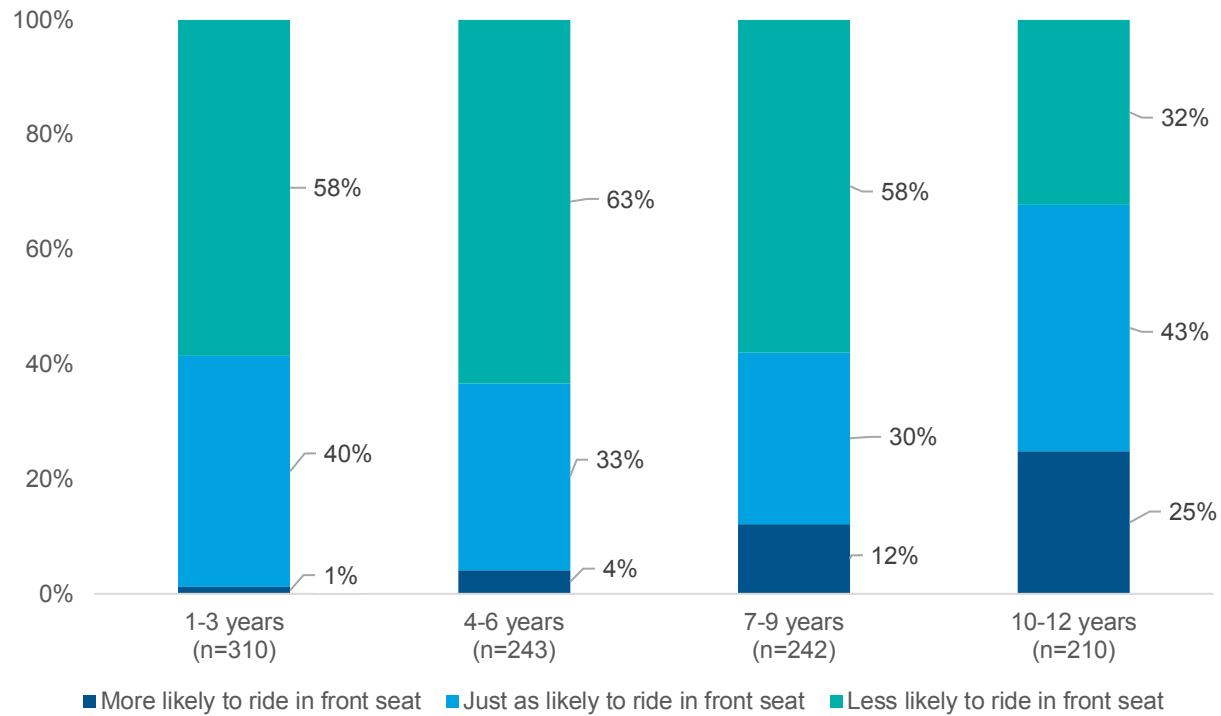
Q55 (Version A, Seat Belt Survey): Does the vehicle you normally drive have an air bag?

Base: Has a child living with them at least half the time, n = 1,312.

Unweighted n's listed above, missing responses, n = 344.

* The number of respondents who reported having a car without frontal passenger air bags was small.

Figure 47. Compared to 12 Months Ago, Is This Child More Likely, Just as Likely, or Less Likely to Ride in the Front Seat, by Age of Child



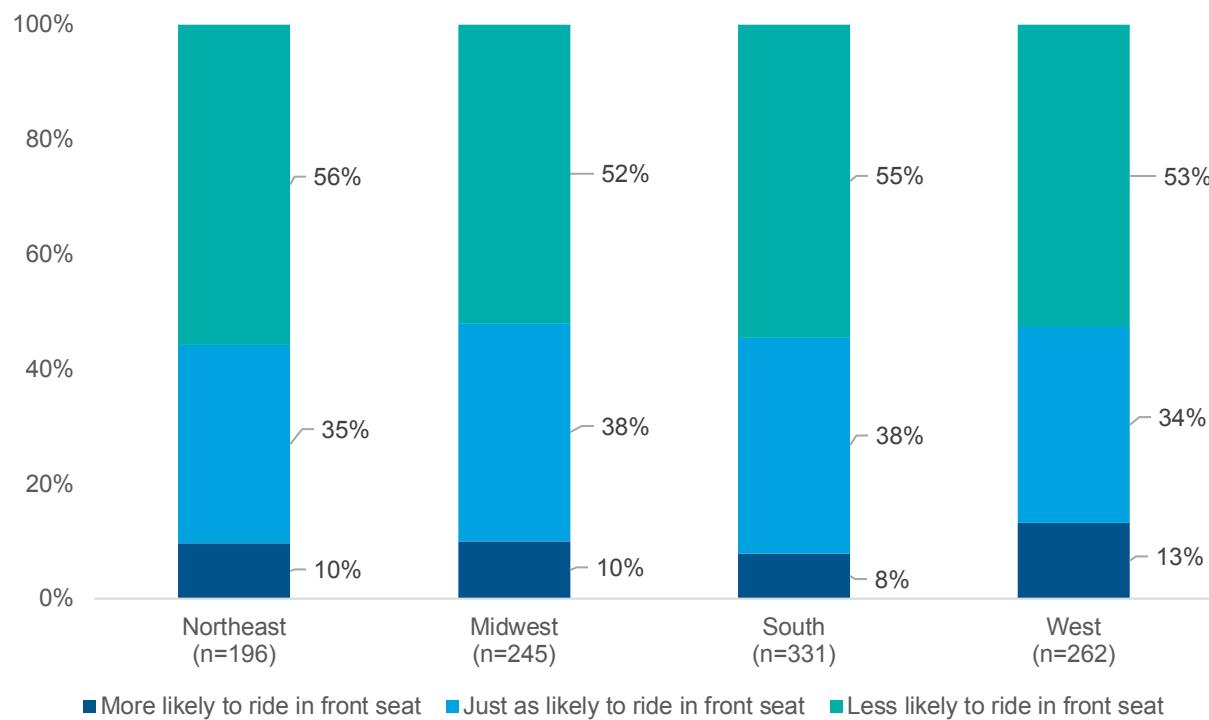
Q23 (Version A, Seat Belt Survey): Compared to 12 MONTHS ago, is this child more likely, just as likely, or less likely to ride in the front seat?

Q21 (Version A, Seat Belt Survey): How old is the youngest child?

Base: Has a child living with them at least half the time, n = 1,312.

Unweighted n's listed above, missing responses, n = 307.

Figure 48. Compared to 12 Months Ago, Is This Child More Likely, Just as Likely, or Less Likely to Ride in the Front Seat, by Region of Country



Q23 (Version A, Seat Belt Survey): Compared to 12 MONTHS ago, is this child more likely, just as likely, or less likely to ride in the front seat?

Base: Has a child living with them at least half the time, n = 1,312.

Unweighted n's listed above, missing responses, n = 278.

Northeast: CT, ME, MA, NH, NJ, NY, PA, RI, VT.

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

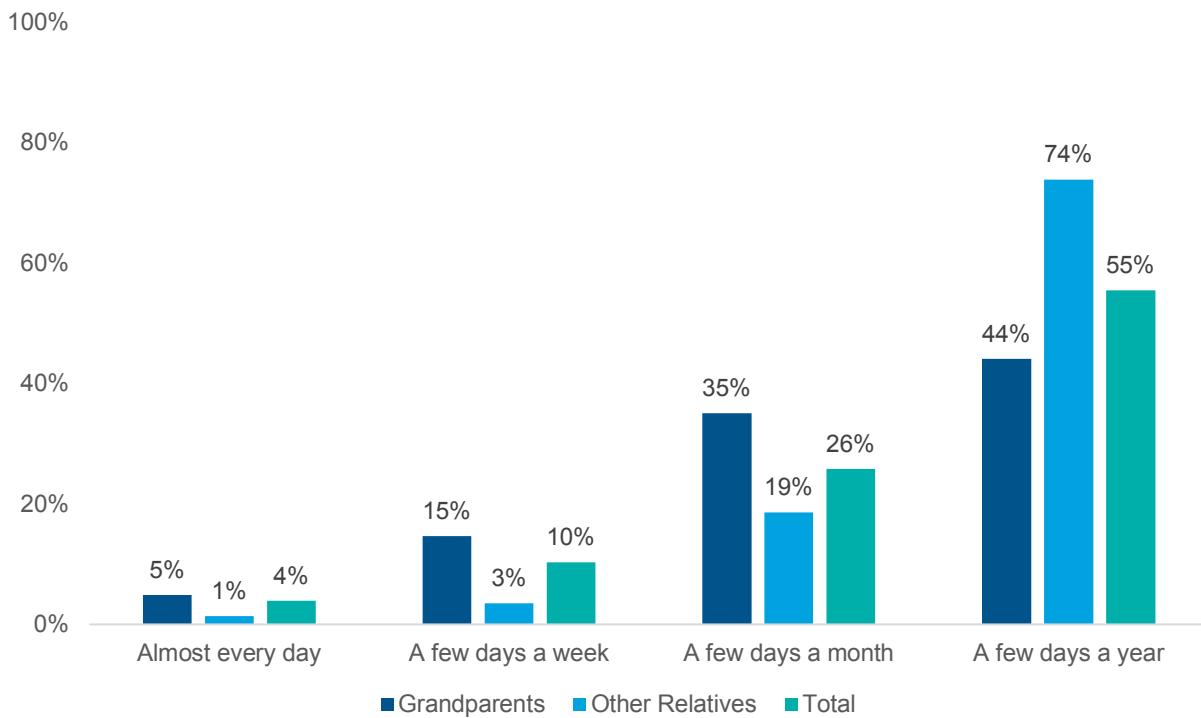
South: AL, AR, DE, DC, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV.

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

Miscellaneous Supplemental Results From Version B (Child Safety Survey)

This section contains a variety of bivariate supplemental results. However, no statistical analyses were conducted to support statements regarding relationships between any combination of variables.

Figure 49. Frequency Grandparents/Others Drive Children: Drivers Who Don't Live With Young Children



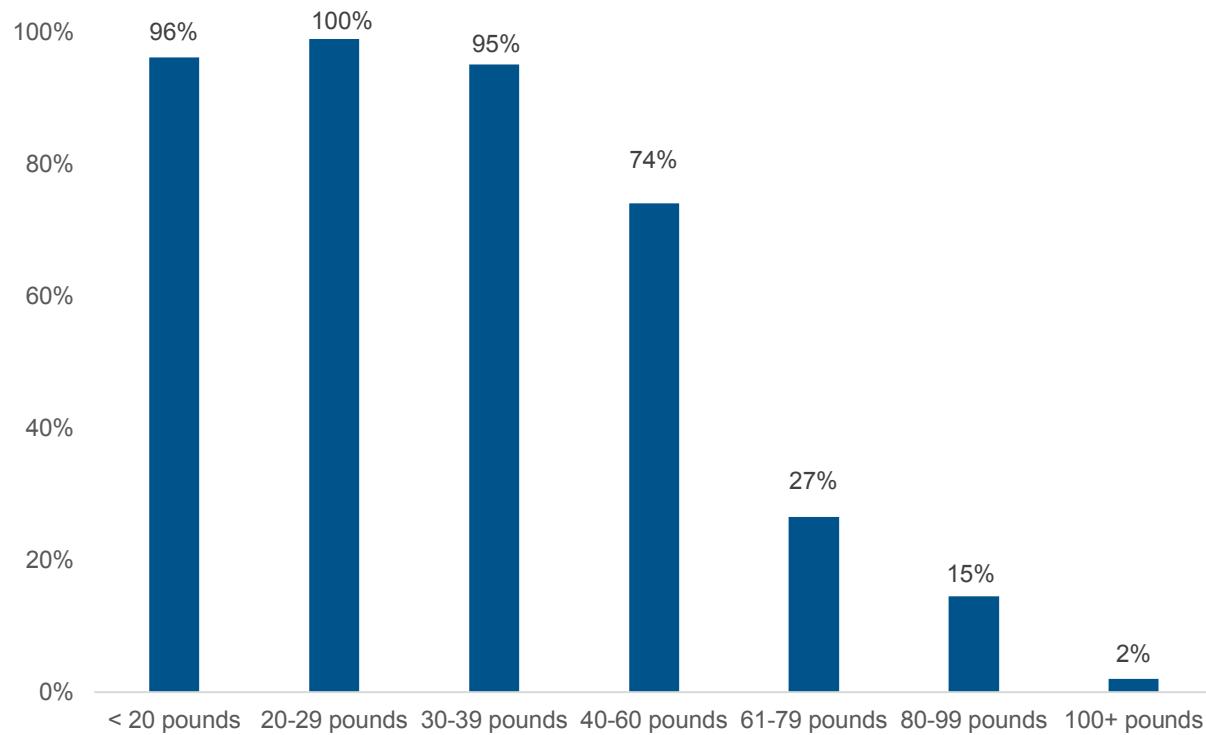
Q13: How often do you drive with children under age 13?

Q14a: What is your relationship to the child or children that you at least sometimes drive?

Base: Does not live with a child under 13, but has driven with child passengers in that age range in the past year (Relatives Only), n = 1,610.

Unweighted n = 1,410, missing responses, n = 200.

Figure 50. “All of the Time” Car Seat Use, by Child’s Weight (0 – 12 Years Old)



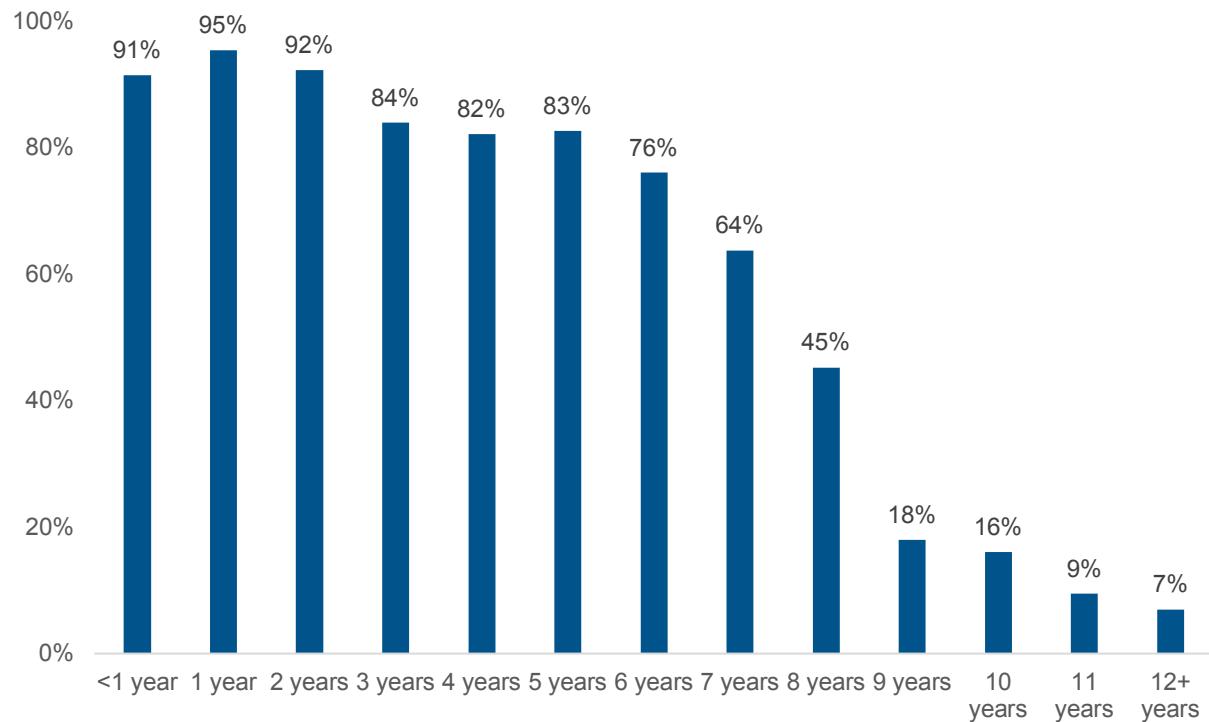
Q20: When you are driving and the [SELECTED CHILD] rides in the vehicle with you, how often does (he/she) ride in a car seat? Car seats include booster seats. Would you say (he/she) rides in a car seat...?

Q16: How much does the [AGE] year old “BOY/GIRL” weigh?

Base: Caregivers of related children or children in the same household, n = 1,086.

Unweighted n = 652, missing responses, n = 434.

Figure 51. “All of the Time” Car Seat Use, by Child’s Age



Q20: When you are driving and the [SELECTED CHILD] rides in the vehicle with you, how often does (he/she) ride in a car seat? Car seats include booster seats. Would you say (he/she) rides in a car seat...?

Q9a: How old is this child?

Base: Caregivers driving related children or children in same household, n = 1,086.

Unweighted n = 623, missing responses, n = 463.

Table 15. Type of Child Car Seat, by Child's Age

	Age in Years								
	< 1 (n=82)	1 (n=105)	2 (n=103)	3 (n=68)	4 (n=68)	5 (n=43)	6 (n=55)	7 (n=51)	8-12 (n=75)
Type of Seat									
Booster Seat	2%	15%	12%	16%	38%	50%	64%	76%	56%
Front facing seat	17%	36%	76%	80%	62%	48%	33%	24%	43%
Rear facing seat	81%	49%	12%	4%	1%	2%	3%	0%	1%

Q22: When the [SELECTED CHILD] rides in the car seat, does the child wear harness straps that go over the shoulders and buckle between the legs?

Q23: Is the [SELECTED CHILD] 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?

Q24: Does the [SELECTED CHILD] ride in a booster seat?

Q9a: How old is the child?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.
Unweighted n's listed above, missing responses, n = 86.

Table 16. Type of Child Car Seat, by Child's Weight⁵

	< 20 lbs. (n=58)	20-29 lbs. (n=130)	30-39 lbs. (n=173)	40-60 lbs. (n=242)	61-79 lbs. (n=44)	80-99 lbs. (n=20)	100+ (n=2)
Type of Seat							
Booster Seat	--	1%	13%	62%	69%	39%	--
Front facing seat	4%	47%	78%	37%	31%	60%	100%
Rear facing seat	96%	53%	9%	0%	--	1%	--

Q22: When the [SELECTED CHILD] rides in the car seat, does the child wear harness straps that go over the shoulders and buckle between the legs?

Q23: Is the [SELECTED CHILD] 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?

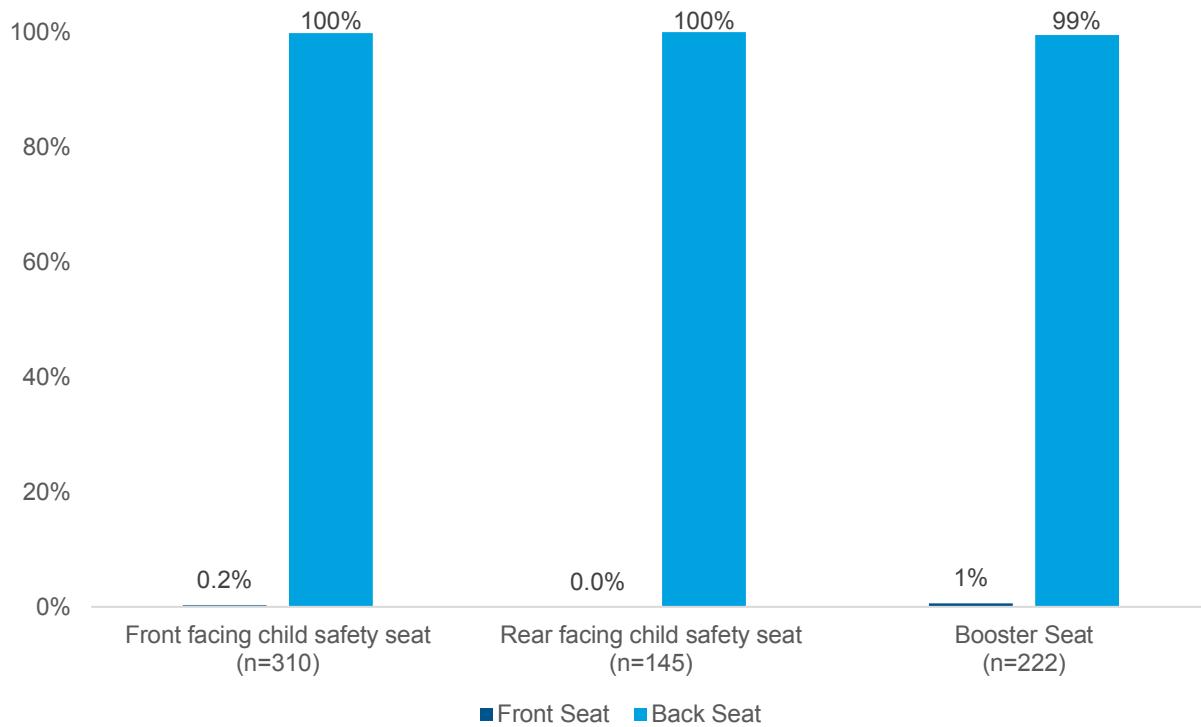
Q24: Does the [SELECTED CHILD] ride in a booster seat?

Q16: How much does the child weigh?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736. Unweighted n's listed above, missing responses, n = 67.

⁵ Readers are cautioned that respondents may have been guessing at children's weights.

Figure 52. Placement of Child's Car Seat, by Type of Car Seat



Q22: When the [SELECTED CHILD] rides in the car seat, does the child wear harness straps that go over the shoulders and buckle between the legs?

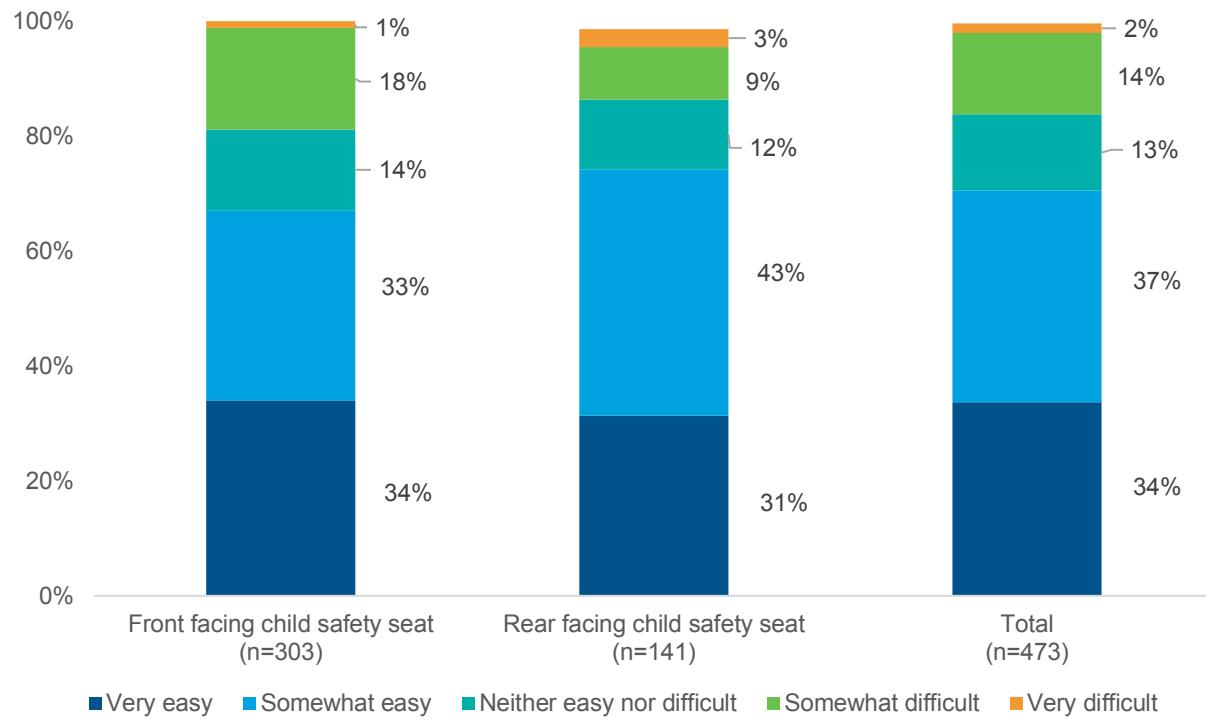
Q23: Is the [SELECTED CHILD] usually in a front facing position when riding in the car seat, where the child faces towards the front of the vehicle? Or is the child usually in a rear facing position when riding in the car seat, where the child faces towards the rear of the vehicle?

Q24: Does the [SELECTED CHILD] ride in a booster seat?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.

Unweighted n's listed above, missing responses, n = 59.

Figure 53. Ease of Attaching Car Seat to Vehicle

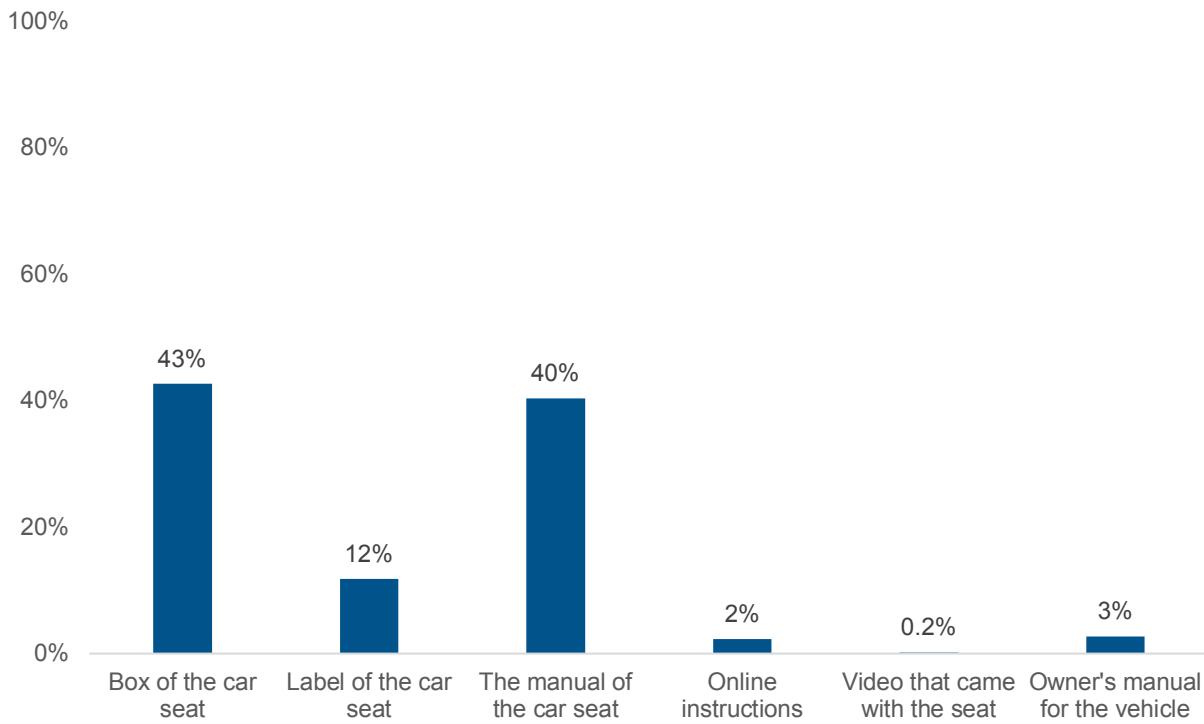


Q45: Overall, how easy or difficult is it for you to attach the car seat to the vehicle you usually drive?

Base: Child uses car seat, but not a booster seat, at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 515.

Unweighted n's listed above, missing responses, n = 42.

Figure 54. “Very Easy to Understand Instructions,” by Source of Instructions



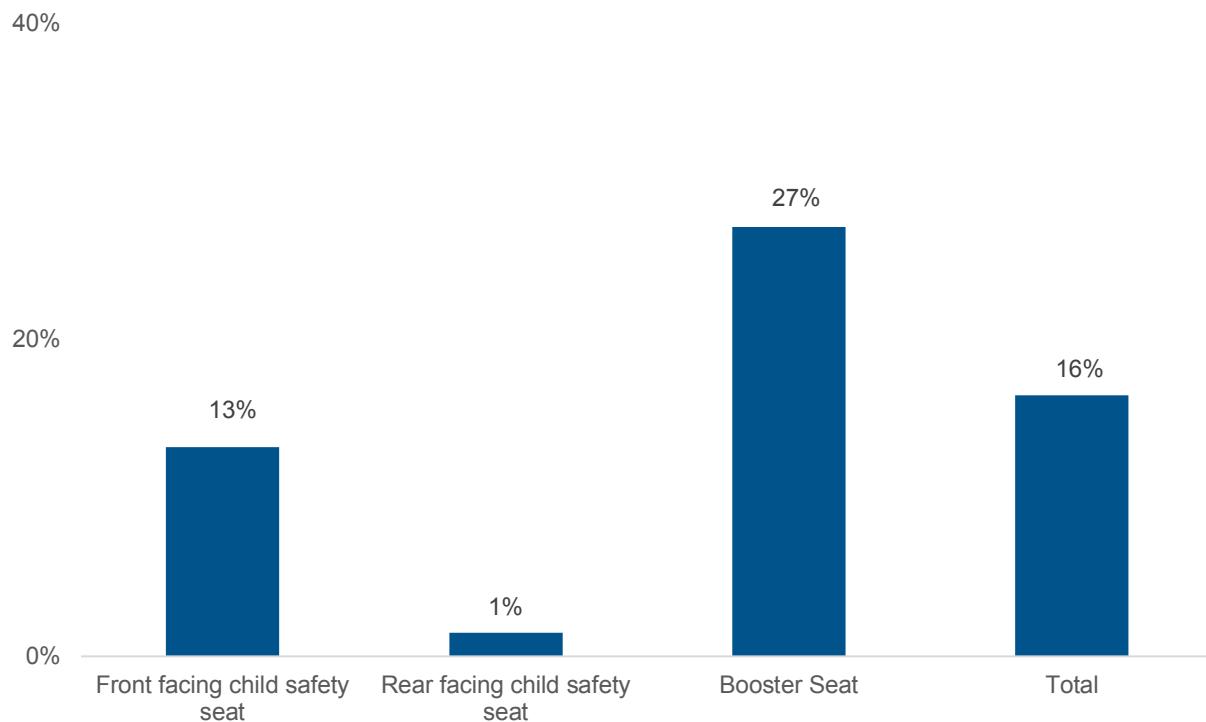
Q42: Which instructions did you read or watch?

Q43: How easy or difficult were the instructions to understand?

Base: Read the child car seat instructions, n = 493.

Unweighted n = 225, missing responses, 268.

Figure 55. Child Has Gotten Out of Car Seat While Respondent Was Driving

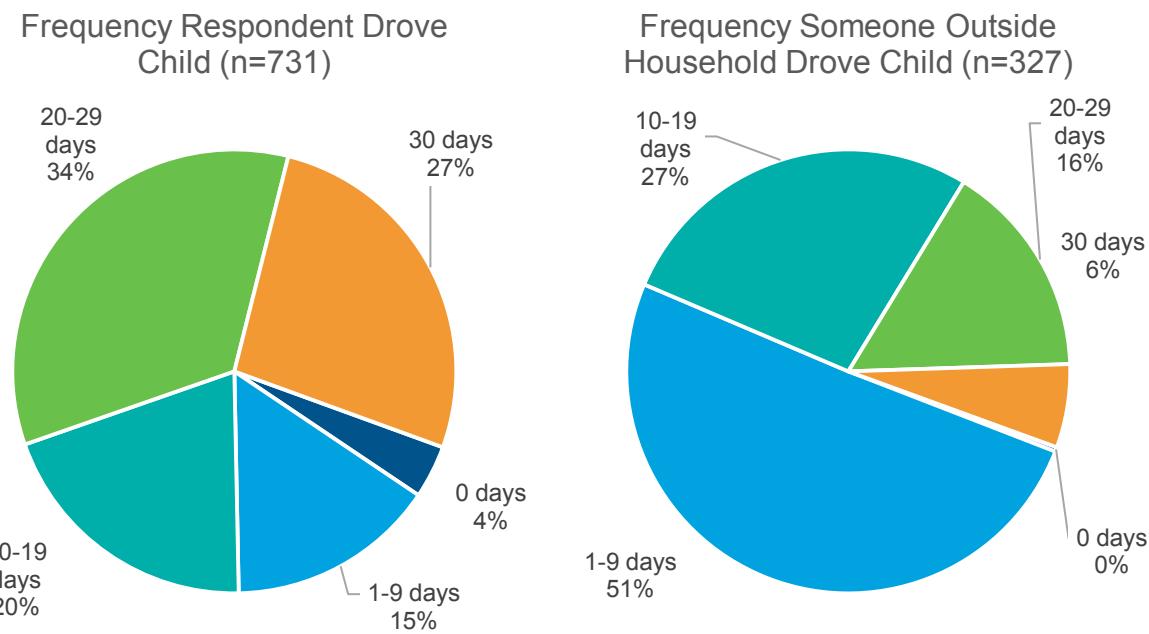


Q51: Has the [SELECTED CHILD] ever gotten himself/herself out of the car seat while you were driving?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.

Unweighted n = 690, missing responses, n = 46.

Figure 56. Frequency Child Was Driven, by Respondent Versus a Person Outside the Household in Past Month

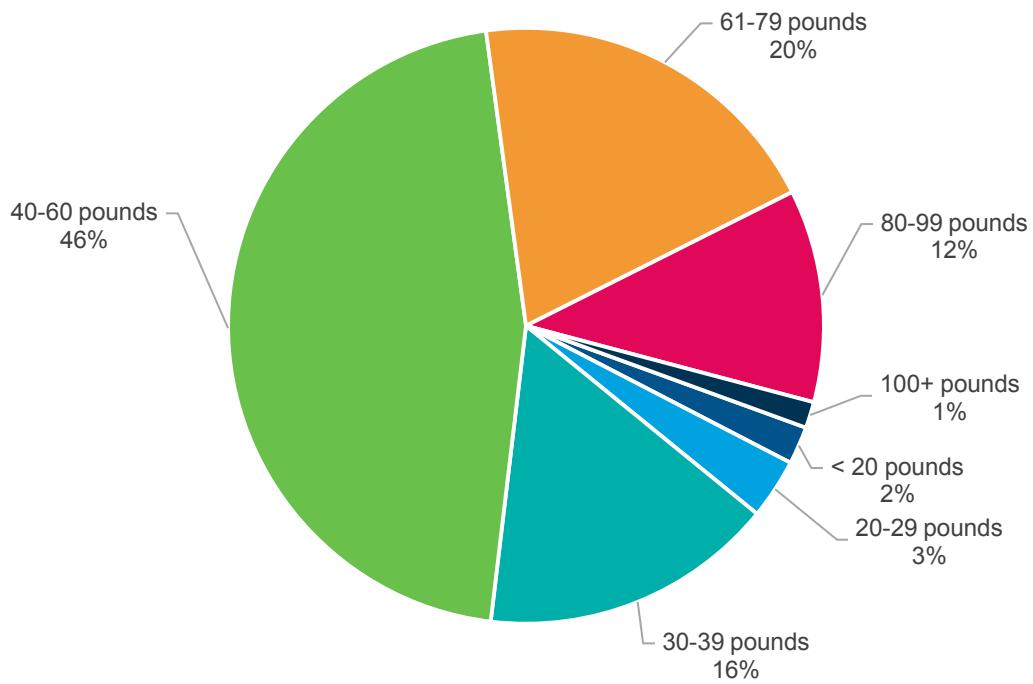


Q28: How many days out of the past thirty days did the [SELECTED CHILD] ride in a vehicle that you drove?

Q29: How many days out of the past thirty days did the [SELECTED CHILD] ride in a vehicle driven by someone outside of your household (including school buses, taxis, ride sharing services, and other private vehicles)?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.
Unweighted n's listed above, missing responses, n = 5.

Figure 57. Weight of Child Who Always or Most of the Time Uses Seat Belt When Not in Car Seat



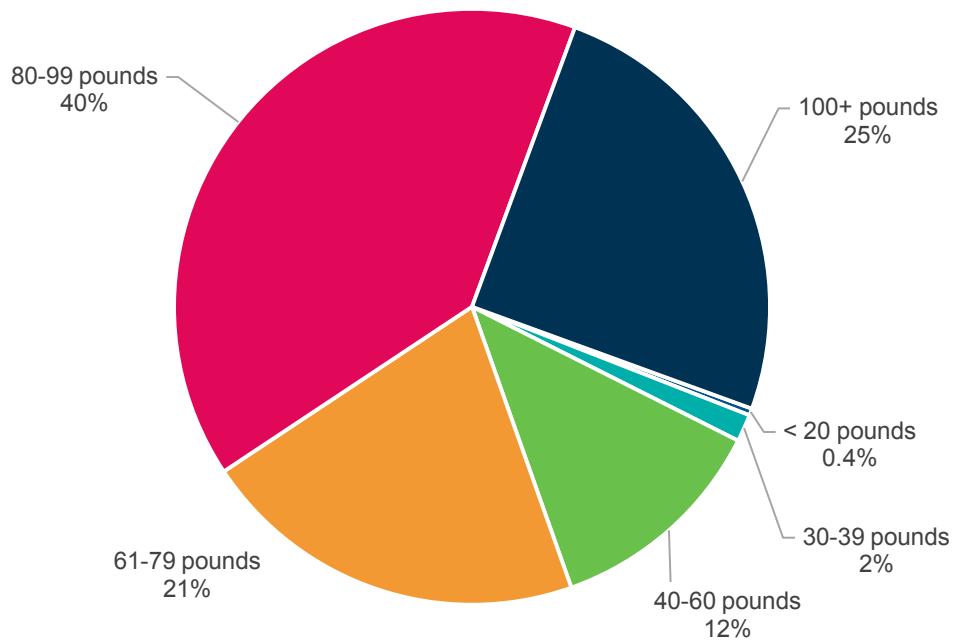
Q16: How much does the //INSERT [AGE] year old //INSERT “BOY/GIRL” weigh?

Q68: When the [SELECTED CHILD] doesn't ride in the car seat when riding with you, how often is (he/she) buckled in a seat belt?

Base: Child uses a seat belt when not in a car seat either all of the time or most of the time, n = 88.

Unweighted n = 85, missing responses, n = 3.

Figure 58. Weight of Child Who Never Uses Car Seat



Q16: How much does the //INSERT [AGE] year old //INSERT “BOY/GIRL” weigh?

Q20: When you are driving and the [SELECTED CHILD] rides in the vehicle with you, how often does (he/she) ride in a car seat? Car seats include booster seats.

Base: Child never uses a car seat, n = 329.

Unweighted n = 319, missing responses, n = 10.

Table 17. Percentage of Children Who at Least on Occasion Use Child Restraints, by Age

Seat Position	Year of Age								
	<1	1	2	3	4	5	6	7	8-12
Unweighted n	(90)	(116)	(117)	(87)	(85)	(59)	(77)	(79)	(369)
Booster seat	2%	15%	12%	15%	35%	44%	52%	59%	14%
Front facing child seat	16%	35%	73%	72%	56%	43%	25%	19%	10%
Rear facing infant seat	76%	49%	12%	4%	1%	2%	2%	*	0.2%
Never uses car seat	6%	1%	4%	9%	8%	11%	21%	22%	75%
Never drives child	*	*	*	*	1%	*	*	*	1%

Q9a: How old is this child?

Q20: When you are driving and the child rides in the vehicle with you, how often does (he/she) ride in a car seat? Car seats include booster seats. Would you say (he/she) rides in a car seat...?

Q23: Is the child usually in a front facing position when riding in the car seat, or is the child usually in a rear facing position when riding in the car seat?

Q24: Does the child ride in a booster seat?

Base: Caregivers of related children or children in the same household, n = 1,086.

Unweighted n's listed above, missing responses, n = 8.

* – denotes a cell with no responses.

Table 18. Percentage of Children Who at Least on Occasion Use Child Restraints, by Weight

Seat Position	<20 lbs.	20-29 lbs.	30-39 lbs.	40-60 lbs.	61-79 lbs.	80-99 lbs.	100+ lbs.
Unweighted n	(59)	(129)	(174)	(281)	(119)	(133)	(86)
Booster seat	*	0%	11%	55%	28%	7%	*
Front facing child seat	4%	47%	77%	31%	13%	9%	2%
Rear facing infant seat	93%	53%	9%	*	*	0.3%	*
Never uses car seat	2%	*	2%	13%	59%	84%	97%
Never drives child	*	*		0.3%	*	1%	1%

Q9a: How much does the child weigh?

Q20: When you are driving and the child rides in the vehicle with you, how often does (he/she) ride in a car seat? Car seats include booster seats. Would you say (he/she) rides in a car seat...?

Q23: Is the child usually in a front facing position when riding in the car seat, or is the child usually in a rear facing position when riding in the car seat?

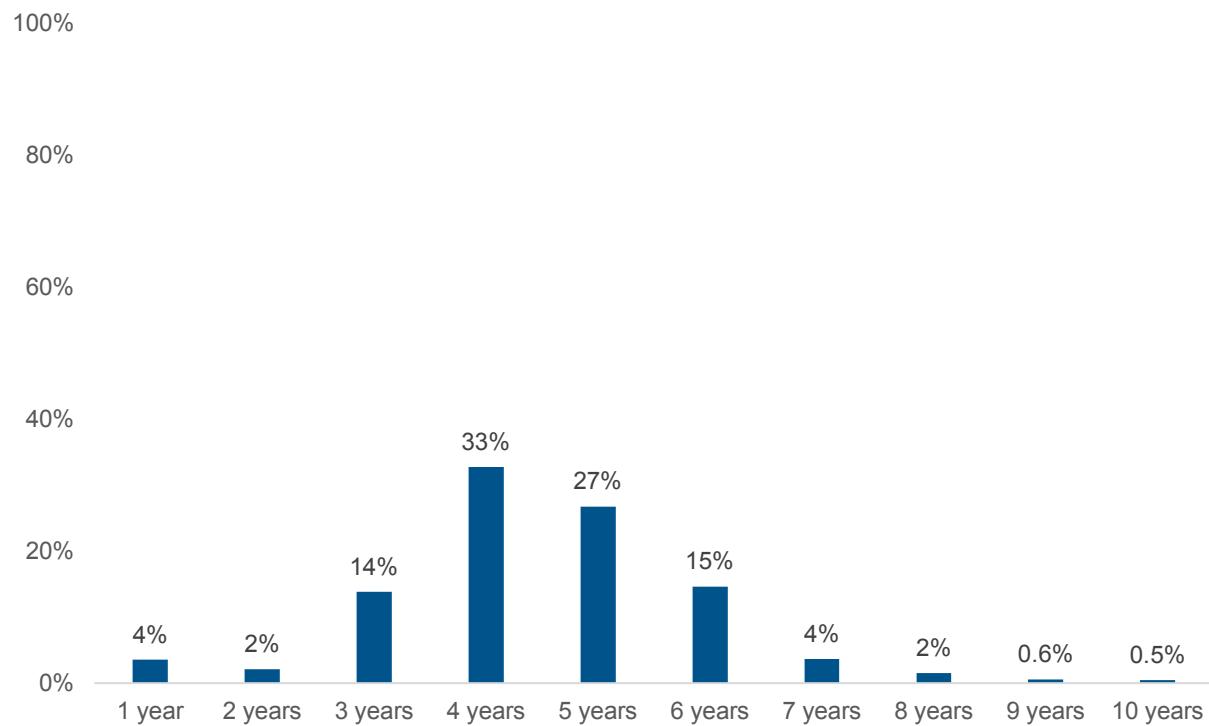
Q24: Does the child ride in a booster seat?

Base: Caregivers of related children or children living in the same household, n = 1,086.

Unweighted n's listed above, missing responses, n = 114.

* – denotes a cell with no responses.

Figure 59. Age First Used a Booster Seat

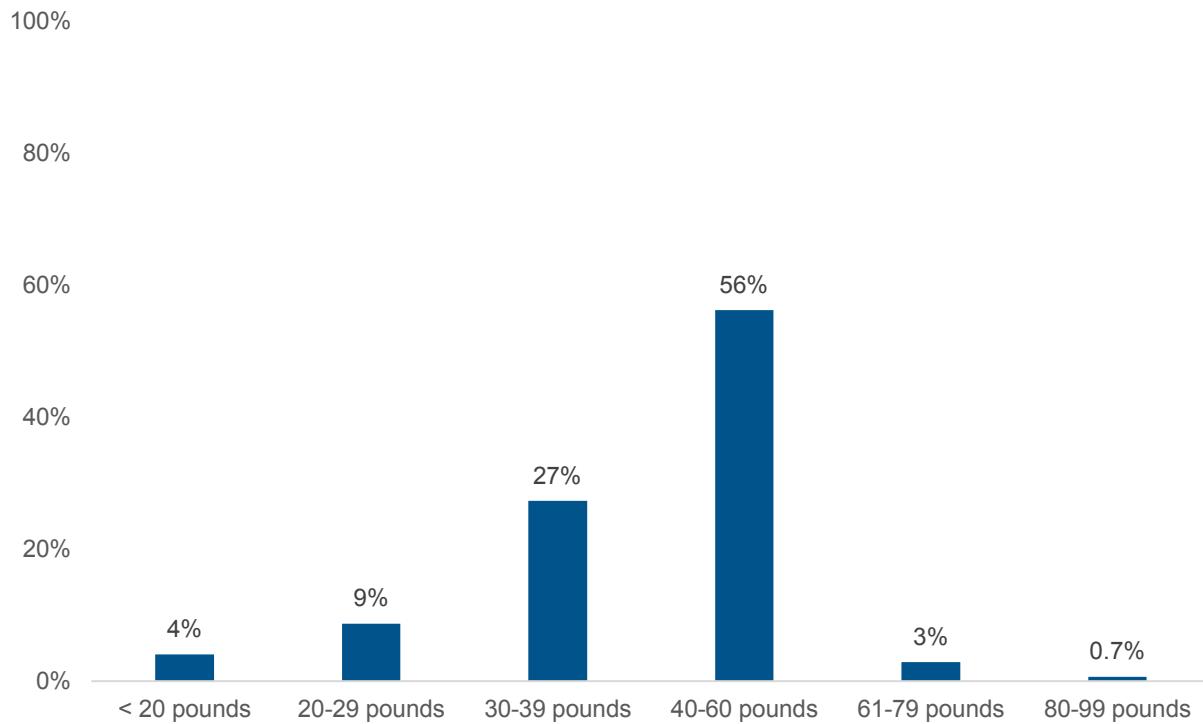


Q78: At what age did you begin using a booster seat for your child?

Base: Caregivers who said they had used a booster seat when driving their child(ren), n = 488.

Unweighted n = 433, missing responses, n = 55.

Figure 60. Weight of Children When First Used Booster Seat



Q79: About how much did the child weigh at the time you began using a booster seat?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.
Unweighted n = 697, missing responses, n = 39.

Miscellaneous Trend Data (1994 – 2016)

This section presents trends in various results across MVOSS survey years 1994 to 2016. Trend analysis was not conducted to support statements regarding significance.

Table 19. Reported “All of the Time” Car Seat Use, by Child’s Weight*

Child’s Weight	1994	1996	1998	2000	2003	2007	2016
<20 lbs.	93%	96%	99%	86%	98%	99%	96%
20-29 lbs.	89%	86%	95%	93%	93%	97%	100%
30-39 lbs.	60%	68%	76%	87%	88%	95%	95%
40-60 lbs.	N/A	N/A	N/A	28%	43%	67%	74%
61+ lbs.	N/A	N/A	N/A	7%	14%	36%	N/A
61-79 lbs.	N/A	N/A	N/A	N/A	N/A	N/A	27%
80-99 lbs.	N/A	N/A	N/A	N/A	N/A	N/A	15%
100+	N/A	N/A	N/A	N/A	N/A	N/A	2%

Q16: How much does [SELECTED CHILD] weigh?

Q20: When you are driving and the [SELECTED CHILD] 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: Caregivers of children under age 6.

Base 2000 – 2007: Caregivers of children under age 9.

Base 2016: Caregivers of children under 13 (Relatives Only, to Compare with Previous Survey Definitions for Trend Purposes), n = 1,061.

*Readers should exercise caution in interpreting the trends due to issues of comparability of data.

Table 20. Reported “All the Time” Car Seat Use, by Child’s Age*

	1994	1996	1998	2000	2003	2007	2016
Child’s Age							
<1 year	88%	96%	98%	87%	95%	98%	91%
1 year	86%	89%	99%	95%	94%	98%	95%
2 years	85%	91%	95%	96%	98%	99%	92%
3 years	56%	75%	80%	89%	91%	96%	84%
4 years	33%	33%	46%	66%	80%	95%	82%
5 years	17%	17%	22%	35%	59%	81%	83%
6 years	N/A	N/A	N/A	14%	35%	67%	76%
7 years	N/A	N/A	N/A	8%	16%	47%	64%
8 years	N/A	N/A	N/A	4%	8%	21%	45%
9 years	N/A	N/A	N/A	N/A	N/A	N/A	18%
10 years	N/A	N/A	N/A	N/A	N/A	N/A	16%
11 years	N/A	N/A	N/A	N/A	N/A	N/A	9%
12 years	N/A	N/A	N/A	N/A	N/A	N/A	7%

Q9a: What is the age of the (CHILD)?

Q20: When you are driving and the [SELECTED CHILD] 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: Caregivers of children under age 6.

Base 2000-2007: Caregivers of children under age 9.

Base 2016: Caregivers of children under 13 (Relatives Only, to Compare with Previous Survey Definitions for Trend Purposes), n = 1,061.

* Readers should exercise caution in interpreting the trends due to issues of comparability of data.

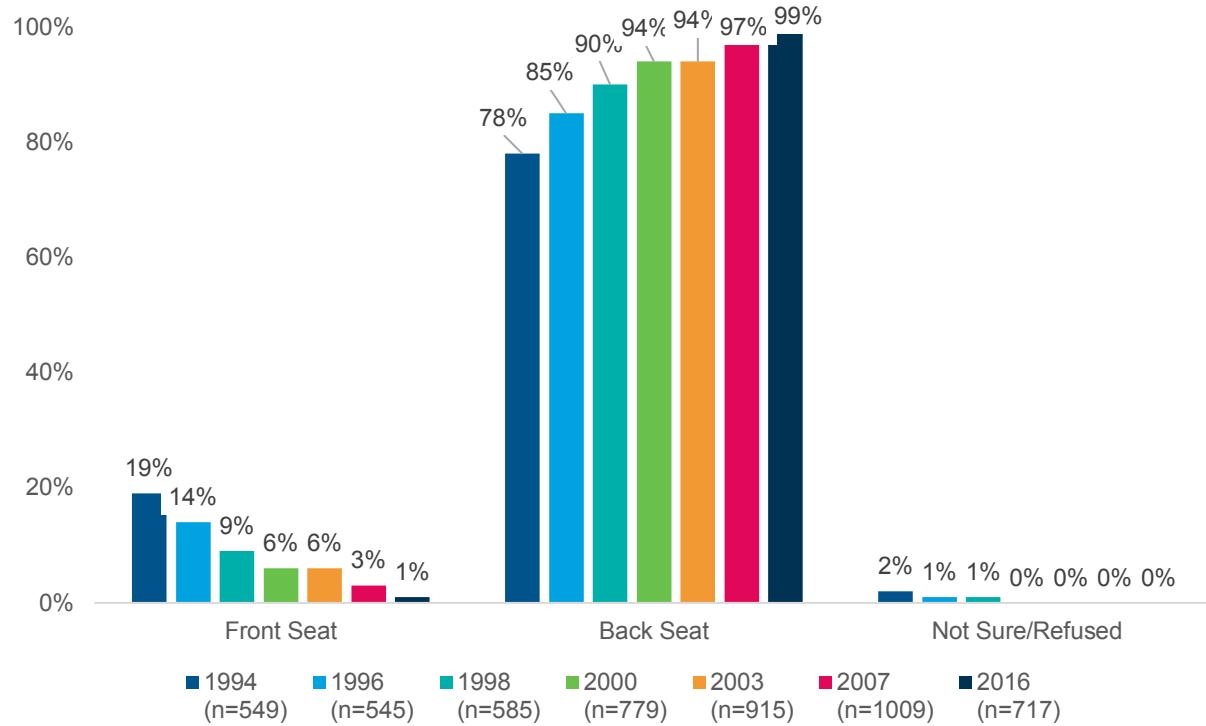
Table 21. Went to an Inspection Station: 1994 – 2016

	1994	1996	1998	2000	2003	2007	2016 (n=729)
Response							
Yes	N/A	N/A	N/A	13%	22%	26%	23%
No	N/A	N/A	N/A	87%	78%	73%	77%

Q53: 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 a car seat or buckling in your child?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.

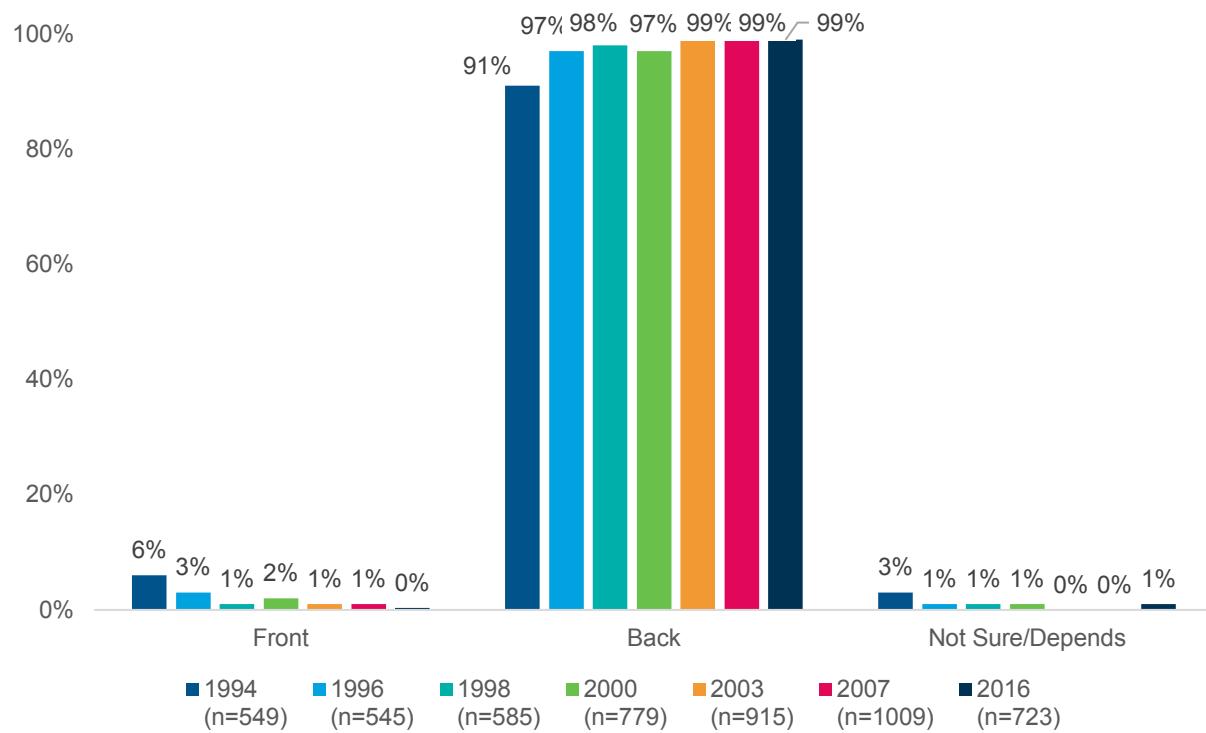
Figure 61. Placement of Child's Car Seat: 1994 – 2016



Q27: When you are driving and the [SELECTED CHILD] rides in the car seat, is he/she usually in the front seat or the back seat?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.

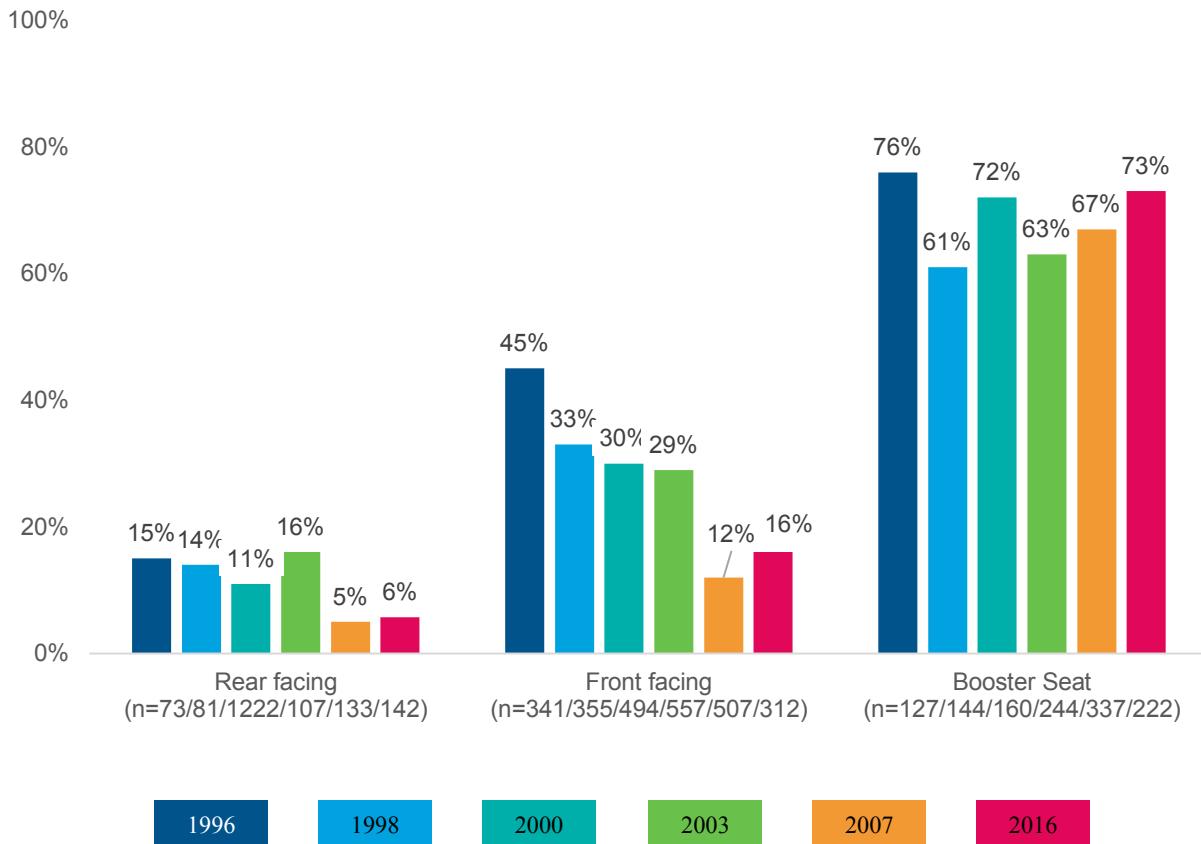
Figure 62. The Safest Place in the Car for the Car Seat: 1994 – 2016



Q30: Where would you say it is safest to place a car seat in the vehicle: in the front seat or in the back seat?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.

Figure 63. Expect Child to Use Seat Belts After Outgrowing Current Car Seat: 1994 – 2016



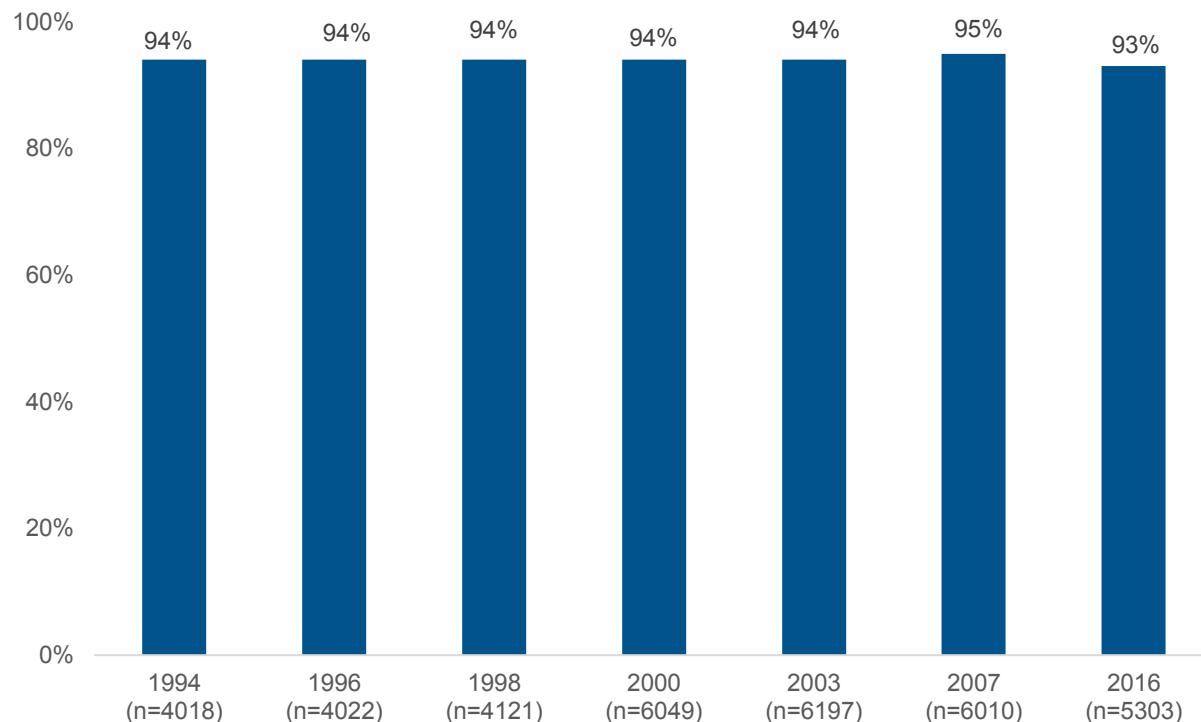
1996 – 2003: When your [SELECTED CHILD] outgrows his/her current child car seat, do you expect him/her to use a different type of car seat, a seat belt, or something else?

2007: When your [SELECTED CHILD] outgrows his/her current child car seat, do you use a different type of car seat, a booster seat, or seat belt only?

2016: Q82: When your [SELECTED CHILD] year old outgrows his/her current car seat, what do you expect him/her to use when riding in a motor vehicle?

Base: Child uses car seat at least on occasion (all of the time, most of the time, some of the time, or rarely), n = 736.

Figure 64. Children Should Be Required to Wear Seat Belts When They Have Outgrown Car Seats: 1994 – 2016



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

1998 – 2000, 2016: Q85: What about when children outgrow a car seat? Do you agree or disagree that they should be required by law to wear seat belts when riding in a vehicle?

2003 – 2007: What about when children outgrow a 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?

2016 Q85: What about when children outgrow a car seat? Do you agree or disagree that they should be required by law to wear seat belts when riding in a vehicle?

Base: Total population 18+, n = 5,410.

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