

OKLAHOMA STATEWIDE CHILD RESTRAINT SURVEY

2021



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EXECUTIVE SUMMARY

This report compares the use of child restraints (car seats and safety belts) in passenger vehicles in Oklahoma across recent years: 2016, 2017, 2018, 2019, and 2021 (no survey was conducted in 2020 due to COVID). Visual observations were made at 100 different locations selected on the basis of geography, population, and urban versus non-urban status. Drivers and all child passengers were observed to determine restraint usage. Twenty-five children were observed at each of the 100 sites on one specified date per site, yielding a statewide total of 2,500 observations in each year.

The 2021 Child Restraint Survey was consistent with the Child Passenger Restraint System Act effective November 1, 2015.

Percent Restrained by Year

	2016	2017	2018	2019	2021
Combined Rate	92.0	91.8	91.1	89.3	91.8

The results from 2021 showed generally consistent findings in comparison to the previous four surveys. Detailed results of all findings are included in the report, but the findings can be summarized as follows:

- Overall, 91.8% of children were restrained during the 2021 survey. The rates, however, have been reasonably consistent across the last five surveys varying between 89.3% and 92.0%.
- Both urban and rural rates increased from the previous survey. Metro areas had slightly higher (92.1%) usage rates than did the rural areas (91.5%).
- Differences in regional usage were not large. Two regions had usage rates below 90% (the Southwest region was 87.4% and the Northwest was 89.1%).
- In terms of the vehicle type, consistent with previous years, pickup trucks were found to have lower restraint rates (85.9%) than other vehicle types (92.8%). This gap reduced slightly from recent years.
- Examining the child's location in the vehicle yields two separate findings. First, children in the front seat were much less likely (79.9%) than children in the back seat (94.0%) to be restrained. In addition, children who were rear-facing (99.6%) were much more likely to be restrained than children who were forward-facing (90.9%).
- The largest difference in child restraint rates was whether the driver was restrained. When the driver was restrained, 97.0% of the children in those vehicles were also restrained. Children with unrestrained drivers, however, had a restraint rate of 59.4%. Whether the driver is restrained remains the most reliable predictor of child restraint.

OKLAHOMA CHILD RESTRAINT OBSERVATION STUDY: 2021

INTRODUCTION

This report is the 33rd statewide observation study of the use of child restraints in Oklahoma. The study was conducted by the University of Central Oklahoma (UCO), College of Education and Professional Studies (CEPS), Department of Adult Education and Safety Science (AESS), Industrial Safety program under contract with the Oklahoma Highway Safety Office (OHSO). Observations occurred during summer 2021.

The Institute for Public Affairs developed the survey instrument (Appendix A) using various sources, including but not limited to the National Highway Traffic Safety Administration's (NHTSA) 1983 Guidelines for Conducting a Survey of the Use of Safety Belts and Child Safety Seats, and NHTSA publications: Are You Using It Right? (IP0040), and Child Transportation Safety Tips (IP0835). The observation survey instrument includes:

- The use or non-use of child restraint devices, the type of restraint used based upon the position a child is facing in the vehicle, (forward-facing, rear-facing, seat belt ONLY),
- The location of the child in the vehicle, vehicle type, and the driver's use or non-use of a seat belt.

For continuity purposes, the UCO, CEPS, AESS Industrial Safety program used the survey instrument (Appendix A) developed by the Institute of Public Affairs at the University of Oklahoma. Some modifications have occurred based upon amendments to the Oklahoma Child Passenger Restraint System Act.

BACKGROUND

In March 1983, the Oklahoma Legislature approved H.B. 1005 which required the use of "a passenger restraint system or a properly secured seat belt for children up to the ages of four or five." The law provided that if a motorist with children was observed to be in violation of the law, a law enforcement officer had the discretion to stop the motorist and give the violator a "verbal warning" on the dangers of non-restraint. The statute granted no enforcement or punitive measures for use by the law enforcement officer.

Amendments to the law in 1987 strengthened the 1983 Child Passenger Restraint System Act by providing penalties and fines for violators who failed to properly protect child passengers in their vehicles. The law was amended again in 2004 (S.B.1224) to increase the age of children from four to six years of age who are required to be transported using a child restraint system. The 2004 amendments also state children at least six years of age but younger than 13 years of age shall be protected by the use of a child restraint system or a seat belt.

The most recent amendments to the law in 2015 brought the Child Passenger Restraint System Act more in line with recommendations of the American Academy of Pediatrics as follows:

- A child under *eight (8)* must be properly secured in a child passenger restraint system. The law previously applied only to children under age six (6).
- *0-2 years*: Must be in a rear-facing car seat until at least two (2) years of age, or until the

child reaches the weight or height limit of the car seat.

- *2-4 years*: Must be in a car seat until at least four (4) years of age.
- *4-8 years*: Must be in a car seat or child booster seat until at least eight (8) years of age unless the child is taller than 4'9".
- *8 years or taller than 4'9"*: Must be in a seat belt.

	2016	2017	2018	2019	2021
Combined Rate	92.0	91.8	91.1	89.3	91.8
Metropolitan	92.1	90.8	91.9	89.8	92.1
Rural	91.8	93.8	90.0	88.6	91.5

Percent Restrained by Region

	2016	2017	2018	2019	2021
Combined Rate	92.0	91.8	91.1	89.3	91.8
Oklahoma City	92.0	91.1	90.9	92.2	92.4
Oklahoma City Metro	92.0	86.5	92.4	89.8	93.8
Tulsa	92.8	94.1	90.4	86.4	92.3
Tulsa Metro	86.9	87.4	93.7	87.4	90.9
Northeast	86.0	91.3	89.8	90.9	93.1
Southwest	94.3	91.1	90.3	88.9	87.4
Southeast	98.8	96.0	90.8	82.0	94.4
Northwest	96.6	98.3	93.7	96.0	89.1

Percent Restrained by Vehicle Type

	2016	2017	2018	2019	2021
Combined Rate	92.0	91.8	91.1	89.3	91.8
Car/SUV/Van	92.6	92.0	92.4	90.5	92.8
Pickup	87.9	90.6	83.2	80.5	85.9

Percent Restrained by the Child's Location

	2016	2017	2018	2019	2021
Combined Rate	92.0	91.8	91.1	89.3	91.8
Front Seat	83.3	85.9	81.8	78.2	79.9
Back Seat	93.6	93.0	93.0	91.6	94.0

Percent Restrained by Direction Child is Facing

	2016	2017	2018	2019	2021
Combined Rate	92.0	91.8	91.1	89.3	91.8
Facing Forward	90.9	90.7	89.9	88.2	90.9
Rear Facing	99.7	98.9	99.7	98.2	99.6

Percent Restrained by Driver Belted or Not

	2016	2017	2018	2019	2021
Combined Rate	92.0	91.8	91.1	89.3	91.8
Driver Belted	96.5	96.4	96.0	95.3	97.0
Driver not Belted	58.8	65.2	63.1	55.2	59.4

SUMMARY

The results of the 2021 survey can be summarized as follows:

- The statewide rate for observed child restraint use was 91.8%. This result reversed a slowly decreasing trend in recent surveys.
- Children traveling in automobiles were more likely to be restrained (92.8%) than those riding in pickup trucks (85.9%). This gap reversed a recent pattern of growing gaps due to an improvement in rates for pickup trucks.
- Examining the child's location in the vehicle yields two separate findings. First, children in the front seat were much less likely (79.9%) than children in the back seat (94.0%) to be restrained. In addition, children who were rear-facing (99.6) were much more likely to be restrained than children who were forward-facing (90.9%).
- Like previous surveys, the most striking distinction was in the difference between the safety of children riding in vehicles when the driver was using a seat belt (97.0% restrained) than when the driver was not belted (59.4% restrained) - a 37.6% difference (down from a 40.1 percentage point difference in the previous survey). This gap remains the best predictor of whether the child will be restrained or not.
- In terms of region, the results were fairly consistent. The Southwest (87.4%) and Northwest (89.1%) parts of the state were the only two regions below 90%.
- Both urban and rural use showed small increases. Metro areas had higher (92.1%) usage rates than did the rural areas (91.5%).

REFERENCES

- James, Thomas and Matthew Krimmer. 2008. *Statewide Child Restraint Survey, 2008*: Norman, OK: The University of Oklahoma, Institute for Public Affairs. July
- Kindelberger, John and Marc Starnes. 2003. *Moving Children from the Front Seat to the Back Seat: The Influence of Child Safety Campaigns*. DOT HS 809 698. Washington, D.C.: National Highway Traffic Safety Administration, National Center for Statistics and Analysis.
- National Highway Traffic Safety Administration, National Center for Statistics and Analysis.
2015. *Traffic Safety Facts Lives Saved in 2014 by Restraint Use and Minimum-Drinking-Age Laws*. DOT HS 812 218. Washington, D.C.: National Center.
- Guidelines for Conducting A Survey of the Use of Safety Belts and Child Safety Seats. Washington, D.C.: National Center, 1983.
- Are YOU Using It Right?* Washington, D.C.: National Center. IP0040, 2000.
- Child Transportation Safety Tips*. Washington, D.C.: National Center. IP0835, 2000.
- Oklahoma Highway Safety Office, August 2016. *Child Passengers, Infant to Age 12, in Crashes (2015), Fact Sheet*. https://ok.gov/ohso/documents/FS2015_ChildPassenger.pdf.
- Pickrell, Timothy and Tony Jianqiang Ye. 2009. *Child Restraint Use in 2008 – Overall Results*. DOT HS 811 135. Washington, D.C.: National Highway Traffic Safety Administration, National Center for Statistics and Analysis. May.

APPENDIX A
Oklahoma Child Restraint Observation Form

County: _____

Site # & Location: _____

Observer: _____ Date: _____ Start Time: _____ End Time: _____

If location changed, indicate where you were when you observed. If you moved during the observation period to another location, indicate that below, in addition to identifying the site # to which you relocated.

After 1 hour, I changed location to: _____ within 1 mile of the original site locale.

INFANT OR CHILD				DRIVER	
	Location of Child 1=Front 2=Back	Child Protection 1=Car Seat 2=Belted 3=No Protection	Child Facing 1=Front 2=Back	Vehicle 1=Car 2=Pickup	Belted 1=Yes 2=No 9=unknown
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					

INFANT OR CHILD				DRIVER	
	Location of Child 1=Front 2=Back	Child Protection 1=Car Seat 2=Belted 3=No Protection	Child Facing 1=Front 2=Back	Vehicle 1=Car 2=Pickup	Belted 1=Yes 2=No 3=Unknown
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Please add any comments, corrections, or additional observation dates (including start and end times) if applicable:

:

APPENDIX B METHODOLOGY

The methodology employed to conduct the child restraint survey was based on several considerations:

- The approach followed should conform to NHTSA recommendations described in the 1983 Guidelines for Conducting a Survey of the Use of Safety Belts and Child Safety Seats.
- Only privately-owned passenger vehicles (including vans and pickups) were observed, consistent with the requirements of the state law.
- All children were counted. The 2015 amendments to the law require all children from birth to age 8 be in an approved "child passenger restraint system" whether in the front or back seat. Given the limitations of observing children in a few seconds at roadway intersections and shopping malls, no distinction was made between the ages of children or whether the restraint was "proper". Thus, if a child was restrained in the front or back seat, it was recorded as a restrained observance. Observers also recorded the type of device being utilized as forward-facing, rear-facing, or seat belt only.
- Drivers would be counted because of their culpability under the law and to permit a comparison to the statewide surveys of automobile safety belt use.
- In part because of procedures established when earlier child restraint surveys were conducted, the actual mode of observation would follow both a training manual prepared by the Institute for Public Affairs under a previous contract with OHSO and NHTSA's Guidelines.
- A modified random selection of sites was used that assured an adequate dispersion of sites geographically and by a metropolitan/non-metropolitan division.

General Site Selection

The total number of observation sites selected was first determined by a division of the state by metropolitan statistical area (MSA) and non-MSA classification. Using Census data for 2000, 60.8% of the state's population resides in an MSA.

One hundred randomly chosen sites with 25 observations per site were selected, yielding a sample size of 2,500. Of these 100 sites, 57 were in MSAs and 43 were in non-MSAs. Assignment for sites within the MSAs was based on the weighing of a particular MSA's population against the total metropolitan population in the state (less the Ft. Smith, Arkansas MSA). Using this criterion, the Oklahoma City MSA was assigned the greatest number of sites (29). Enid, being the smallest MSA, had the fewest sites (2).

The non-MSA remainder of the state was divided into four quadrants using the two principle north-south and east-west arterial highways bisecting the state, Interstate Highway 35 (I-35, north-south) and Interstate Highway 40 (I-40, east-west). Each quadrant was allotted its proportionate number of the 43 remaining sites based on its share of the state's population. Certain unusual site determinations resulted from the procedure outlined above.

The 100 observation sites were chosen as follows:

Oklahoma City and Metro	29
Tulsa and Metro	22
Enid	2
Lawton	4
Non-MSA	<u>43</u>
	100

Specific Site Selection

The sites were chosen in the following manner:

- City maps were used to provide a geographical distribution of sites in each city. Further, U.S. Bureau of the Census population data were used to capture an adequate measure of the socioeconomic and racial mix of each city;
- Tentative locations chosen for both their suitability and accessibility by the general population were designated;
- Field checks by survey teams were then made to ascertain the suitability of each tentative site. Shopping malls, fast food restaurant chains, department store chains, and recreation facilities were selected based on the following characteristics:
 - a) accessibility by the general population to the selected site;
 - b) accessibility to vehicular traffic;
 - c) sufficient traffic volume existing to generate 25 observations of children in cars;
 - d) locations represented the regional variations in socioeconomic and racial characteristics;

The observer was advised that upon arrival at a specific observation site a determination should be made as to its suitability following the criteria enumerated above. If the pre-assigned site was not suitable, the observer was permitted to make another selection that would be more satisfactory. In most cases when a change was necessary, a site within one mile of the original site was used.

The following lists the specific communities and exact locations where child restraints were observed:

Site	Location	Area
1	OKC: Walmart Supercenter (NW 136/Memorial & N Penn)	OKC
2	OKC:Walmart (I-44 & Classen) Belle Isle Blvd.	OKC
3	OKC: Academy Sports (I-240 at SW 74th)	OKC
4	OKC:Walmart Market (2217 N. Penn @ NW 23rd)	OKC
5	OKC: McDonald's / Walmart (SW 59th at Penn)	OKC
6	OKC: Walmart Neighborhood Market (SW 44th & Western)	OKC
7	OKC: Walmart Supercenter (I-240 at Santa Fe)	OKC
8	OKC: Winnco Foods @ NW 39th & Portland	OKC
9	OKC: Target (7012 NW Expressway & Rockwell)	OKC
10	OKC: Science Museum (2100 NE 50th)	OKC
11	OKC: Sonic/McDonald's (5815 Martin Luther King Blvd)	OKC
12	OKC: McDonald's (6700 N. May)	OKC
13	OKC: McDonald's (10809 N May at Hefner Road)	OKC
14	OKC: McDonald's (5812 NW Expressway)	OKC
15	OKC: McDonald's (113 NW 23rd)	OKC
16	OKC: Braum's (I-240 at S May)	OKC
17	OKC: Oklahoma City Zoo (2101 NE 50th)	OKC
18	OKC: OnCue (5920 S Western)	OKC
19	Edmond: Braum's/Walmart (15th at I-35)	OKC Metro
20	Edmond: Super Target (1200 E 2nd St)	OKC Metro
21	Norman: Walmart Supercenter (Main at I-35 - 333 N Interstate Dr)	OKC Metro
22	Norman: Super Target (Robinson at I-35) (1400 24th Ave NW)	OKC Metro
23	Norman: Walmart Supercenter (Main at 601 12th Ave NE)	OKC Metro
24	Midwest City: McDonald's (7025 SE 15th)	OKC Metro
25	Midwest City: Walmart Supercenter (9001 NE 23rd)	OKC Metro
26	Moore: Walmart (501 SE 19th at I-35)	OKC Metro
27	Mustang: McDonald's (I-40 at Mustang Rd)	OKC Metro
28	Yukon: McDonald's (31 W Main)	OKC Metro
29	Bethany: McDonald's (7061 NW 23rd)	OKC Metro
30	El Reno: McDonald's (2424 S Country Club Dr.)	OKC Metro
31	Guthrie: On Cue (I-35 @ Waterloo)	NE
32	Noble, OK (McDonald's, 3525 W. Tecumseh Road)	OKC Metro
33	Tulsa: Walmart (6625 S Memorial Dr.)	Tulsa
34	Tulsa: Walmart (81st at S Lewis)	Tulsa
35	Tulsa: Quik Trip @ 41st & Memorial	Tulsa

36	Tulsa: Quick Trip (12910 E 21st St)	Tulsa
37	Tulsa: Tulsa Promenade Mall (41st Street at Yale)	Tulsa
38	Tulsa: Quick Trip (1302 S Garnett Rd)	Tulsa
39	Tulsa: Reasor's (15th & Lewis)	Tulsa
40	Tulsa: Big Splash Water Park/Centennial Wayne Plaza (21st St at Yale)	Tulsa
41	Tulsa: Walmart (6310 S Elm Place)	Tulsa
42	Tulsa: Quick Trip (3304 W 42nd Pl)	Tulsa
43	Tulsa: Super Mercado Morelos, 5147 S. Peoria Ave. @ 51st	Tulsa
44	Tulsa: McDonald's (4935 S Memorial)	Tulsa
45	Tulsa: McDonald's (4249 S Yale)	Tulsa
46	Jenks: McDonald's (605 W Main)	Tulsa
47	Tulsa: Wendy's (1905 E 21st at Utica)	Tulsa
48	Broken Arrow: Walmart (2301 W Kenosha)	Tulsa Metro
49	Broken Arrow: McDonald's (3800 S Elm Place)	Tulsa Metro
50	Broken Arrow: McDonald's (2525 N Aspen)	Tulsa Metro
51	Bristow: Walmart (Main at SH 16)	Tulsa Metro
52	Owasso: Smith Farm Market Place, 9055 N. 121st E. Ave.	Tulsa Metro
53	Sand Springs: Walmart (SH 97 @ Marrow Rd)	Tulsa Metro
54	Sapulpa: Walmart (Hwy 117 at US 66)	Tulsa Metro
55	Cushing: Walmart Supercenter (3100 E Main St)	Tulsa Metro
56	Stroud: McDonald's (801 Ada Webb Dr)	Tulsa Metro
57	Chandler: IBC Bank (in front of Walmart) (3108 E 1st St)	Tulsa Metro
58	Enid: McDonald's (Main at Van Buren)	Enid
59	Enid: Oakwood Mall (O.K. Garriott at Oakwood)	Enid
60	Bartlesville: Braum's @ 2526 SE Washington Blvd	NE
61	Bartlesville: Walmart (4000 SE Green Country Rd)	NE
62	Muskogee: Braum's (2909 Old Shawnee Rd)	NE
63	Muskogee: McDonald's (101 S 32nd St)	NE
64	Muskogee: McDonald's (2415 Chandler)	NE
65	Stillwater: Chic-Fil-A (600 E. Hall of Fame)	NE
66	Stillwater: Walmart (Virginia at Perkins Rd)	NE
67	Stillwater: YMCA (131 West Elm Ave.)	NE
68	Seminole: Jasmine Moran Children's Museum (1714 OK-9)	NE
69	Claremore: Walmart, 1500 Lynn Riggs Blvd.	NE
70	Tecumseh: Sonic @ 109 E Walnut St	NE
71	Ponca City: Walmart Supercenter (Prospect Ave)	NE
72	Ponca City: McDonald's (N 14th Street)	NE
73	Shawnee: McDonald's (4849 N Kickapoo St)	SE
74	Cushing: Walmart Supercenter (3100 E Main St)	NE

75	Owasso: Walmart/Kohls, 12405 E. 96th St. N.	E
76	Okmulgee: Walmart (Hwy 75 South)	E
77	Okmulgee: Walmart (1800 S. Wood Dr.)	E
78	Okmulgee: YMCA Swim Center (106 W 13th St)	E
79	Pawhuska: McDonald's (1900 E Main St)	NE
80	Skiatook: Walmart (778 W Rogers Blvd)	NE
81	Wagoner: Walmart (State Hwy 51)	E
82	Coweta: Country Mart (13937 S Highway 51)	E
83	Claremore: Ne-Mar Center (1015 W. Will Rogers)	NE
84	Ft Gibson: Harp's Food Store (1010 E Poplar St)	NE
85	Lawton: Central Mall (2nd at C Streets)	SW
86	Lawton: McDonald's (30 SW Sheridan at Gore)	SW
87	Lawton: Shopping Central Strip Mall - Ross (Sheridan at Gore)	SW
88	Lawton: Walmart Supercenter (Sheridan and Aldi)	SW
89	McAlester: Walmart (Hwy 69 at Comanche)	SE
90	McAlester: McDonald's (1758 E Carl Albert Pkwy)	SE
91	Tecumseh: McDonald's (1210 Gordon Cooper Hwy)	SE
92	Sallisaw: Walmart (1101 W Ruth Ave)	SE
93	Gore: Harp's Grocery (State Hwy 100 at State Hwy 10)	SE
94	Claremore: McDonald's (1710 S. Lynn Riggs Blvd)	SE
95	Ada: Walmart (1419 Country Club Rd.)	SE
96	Sulphur: Walmart Supercenter (2705 W. Broadway Ave)	SW
97	Duncan: McDonald's (1845 N Hwy 81)	SW
98	Anadarko: Walmart (1845 N. Hwy 81)	SW
99	Enid: Starplex Cinema & McDonald's	SW
100	Enid: Walmart Supercenter (5505 W. Owen K. Garriott Rd.)	SW

Comment on Sampling Procedure

As indicated previously, the procedure followed for selecting locations does not produce a strictly random sample. The design employed for this effort does bear some similarity, however, to a multistage cluster sampling procedure, in which samples are taken of groups of elements (clusters) followed by the selection of elements within each selected cluster. In this case, the initial clusters were MSA/non-MSA. Then a further stratification was employed on the basis of geographical regions of the state. Finally, population size and observation site were incorporated into the final selection process. Strictly speaking, the decision to choose one city or town over another was not completely random; however, the procedure followed in selecting observation locations along with total number of sites and observations collected should, in combination, yield a fairly representative picture of the actual proportion of Oklahoma children covered under the law who may or may not be currently protected by either child safety seats or seat belts. The continued use of the procedure and design employed for the initial survey should permit a reasonably accurate assessment of changes in restraint use over time.

Observer Selection and Training

The observers participated in a classroom seminar session in which the nature of the project was discussed followed by a detailed briefing of data collection procedures based on the previously mentioned NHTSA Guidelines (1983) and the Institute for Public Affairs Training Manual (2010). The second training phase involved a field exercise, which required the actual observation of child restraint use at a particular location simulating actual field conditions and the completion of the forms for recording those observations.

Data Collection Procedures

Observers were told to follow the procedures outlined in the Guidelines and Training Manual. The child safety seat observation form was provided for each site (Appendix A). Observers were instructed to:

- 1) Record the date, day of week, and time of observations;
- 2) Record the exact location of each site;
- 3) Record whether or not the child was restrained, the type of restraint, and the direction the child was facing in the vehicle;
- 4) Record the type of vehicle (automobile or pickup); and,
- 5) Record whether or not the driver was belted.

Comment of Historical Analyses

Due to rule changes in 2015, subsequent surveys were analyzed without regard to the age of the child.