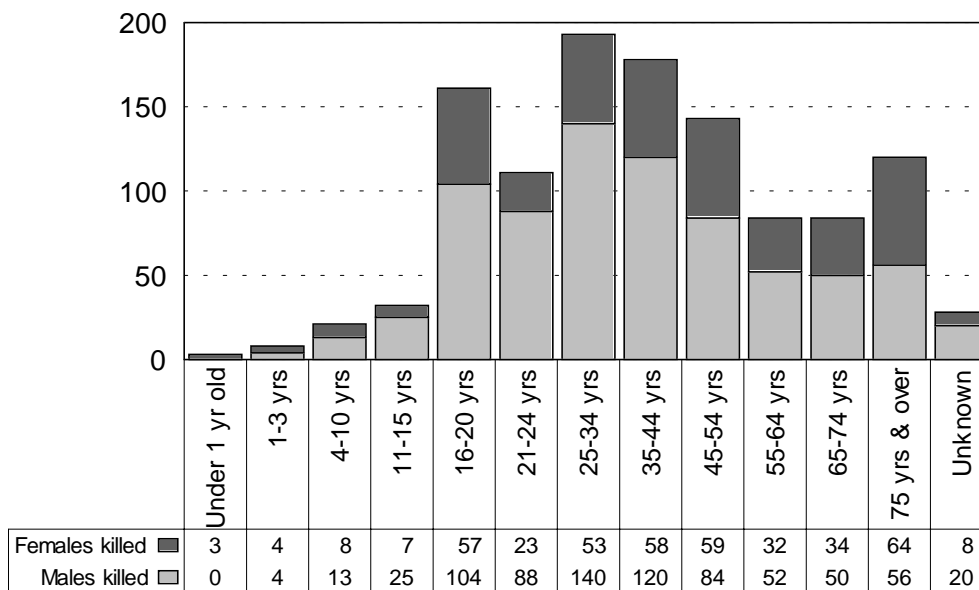


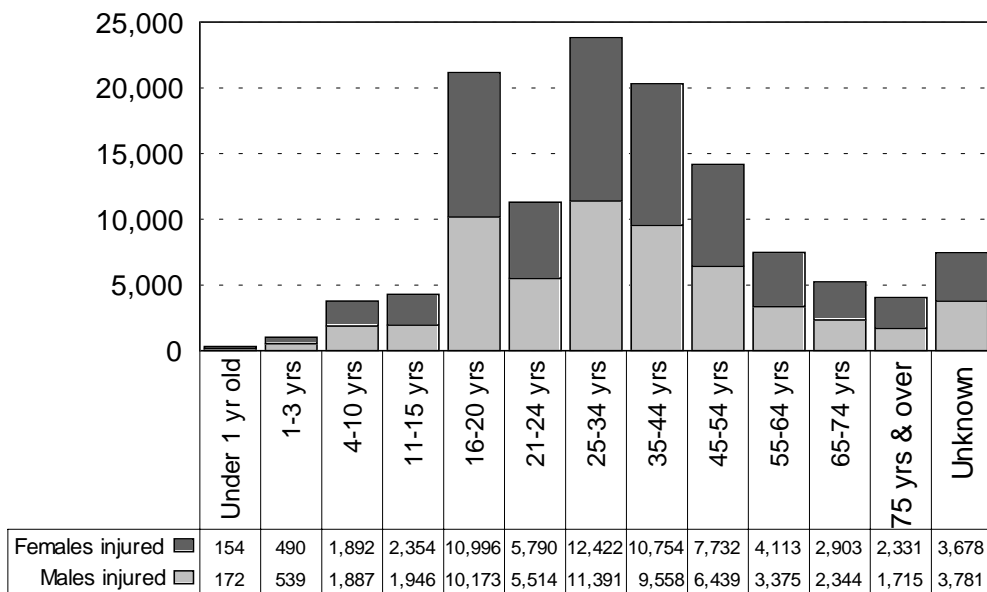
AGE AND GENDER OF OCCUPANTS KILLED & INJURED IN MOTOR VEHICLE CRASHES

Occupants Killed



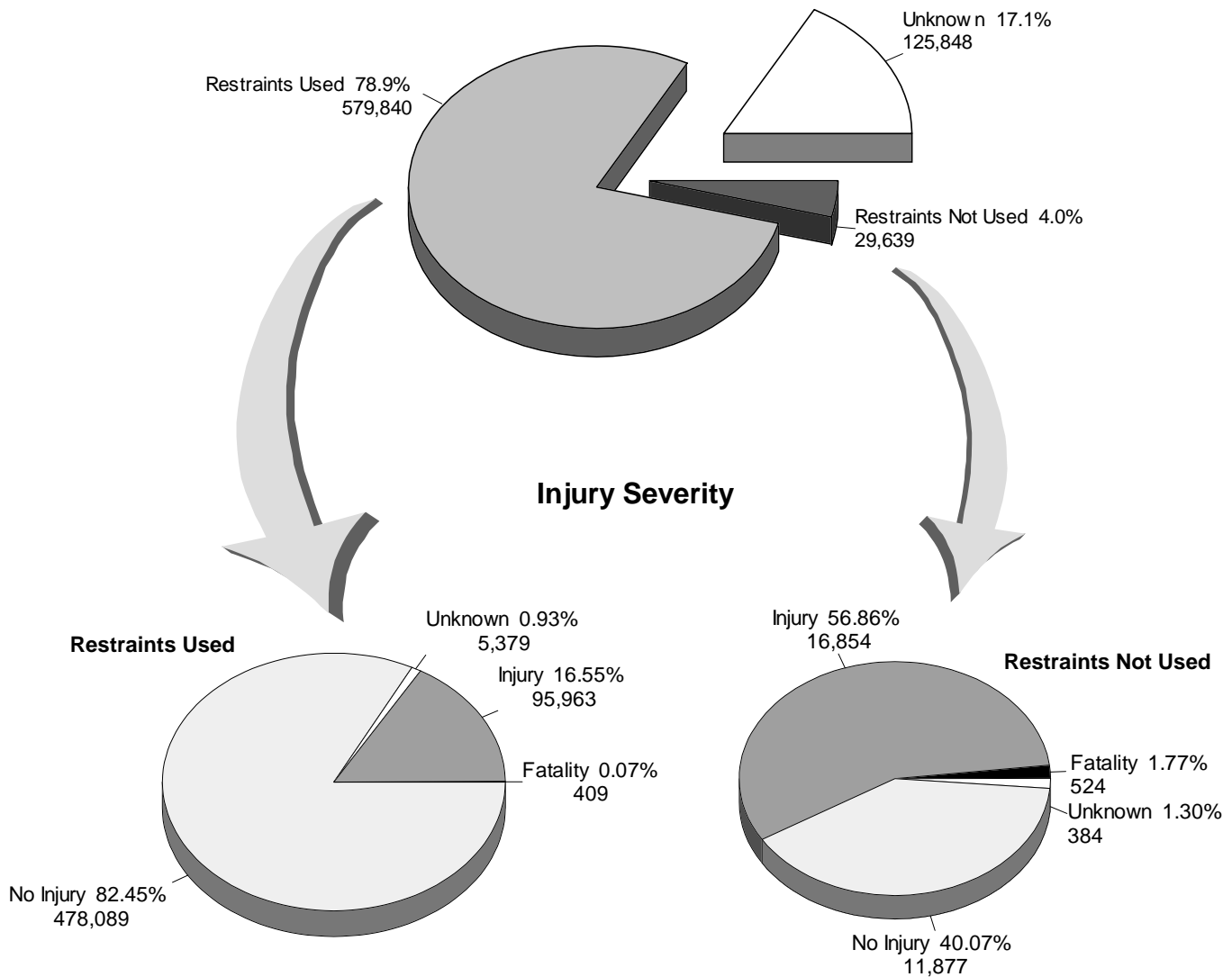
The majority (64.8%) of occupants killed in traffic crashes in 1998 were male.

Occupants Injured



The majority (52.7%) of occupants injured in traffic crashes in 1998 were female.

REPORTED OCCUPANT RESTRAINT USAGE FOR ALL DRIVERS AND INJURED PASSENGERS

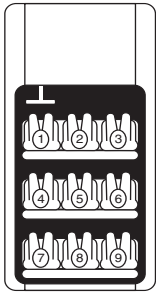


Restraint use by motorists is measured two ways: by what motorists REPORT to police at the scene of a traffic crash (reported usage), and by DIRECT OBSERVATION studies where motorists are totally unaware of the presence of researchers (observed usage). As expected, reported usage is routinely higher than observed usage.

Of the 735,327 drivers and injured passengers involved in crashes, 579,840 (78.9%) were REPORTED to be using occupant restraints.

However, a DIRECT OBSERVATION study by the University of Michigan Transportation Research Institute [15] estimated overall safety belt use was 72.6 percent for passenger cars, 73.1 percent for sport-utility vehicles, 75.7 percent for vans, and 54.1 percent for pickup trucks in 1998.

Occupants in crashes were twenty-five times more likely to be killed if they were not wearing their restraints.



MOTOR VEHICLE OCCUPANTS & INJURY SEVERITY BY SEATING POSITION AND KNOWN BELT USAGE

Seating Position	Belts Used*		Fatal	Injury			PDO
	Number	% of Total		A	B	C	
Left Front	549,206	95.8	293	5,202	14,150	52,026	477,535
Center Front	600	0.1	0	34	151	389	26
Right Front	17,746	3.1	89	1,401	3,683	12,384	189
Left Rear	2,176	0.4	5	140	467	1,435	129
Center Rear	610	0.1	4	68	126	400	12
Right Rear	2,203	0.4	9	164	487	1,540	3
Left Rear Third Seat	316	0.1	1	25	51	213	26
Center Rear Third Seat	139	0.0	0	18	36	80	5
Right Rear Third Seat	321	0.1	1	15	82	220	3
Unknown	121	0.0	0	5	19	30	67
TOTAL	573,438*	100.0	402	7,072	19,252	68,717	477,995

* Lap belt, shoulder belt or a combination of lap and shoulder belts used. Children who were coded as using or not using a child restraint device appear in separate tables on pages 150-151.

* This total does not include 5,371 occupants with unknown injury severity.

Seating Position	Belts Not Used*		Fatal	Injury			PDO
	Number	% of Total		A	B	C	
Left Front	20,887	71.9	366	2,191	3,623	3,492	11,215
Center Front	287	1.0	2	60	101	111	13
Right Front	4,105	14.1	99	842	1,480	1,624	60
Left Rear	1,346	4.6	15	161	285	487	398
Center Rear	396	1.4	7	66	114	202	7
Right Rear	1,062	3.7	13	152	338	559	0
Left Rear Third Seat	145	0.5	2	26	47	69	1
Center Rear Third Seat	87	0.3	1	14	30	41	1
Right Rear Third Seat	170	0.6	4	28	42	88	8
Unknown	573	2.0	14	74	134	253	98
TOTAL	29,058*	100.0	523	3,614	6,194	6,926	11,801

* No belts available or no belts used. Children who were coded as using or not using a child restraint device appear in separate tables on page 150-151.

* This total does not include 371 occupants with unknown injury severity.

*Michigan law requires that all persons must wear a safety belt
when riding in the front seat of a motor vehicle*



REPORTED RESTRAINT USE - CHILDREN

Michigan law requires:

*Any child **under one year of age** riding in either the front or back seat of a vehicle must be in a Child Restraint Device (CRD).*

Sitting in all seats excluding Left Front Seats:

Restraint Usage	Children age 0		Fatal	Injury			No Injury
	Number	% of Total		A	B	C	
Belts Used	51	17.3	0	2	9	40	0
No Belts Used	10	3.4	0	1	3	5	1
CRD Used	210	71.2	2	7	52	149	0
CRD Not Used	14	4.7	1	2	5	6	0
Restraint Failed	0	0.0	0	0	0	0	0
Unknown	10	3.4	0	1	1	8	0
TOTAL	295	100.0	3	13	70	208	1

*Any child between the **ages of one and four** must be in a CRD when riding in the front seat of a vehicle and must either be in a CRD or restrained with a safety belt when riding in the back seat.*

Sitting in the Front Right and Front Center Seats:

Restraint Usage	Children age 1-3		Fatal	Injury			No Injury
	Number	% of Total		A	B	C	
Belts Used	112	54.4	0	4	31	77	0
No Belts Used	24	11.7	1	5	7	11	0
CRD Used	33	16.0	0	4	5	24	0
CRD Not Used	20	9.7	0	2	11	7	0
Restraint Failed	1	0.5	0	0	0	1	0
Unknown	16	7.8	0	1	8	7	0
TOTAL	206	100.0	1	16	62	127	0

REPORTED RESTRAINT USE - CHILDREN (continued)

Sitting in the Rear Seats and Other:

Restraint Usage	Children age 1-3		Fatal	Injury			No Injury
	Number	% of Total		A	B	C	
Belts Used	248	30.7	1	25	65	157	0
No Belts Used	63	7.8	1	8	23	31	0
CRD Used	425	52.5	4	25	116	280	0
CRD Not Used	26	3.2	0	7	9	10	0
Restraint Failed	2	0.2	0	0	2	0	0
Unknown	45	5.6	1	11	11	22	0
TOTAL	809	100.0	7	76	226	500	0

*Any child between the **ages of four and sixteen** must wear a safety belt when riding in either the front or back seat of a vehicle.*

Sitting in all seats excluding Left Front Seats:

Restraint Usage	Children age 4-15		Fatal	Injury			No Injury
	Number	% of Total		A	B	C	
Belts Used	5,405	71.7	20	402	1,354	3,629	0
No Belts Used	1,598	21.2	21	285	535	757	0
CRD Used	83	1.1	0	4	24	55	0
CRD Not Used	25	0.3	0	5	10	10	0
Restraint Failed	2	0.0	0	1	0	1	0
Unknown	430	5.7	8	79	135	205	3
TOTAL	7,543	100.0	49	776	2,058	4,657	3

Note: Safety equipment usage is often self-reported and may not reflect actual usage.

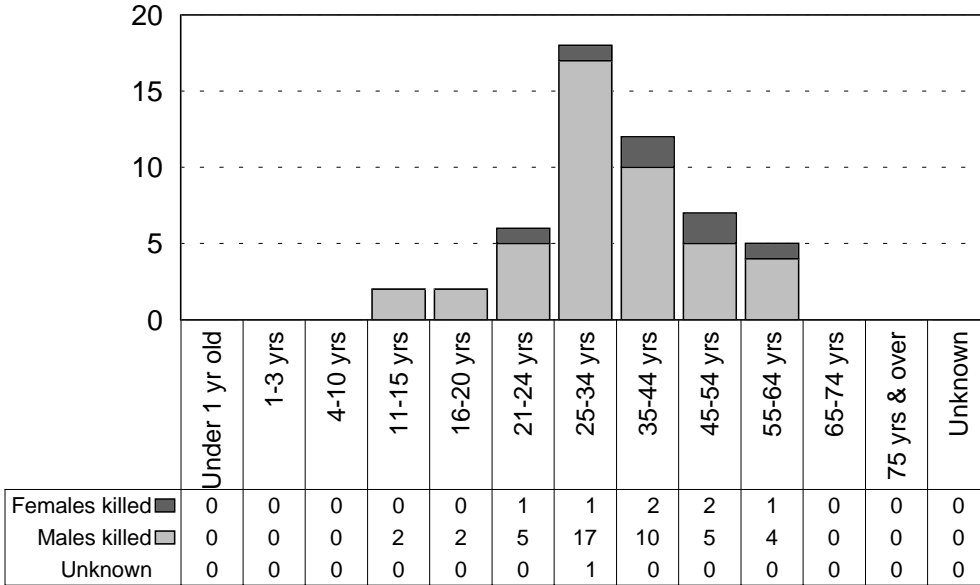
In a pilot study of Child Restraint Device (CRD) use and misuse in Michigan [16] at the University of Michigan Transportation Research Institute, researchers discovered at least some degree of improper CRD use in 88.5 percent of case studies.

The driver of the vehicle will receive a citation for any child not restrained.

Placing a CRD in the front seat is not recommended in vehicles with passenger side airbags.

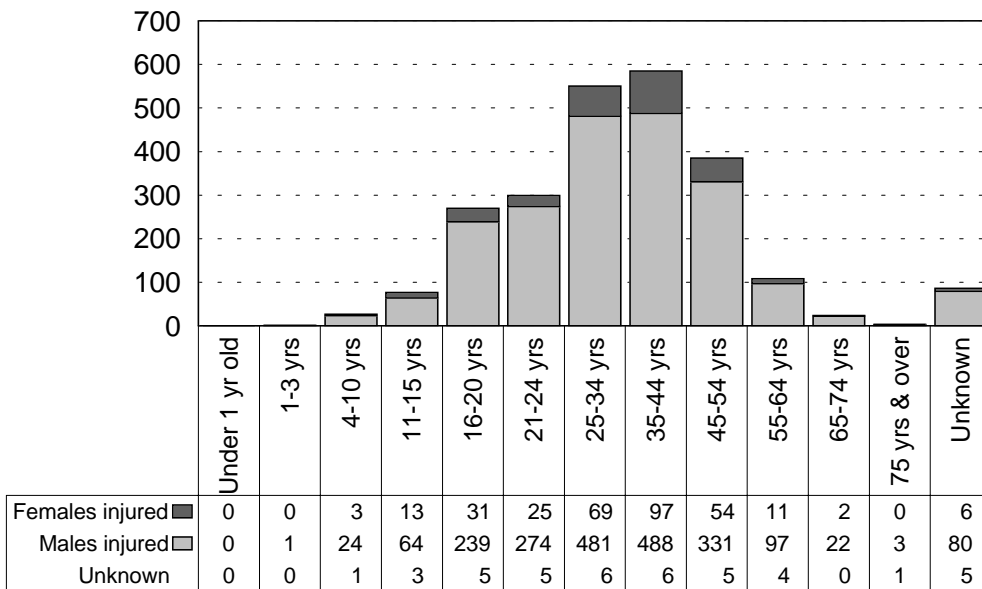
AGE AND GENDER OF MOTORCYCLISTS KILLED & INJURED IN MOTOR VEHICLE CRASHES

Motorcyclists Killed



84.9 percent of the motorcyclists killed in traffic crashes in 1998 were male.
 In comparison, 63.9 percent of all persons killed in crashes were male.

Motorcyclists Injured



85.7 percent of the motorcyclists injured in traffic crashes in 1998 were male.
 In comparison, 45.6 percent of all persons injured in crashes were male.

MOTORCYCLE HELMET USE AND INJURY SEVERITY

Helmet Worn Age of Motorcyclist	Fatality	Injury			No Injury
		A	B	C	
3 years and under	0	1	0	0	0
4 - 10 years	0	0	5	4	1
11 - 15 years	2	11	14	8	3
16 - 20 years	2	50	91	45	49
21 - 24 years	4	57	88	54	49
25 - 34 years	13	105	158	94	106
35 - 44 years	9	115	161	118	118
45 - 54 years	5	97	116	72	71
55 - 64 years	5	27	33	19	21
65 - 74 years	0	7	6	2	3
75 years and over	0	1	1	0	0
Unknown	0	0	2	2	0
Subtotal	40	471	675	418	421



Drivers killed 35
Passengers killed 5

Helmet Not Worn Age of Motorcyclist	Fatality	Injury			No Injury
		A	B	C	
3 years and under	0	0	0	0	0
4 - 10 years	0	2	1	1	1
11 - 15 years	0	4	5	7	3
16 - 20 years	0	5	9	6	3
21 - 24 years	1	2	7	2	0
25 - 34 years	2	8	7	3	2
35 - 44 years	2	10	9	3	0
45 - 54 years	1	2	4	2	0
55 - 64 years	0	0	0	0	1
65 - 74 years	0	1	0	0	0
75 years and over	0	0	0	1	0
Unknown	0	1	0	0	0
Subtotal	6	35	42	25	10

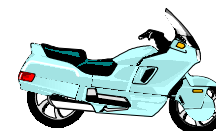


Drivers killed 5
Passengers killed 1

Helmet Use Unknown Age of Motorcyclist	Fatality	Injury			No Injury
		A	B	C	
3 years and under	0	0	0	0	1
4 - 10 years	0	5	6	4	1
11 - 15 years	0	8	9	14	6
16 - 20 years	0	15	29	25	16
21 - 24 years	1	25	43	26	33
25 - 34 years	4	37	76	68	70
35 - 44 years	1	37	79	59	58
45 - 54 years	1	25	42	30	24
55 - 64 years	0	4	22	7	14
65 - 74 years	0	1	4	3	1
75 years and over	0	0	1	0	0
Unknown	0	27	32	27	38
Subtotal	7	184	343	263	262
TOTAL	53	690	1,060	706	693

In Michigan, helmet use law (Michigan Vehicle Code Public Act 300 of 1949, Section 257.658) requires that all motorcycle riders wear a helmet. As a result, according to studies by UMTRI [17], approximately 99 percent of the motorcyclists in Michigan wear helmets when riding. The fact that most fatalities (where helmet use is known) are wearing their helmets does not indicate that helmets are not an effective safety device.

OCCUPANT INJURY OUTCOME BY VEHICLE TYPE



Vehicle Types	Killed	A Injured	B Injured	C Injured	Total KABC	% of All Crash Involved KABC Occupants
Passenger Car and Station Wagon	835	9,219	21,533	64,499	96,086	76.5
Van (Minivan) and Motorhome	69	874	1,974	6,065	8,982	7.2
Pickup	150	1,571	3,550	8,214	13,485	10.7
Small Truck (under 10,000 lbs.)	14	201	518	1,206	1,939	1.5
Motorcycle	53	670	1,007	664	2,394	1.9
Moped	2	64	74	66	206	0.2
Go Cart	0	5	0	4	9	0.0
Snowmobile	21	91	74	49	235	0.2
Off Road Vehicle	4	62	58	33	157	0.1
Other	4	34	48	110	196	0.2
Unknown	3	76	128	415	622	0.5
CDL Truck/Bus (breakdown below)	11	122	272	893	1,298	1.0
TOTAL	1,166	12,989	29,236	82,218	125,609	100.0

Special Note: School bus is not recorded on the UD-10 and cannot be broken out of CDL Truck/Bus.

CDL Truck/Bus Sub-category Types	Killed	A Injured	B Injured	C Injured	Total KABC	% of All Crash Involved KABC Occupants
Commercial Vehicle: Group A	7	68	125	258	458	35.3
Commercial Vehicle: Group B	1	28	77	387	493	38.0
Commercial Vehicle: Group C	0	2	13	50	65	5.0
Other Truck	1	9	27	55	92	7.1
Unknown Truck	2	15	30	143	190	14.6
TOTAL	11	122	272	893	1,298	100.0

Group "A" is any vehicle that is towing a vehicle or trailer that has a gross vehicle weight rating (GVWR) over 10,000 lbs.

Group "B" is any single vehicle (including buses) with a GVWR of 26,001 lbs. or more. This would include a combination of vehicles with a combined GVWR over 26,000 lbs. when towing a trailer that has a GVWR of 10,000 lbs. or less.

Group "C" is any single vehicle with a GVWR of less than 26,001 lbs. or a combination of vehicles having a combined GVWR under 26,001 lbs. when the vehicle is required to display placards for hazardous material or designed to carry 16 passengers (including driver). Group "C" is also any vehicle carrying 15 or less people (including driver) transporting children to or from school and home on a regular basis for compensation.