



ALCOHOL RELATED FATAL MOTOR
VEHICLE TRAFFIC ACCIDENT STUDY

IOWA, 1975

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SUMMARY

1. There were 221 alcohol related fatal traffic accidents out of 578, or 38.2% in 1975. These claimed 256 lives, or 38.0% of the total traffic fatalities.
2. In 1975, 14 pedestrians were killed as a result of alcohol involvement. Seven fatal accidents involved 7 drinking pedestrians killed and 7 involved drinking drivers.
3. Of the 7 drinking pedestrians killed, all except one were of the ages 24 and below, 60% of which occurred during early morning hours and on week-ends.
4. In 1975, 55.2% of alcohol related fatal accidents were single motor vehicle accidents. The mean BAC of drivers involved in single motor vehicle crashes was significantly higher than the mean BAC of drivers involved in multiple motor vehicle fatal crashes.
5. Of the 239 drinking drivers/pedestrians, 153 or 64.0% had blood tests. Mean or average BAC of drivers tested was 0.175 and 83.0% had a BAC of 0.100 percent or more. Data also showed 64.1% had a BAC of 0.150 or more, which shows they were probably problem drivers.
6. Approximately 58.0% of the drinking drivers in fatal traffic accidents were young drivers, 24 years or younger, which exceeds the proportion of drivers already over represented in fatal accidents.
7. Analysis of drinking drivers involved in fatal crashes showed that early morning hours had more accidents (12:00-2:59 A.M.) for both younger and older drivers.
8. Results showed that both the younger and older groups of drinking drivers had more of their accidents during the week-ends. However, further analysis showed that the younger group was involved in significantly more crashes than older drinking drivers.
9. Study also showed younger drivers had lower levels of alcohol in their blood,

ALCOHOL RELATED FATAL MOTOR VEHICLE ACCIDENT STUDY: IOWA, 1975

1.0 Objectives:

This report is a continuing study of alcohol related fatal traffic accidents in the State of Iowa from year to year.

The primary objective is to ascertain and evaluate the proportion of alcohol related fatal accidents. The secondary objective is to present information on the characteristics of alcohol related fatal traffic accidents and to examine the extent of drinking pedestrian involvement, as well as information necessary for planning a counter-measures program.

2.0 Sources of Data:

Data were collected from investigated fatal motor vehicle accident reports. A fatal accident is alcohol related if the investigating officer reports that the driver or pedestrian had been drinking and if the degree of drinking was classified under the following categories and possibly verified by a blood test.^{1/}

(1) Ability impaired.

(2) Ability not impaired.

3.0 Number of Alcohol Related Fatal Accidents and Fatalities: Iowa, 1975

In 1975, 221 or 38.2% of the 578 fatal traffic accidents in the state were alcohol related. These claimed 255 fatalities or 37.8%. Table 1 shows that 178 out of 221, or 80.5% involved drivers whose ability was impaired, and 15.8% involved drivers whose ability was not impaired.

4.0 Drinking Pedestrians:

In 1975, 14 pedestrians were killed as a result of alcohol involvement.

Seven of these fatalities were intoxicated pedestrians and the other 7

1/ The new accident form does not include the "obviously drunk" classification.

TABLE: 3. ALCOHOL RELATED FATAL ACCIDENTS BY NUMBER OF VEHICLES INVOLVED:
IOWA, 1975

Type of Crash	Fatal Crashes				Fatalities		
	Number	% of Total	% of Sub-group	Mean BAC	Number	% of Total	% of Sub-group
Single Motor Veh.	122	55.2	100.0 ^{1/}	0.1897*	127	49.6	100.0 ^{1/}
Ran off Road	73	33.0	59.8	0.191	75	29.3	59.1
Coll.w/ F.O.	32	14.5	26.2	0.209	34	13.3	26.8
Coll.w/ Drinking Ped.	7	3.2	5.7	0.195	7	2.7	5.5
Coll.w/ Non-Drinking Ped.	7	3.2	5.7	0.159	7	2.7	5.5
Coll.w/ Bicyclist	2 ^{2/}	0.9	1.6	0.141	2	0.8	1.6
Other	1	0.4	0.8	0.220	2	0.8	1.6
Multiple Motor Veh.	99	44.8	100.0 ^{1/}	0.1584*	129	50.4	100.0 ^{1/}
Collision w/ M.V. in Traffic	93	42.1	93.9	0.173	123	48.0	95.4
Parked M.V.	3	1.4	3.0	0.192	3	1.2	2.3
Train	3	1.4	3.0	0.158	3	1.2	2.3
Total	221	100.0	-	0.175	256	100.0	-

^{1/} Details do not add up to totals due to rounding off numbers.

^{2/} Includes 1 drinking bicyclist and 1 drinking driver striking a bicyclist.

* The difference between mean BAC of single and multiple accidents is statistically significant at $P=0.05$, $t=2.315$, $n = N_1 + N_2 - 2 = 151$.

TABLE: 4. NUMBER AND PERCENT DISTRIBUTION OF DRINKING DRIVERS/PEDESTRIANS TESTED FOR BLOOD ALCOHOL CONTENT: IOWA, 1975

Drinking Drivers	Total		Ability Impaired		Ability Not Impaired	
	No.	%	No.	%	No.	%
Tested	153	64.0	136	88.9	17	11.1
Not Tested	86	36.0	50	58.1	36	41.9
Total	239	100.0	186	77.8	53	22.2

TABLE: 5. FREQUENCY OF DRINKING DRIVERS BY BLOOD ALCOHOL CONTENT:
IOWA, 1975

BAC Level	Number of Drinking Drivers	Relative Frequency
Below 0.050	14	9.2
.050 - .099	12	7.8
.100 - .149	29	19.0
.150 - .199	43	28.1
.200 - .249	32	20.9
.250 - .299	12	7.8
.300 - .349	6	3.9
.350 - .399	3	2.0
.400 - .449	2	1.3
Total	153	100.0

TABLE: 6. DRINKING DRIVERS AND ALL DRIVERS INVOLVED IN FATAL MOTOR
VEHICLE ACCIDENTS BY AGE GROUP: IOWA, 1975

Age Group	Drinking Drivers		All Drivers		Non-Alcoholic	
	No.	%	No.	%	No.	%
16 & Below	7	2.9	38	4.3	31	4.8
17	14	5.9	39	4.4	25	3.9
18	16	6.7	53	6.0	37	5.8
19	20	8.4	48	5.4	28	4.4
20	15	6.3	39	4.4	24	3.7
21-24	66	27.6	149	16.9	83	12.9
25-34	48	20.1	178	20.2	130	20.2
35-44	25	10.5	106	12.0	81	12.6
45-54	11	4.6	91	10.3	80	12.4
55-64	7	2.9	50	5.7	43	6.7
65 & up	9	3.8	84	9.5	75	11.7
Not Stated	1	0.4	7	0.8	6	0.9
Total	239	100.0 ^{1/}	882	100.0 ^{1/}	643	100.0

^{1/} Details do not always add up to 100.0% due to rounding.

11.0 Relationship Between Age of Drinking Drivers and Mean Blood Alcohol Content in Fatal Accidents: Iowa, 1975

One interesting question was whether age and blood alcohol content follows a distinct pattern. Number of drivers and mean blood alcohol content are tabulated with age groups in Table 8.

It is interesting to note that drinking drivers who are 19 years old and younger have lower BAC's than their old counterparts. Young drivers may be vulnerable to smaller amounts of alcohol than the older drivers are, and therefore increase their risk of having an accident.

12.0 Alcohol Related Fatal Accidents and Fatalities by Month: Iowa, 1975

Variation by month of the year in 1975 is shown in Table 9. The month of May, June and July chalked up the most number of alcohol related fatal accidents. This 3 month period accounted for 38.9% of the total alcohol related fatal accidents for the whole year.

Figure 6 shows the average BAC by month in relation to average BAC in 1975. The months of March, April, June, August and September are all above the average BAC for all months which is 0.175.

13.0 Ranked Violations Committed by Drinking Drivers Involved in Fatal Accidents: Iowa, 1975

Violations frequently committed by drinking drivers were investigated and ranked by type of accident (multiple vehicle fatal accidents or single fatal accidents). This is reflected in Table 10 and Figure 7.

Drove left of center and speed too fast accounted for 60% of violations in multiple vehicle accidents. On the other hand, speed too fast and not under control accounted for 91% of the violations involving single vehicle crashes.

TABLE: 9. NUMBER AND PERCENT ALCOHOL RELATED FATAL ACCIDENTS AND FATALITIES DRINKING DRIVERS, BY MONTH: IOWA, 1975

Month	Drinking Drivers	Fatal Accidents				Fatalities		
		Alcohol Related No.	Related %	All Fatal Traffic	% Alcohol Related	Alcohol Related	All Fatalities	% Alcohol Related
January	17	13	5.9	34	38.2	14	38	36.8
February	8	8	3.6	25	32.0	10	28	35.7
March	19	18	8.1	45	40.0	21	56	37.5
April	17	15	6.8	43	34.9	16	48	33.3
May	32	28	12.7	55	50.9	33	67	49.2
June	31	28	12.7	69	40.6	32	76	42.1
July	31	30	13.6	67	44.8	37	83	44.6
August	17	17	7.7	48	35.4	20	57	35.1
September	19	17	7.7	49	34.7	20	56	35.7
October	11	11	5.0	45	24.4	12	52	23.1
November	20	20	9.0	55	36.4	21	61	34.4
December	17	16	7.2	43	37.2	20	52	38.5
Total	239	221	100.0	578	38.2	256	674	38.6

14:0 Alcohol Related Fatal Accidents by County: Iowa, 1975

Counties with their corresponding number and percentage of alcohol related fatal accidents are shown in Table 11 and 12.

The following 28 counties had no alcohol related fatal accidents in 1975.

Adair	Chickasaw	Keokuk	Montgomery	Washington
Adams	Clay	Louisa	O'Brien	Wayne
Audubon	Davis	Lucas	Pocahontas	Winneshiek
Bremer	Henry	Lyon	Ringgold	Wright
Buena Vista	Howard	Mills	Taylor	
Carroll	Iowa	Monroe	Van Buren	

TABLE 11: ALCOHOL RELATED FATAL ACCIDENTS AND FATALITIES
BY COUNTY AND BY PERCENT: IOWA, 1975

County	Fatal Accidents			Fatalities		
	Total	Alcohol Related	Percent Alcohol Related	Total	Alcohol Related	Percent Alcohol Related
Adair	2	-	-	4	-	-
Adams	1	-	-	1	-	-
Allamakee	4	1	25.0	4	1	25.0
Appanoose	6	2	33.3	8	4	50.0
Audubon	1	-	-	1	-	-
Benton	6	2	33.3	7	3	42.9
Black Hawk	19	11	57.9	22	13	59.1
Boone	6	2	33.3	7	3	42.9
Bremer	1	-	-	1	-	-
Buchanan	8	4	50.0	9	5	55.6
Buena Vista	3	-	-	3	-	-
Butler	3	2	66.7	3	2	66.7
Calhoun	6	2	33.3	6	2	33.3
Carroll	2	-	-	2	-	-
Cass	7	1	14.3	7	1	14.3
Cedar	6	1	16.7	6	1	16.7
Cerro Gordo	16	9	56.3	16	9	56.3
Cherokee	2	1	50.0	8	3	37.5
Chickasaw	4	-	-	5	-	-
Clarke	3	1	33.3	4	2	50.0
Clay	2	-	-	2	-	-
Clayton	5	3	60.0	6	3	50.0
Clinton	14	6	42.9	15	7	46.7
Crawford	4	1	25.0	4	1	25.0

County	Total	Fatal Accidents		Fatalities		
		Alcohol Related	Percent Alcohol Related	Total	Alcohol Related	Percent Alcohol Related
Jefferson	6	1	16.7	7	1	14.3
Johnson	17	7	41.2	19	9	47.4
Jones	6	3	50.0	8	3	37.5
Keokuk	2	-	-	2	-	-
Kossuth	3	1	33.3	4	1	25.0
Lee	12	5	41.7	12	5	41.7
Linn	21	6	28.6	25	8	32.0
Louisa	1	-	-	1	-	-
Lucas	3	-	-	3	-	-
Lyon	5	-	-	5	-	-
Madison	4	2	50.0	4	2	50.0
Mahaska	8	5	62.5	11	7	63.6
Marion	5	3	60.0	6	4	66.7
Marshall	7	1	14.3	8	1	12.5
Mills	1	-	-	1	-	-
Mitchell	4	1	25.0	1	1	25.0
Monona	4	3	75.0	5	4	80.0
Monroe	3	-	-	5	-	-
Montgomery	1	-	-	1	-	-
Muscatine	4	1	25.0	5	1	20.0
O'Brien	1	-	-	1	-	-
Osceola	2	1	50.0	3	1	33.3
Page	2	1	50.0	2	1	50.0
Palo Alto	3	1	33.3	3	1	33.3
Plymouth	3	1	33.3	3	1	33.3

TABLE 12:

COUNTIES WITH ALCOHOL RELATED FATAL ACCIDENTS
 ABOVE THE STATE AVERAGE OF 38.2% ALCOHOL
 RELATED FATAL ACCIDENTS: IOWA, 1975

<u>Counties</u>	<u>Total Accidents</u>	<u>A.R.^{1/} Accidents</u>	<u>%</u>
Black Hawk	19	11	57.9
Buchanan	8	4	50.0
Butler	3	2	66.7
Cerro Gordo	16	9	56.3
Cherokee	2	1	50.0
Clayton	5	3	60.0
Clinton	14	6	42.9
Dallas	3	3	100.0
Des Moines	6	3	50.0
Dickinson	2	1	50.0
Dubuque	13	8	61.5
Fayette	9	5	55.6
Franklin	2	1	50.0
Greene	4	3	75.0
Grundy	4	2	50.0
Hamilton	5	2	40.0
Hancock	3	2	66.7
Humboldt	5	2	40.0
Jackson	8	6	75.0
Jasper	11	5	45.5
Johnson	17	7	41.2
Jones	6	3	50.0
Lee	12	5	41.7
Madison	4	2	50.0
Mahaska	8	5	62.5

TABLE: 13. ALCOHOL RELATED FATAL TRAFFIC ACCIDENTS AND FATALITIES: IOWA
1970-1975

Year	Fatal Accidents			Fatalities		
	Alcohol Related	Total	% A.R.	Alcohol Related	Total	% A.R.
1970	222	751	29.6	270	912	29.6
1971	233	680	34.3	293	828	35.4
1972	210	721	29.1	252	874	28.8
1973	217	682	31.8	263	813	32.3
1974	187	583	32.0	227	685	33.1
1975	221	578	38.2	256	674	38.0
1970-1975	1290	3995	32.3	1561	4786	32.6

TABLE: 14. ACCIDENT RECORDS OF DRINKING DRIVERS IN FATAL ACCIDENTS: IOWA, 1975

Accidents 3 Years Prior	Number of Drinking Drivers	% Distribution
0	131	61.5
1	54	25.3
2	19	8.9
3	8	3.8
4 or More	1	0.5
Total	213	100.0

16.0 Drinking Drivers History Records: Iowa, 1975

Driver's records of drinking drivers involved in fatal accidents in 1975 were searched for convictions and accidents 3 years prior to the fatal accident.

A total of 213 drivers had records available and from these, Table 14 was prepared to show the numbers of drinking drivers with 0,1,2,3,4 or more accidents during the 3 years prior to the fatal accident.

Approximately 4 out of 10 of the drinking drivers being studied had at least 1 accident during the 3 years prior to the fatal accident.

more similarly to be involved in crashes when they drink.

Younger drinking drivers (24 years or younger) are most involved in fatal accidents during the early morning hours (midnight through 2:59 A.M.). On the other hand, older drivers (above 24 years old) in 1975 were involved during the early evening hours through the early morning hours.

Analysis of alcohol related accidents by number of vehicles involved showed BAC's of persons involved in single vehicle and multiple vehicle crashes. The data show that drinking drivers in single crashes had significantly higher BAC than those in multiple vehicle crashes. This finding agrees with previous findings.

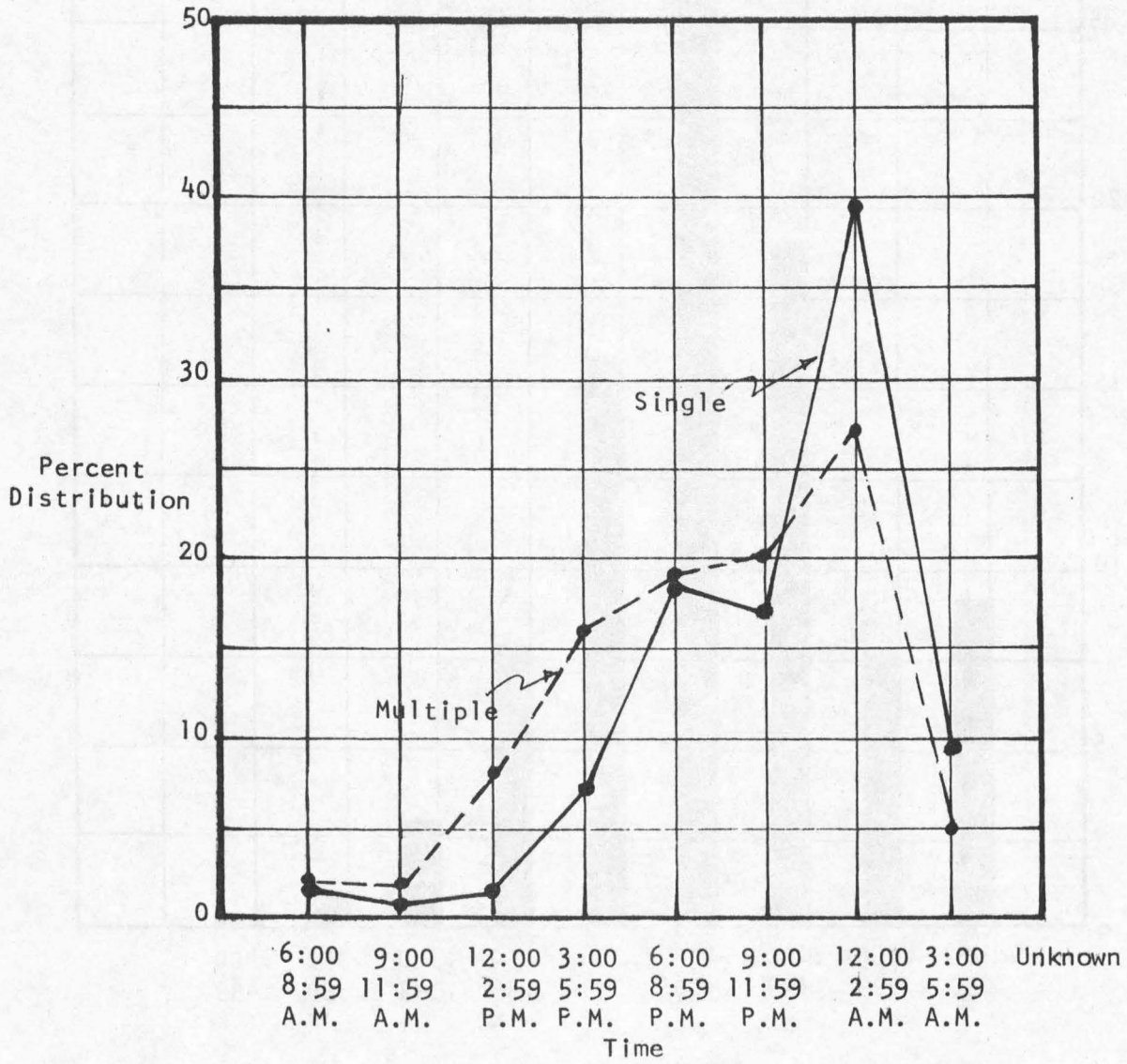


FIGURE:1. PERCENT DISTRIBUTION OF ALCOHOL RELATED FATAL ACCIDENTS BY NUMBER OF VEHICLES INVOLVED (SINGLE OR MULTIPLE) AND BY TIME PERIOD: IOWA, 1975

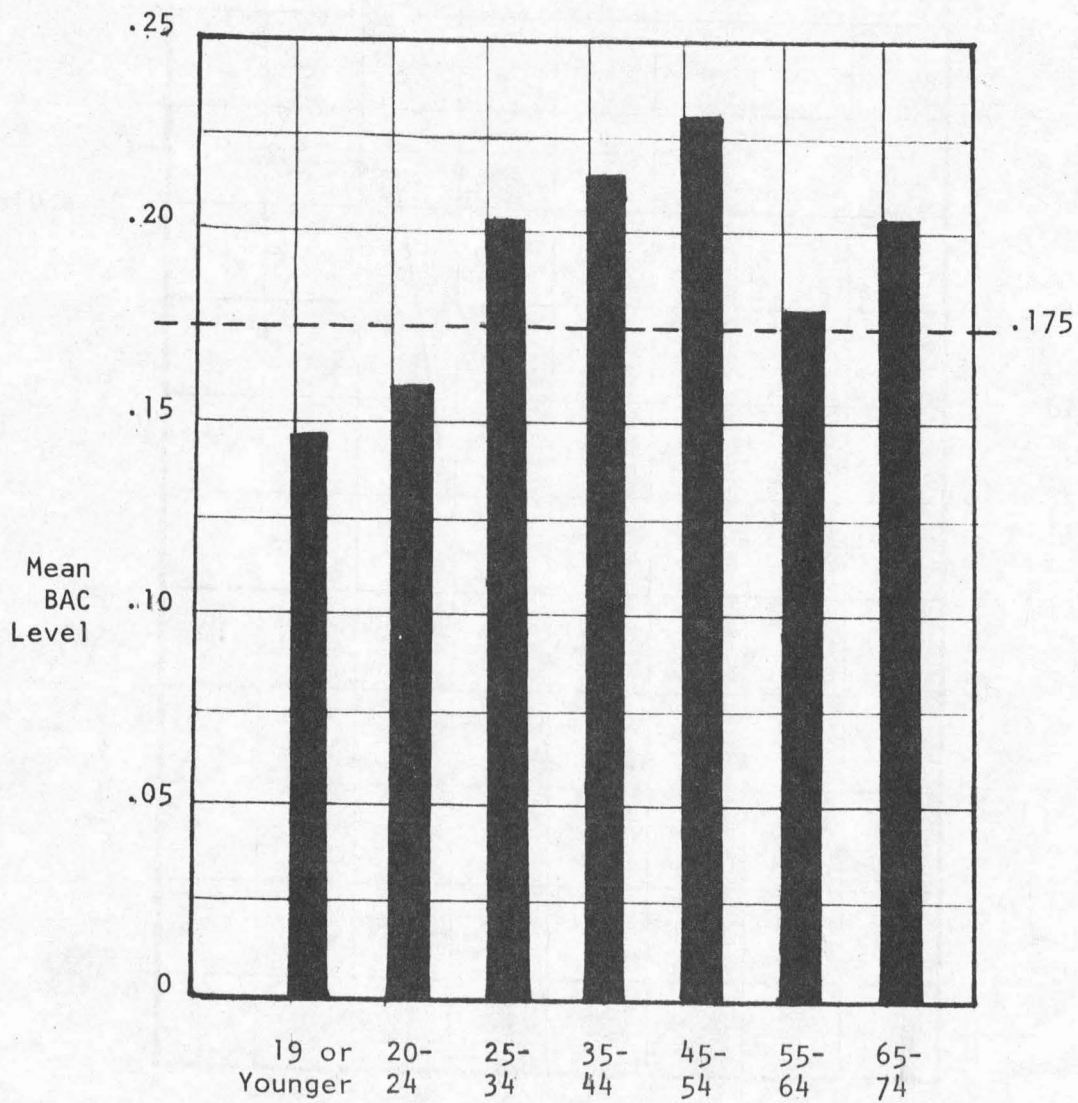


FIGURE: 3. MEAN BAC LEVEL OF DRINKING DRIVERS BY AGE GROUP: IOWA, 1975

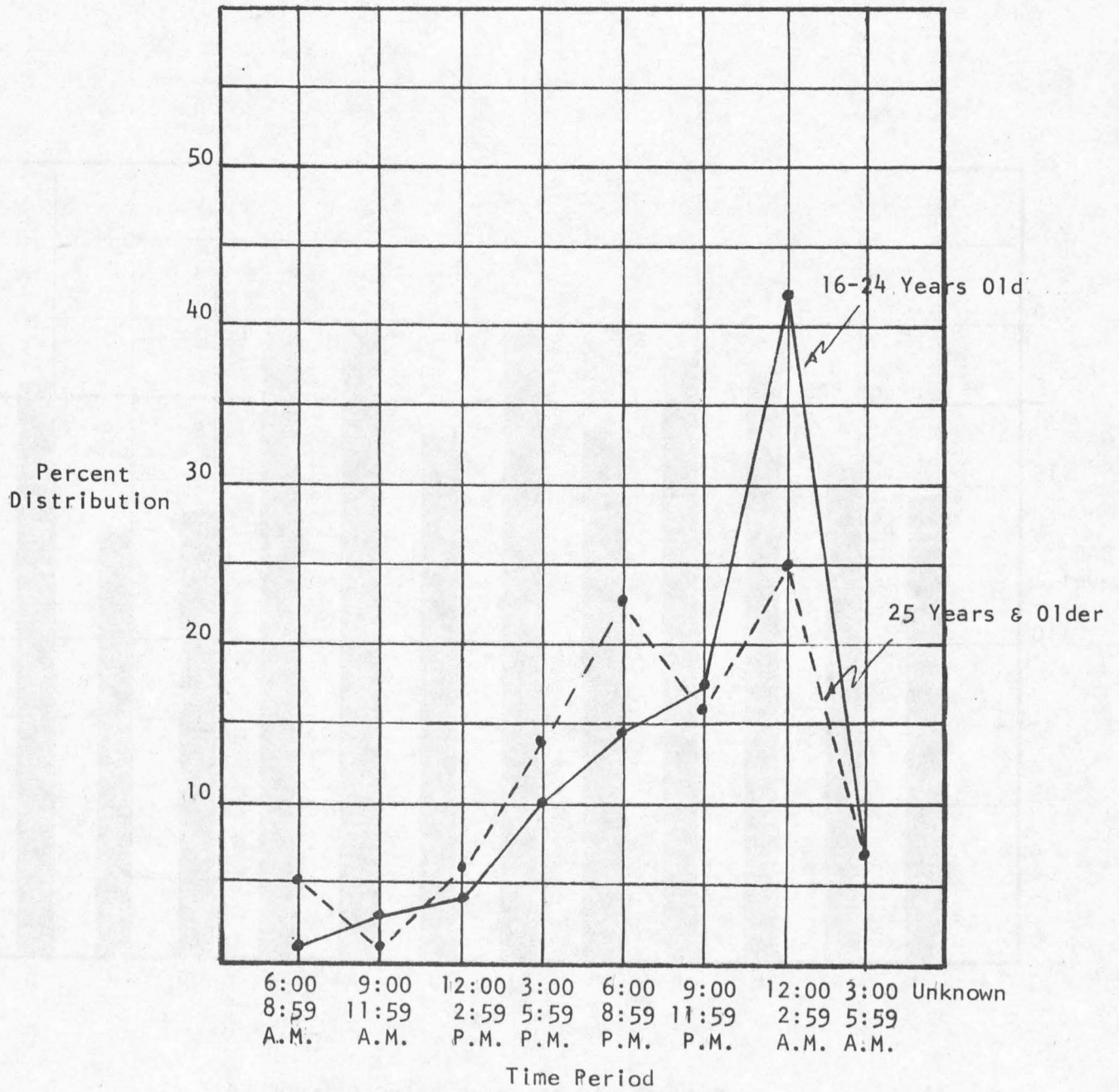


FIGURE: 5. PERCENT DISTRIBUTION OF DRINKING DRIVERS BY TIME AND BY AGE GROUP 16-24 YEARS AND 25 YEARS AND OLDER: IOWA 1975

FIGURE: 7.

VIOLATIONS COMMITTED BY DRINKING DRIVERS
BY SINGLE OR MULTIPLE VEHICLES INVOLVED:
IOWA, 1975

