DOCUMENT RESUME

ED 124 857 CG 010 646

AUTHOR Selzer, Melvin L.; And Others
TITLE A Psychosocial Comparison of Drunk Drivers and Alcoholics.
PUB DATE [74]
NOTE 33p.

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS *Alcoholism; Comparative Analysis; *Drinking; *Maladjustment; *Males; Personality; Psychological Characteristics; *Psychological Studies; Questionnaires; *Socially Deviant Behavior
IDENTIFIERS *Drunk Drivers

ABSTRACT

A self-administered questionnaire was used to compare selected driving, personality, and psychosocial variables of 306 convicted male drunk drivers with those of 289 alcoholics and 269 controls. The drunk driver group fell between the other groups on many parameters but resembled the control group on as many others. While some 40% of the drunk drivers appeared to be alcoholics, they showed significantly less psychosocial incapacity than the alcoholic comparison group. Conversely, the non-alcoholics in the drunk driver group appeared significantly more maladjusted than the control group. (Author)

A Psychosocial Comparison of Drunk Drivers and Alcoholics

BY MELVIN L. SELZER, M.D., AMIRAM VINOKUR, PH.D., AND TIMOTHY D. WILSON

In recent years, we have witnessed a vast national and international effort to reduce the problem of drunk driving. Although the results of these efforts remain moot, they have at least revealed the magnitude of the problem. One U.S. nationwide survey of some 3,200 motorists stopped between 10:00 p.m. and 3:00 a.m. on Friday and Saturday nights revealed that 5% had blood alcohol levels of 0.10% or higher (1). In effect, this indicates there are millions of drunk drivers on the nation's highways at those times. Borkenstein (2), commenting on the problem from another viewpoint, estimated that in a city of 1,000,000 persons there will be 4,000,000 drunk driving violations annually (BAC's of 0.10% or higher). This typical city is likely to have 1,000 police officers who annually average two arrests per man for drunk driving violations - a grand total of 2,000 arrests per year. The enforcement problem is apparent even if the arrest rate were tripled or quadrupled. Very little can be accomplished by 2-8,000 arrests to control 4,000,000 violations. Obviously, solutions for so monumental a problem are not at hand and simple solutions should be viewed with suspicion.

Despite some research on the characteristics of drunk drivers, most programs still treat them as if they were an homogeneous group. Furthermore, since the overwhelming number of drunk drivers make arrests, punishments, and even rehabilitation futile in terms of really reducing the overall menace of drunk driving, broader societa preventive programs will have to be developed. Such programs can emerge only if we have sufficient information about the target population.

What follows is an effort to contribute to our knowledge of the drunk driving population by comparing a number of drinking and psychosocial parameters for a sample of male drunk drivers with a group of alcoholic men and a control group. One item of interest in this comparison is the question of whether drunk drivers resemble the average driver population and are simply caught as a result of occasional heavy

drinking. Alternatively, they might constitute a distinctive group who resemble an alcoholic population - or an intermediate variation.

A secondary goal of this project was to stimulate the development of easily scored self-administered survey instruments to evaluate drunk driving and alcoholic populations, not only for research purposes, but for development of programs more responsive to patient needs and characteristics.

METHOD

A questionnaire was designed to assess a number of demographic, drinking, and psychosocial characteristics. The demographic characteristics were age, education, income, marital status, race, and occupation. Personality and social characteristics were assessed by a variety of scales and included defensiveness, self-control, internality-externality, self-esteem, depression, suicide proclivity, paranoia, and aggression. Variables related to drinking were assessed by the brief Michigan Alcoholism Screening Test (MAST) (3,4) and questions about drinking frequency, amounts, reasons for and effects of drinking. Whenever original scales were modified, adequate reliability was first ascertained (alpha $>$ 0.54). Respondents completed the questionnaire on their own with an interviewer present to provide clarification when needed. Average completion time was sixty minutes.

The questionnaire response format varied from measure to measure. Some items were developed for this study, but most were standardized measures used elsewhere.

SUBJECTS

Drunk Drivers (Group D): 306 men arrested for drunk driving (BAC of 0.10% or highe were required to fill out the questionnaire while participating in mandatory rehabilitation programs following conviction. One half were in a program in Southfield, Michigan, the other in Flint, Michigan.

Alcoholics (Group A): Of the 289 alcoholic subjects, 126 men were receiving outpatient treatment for alcoholism at agencies in Genesee and Wayne Counties in Michigan,

and 163 men were receiving inpatient treatment for alcoholism in hospitals in Flint, Brighton, or Detroit, Michigan. All were required to fill out the questionnaire as part of their treatment programs. There were no significant differences in responses by inpatient and outpatient alcoholics.

Controls (Group L): Men who came to renew their driver licenses in three Michigan counties were offered $3.00 to fill out the questionnaire after the license renewal procedure with 40% (302) agreeing to do so. Those who declined usually pleaded lack of time to complete the questionnaire.

Thirty-three questionnaires were eliminated because of their high scores on the brief Michigan Alcoholism Screening Test, leaving 269 men in Group L.

RESULTS

Demographic Data

Demographic characteristics for the three groups are shown in Table 1. The alcoholics were significantly older than the other two groups and the drunk drivers significantly older than the men in the license group. The higher percentage of "white collar" respondents in Group L is probably an artefact of the sampling locales. In addition, 20% of Group L were students versus 1.5% in Groups A and D, accounting for age and other differences. Hence, the license group had significantly lower income and more education as well as significantly fewer marriages and dependents.

Defensiveness

A questionnaire study of this type must assess respondent candor. Did subjects attempt to answer questions in a socially desirable manner thus making results suspect? This could bias results if members of one group were more defensive or deceptive than those in other groups. An effort was made to assess defensiveness and deception using two sub-components of the Crowne-Marlowe Social Desirability Scale (5). One seven-item scale measured the tendency to assert good things about oneself ("I have never deliberately said something that hurt someone's feelings"), while another seven-item scale measured the tendency to deny bad things ("I sometimes feel resentful when

I don't get my way"). Subjects answered "true" or "false" for each item. The rationale for the development of these measures is that almost everyone is sometimes guilty of the undesirable things conveyed by the statements. Hence, those who deny they ever do them, or assert they always act in a socially desirable manner, are demonstrating an inordinate need for approval that probably extends to other items on the questionnaire. The results of the two subscales are shown in Table 2. High values indicated a greater tendency to deny bad or assert good things about oneself. It can be seen that on the assert good scale, drunk drivers had the highest, alcoholics the next highest, and the controls the lowest means. The only significant difference was between Groups D and L. Apparently those arrested for drunk driving had a greater tendency than the license group to assert good things about themselves.

As seen in the responses to the deny bad scale, the drunken drivers also had a significantly greater tendency to deny bad things about themselves. Again, Group D had the highest mean, but this time Group L had the next highest, with Group A significantly lower than the other two. Thus, of the three groups, Group D had the greatest tendency to both assert good and deny bad things about themselves. This is not surprising, since the questionnaire was given during the course of a mandatory rehabilitation program following their conviction. They probably wished to make the best possible impression. The alcoholics, on the other hand, seemed to feel the least need to deny bad things about themselves, perhaps related to the fact that all of them were acknowledgedly in treatment programs for their alcoholism, a moment of truth for many of them.

This pattern could have introduced uncertainty in the interpretation of the remainder of the data. One would expect relatively more covering up of unfavorable information by the drunk drivers on other questions, causing their scores to be somewhat lower than they should be, and less covering up by the alcoholics, causing their scores to be slightly higher. To correct for this bias, an analysis of covariance was performed on all results (with the exception of the demographic and MAST data) reported in this paper. This method assesses how much the variable in question is

correlated with the Deny Bad and Assert Good tendencies, and allows one to make between-group comparisons based on scores adjusted for these correlations. For example, on the results for the Depression Adjective Checklist reported below, the mean for Group A was adjusted .57 points downward, the Group D mean was adjusted .50 points upward, and the Group L mean was adjusted .04 points upward. In most cases these adjustments were minimal and made no difference in the interpretation of the results.

Variables Related to Drinking and Alcoholism

A series of questions was used to determine respondents' self-classification as drinkers, their drinking patterns, reasons for drinking, and the effects of their drinking.

They were also given the brief Michigan Alcoholism Screening Test (4) to determine the approximate number of alcoholics in each group. A score of six or more was considered indicative of alcoholism, five a borderline score. On the basis of the brief MAST, 39% of the men convicted of drunk driving appeared to be alcoholics (versus 99% of the alcoholic group), 19% were in a borderline category, and 43% fell in the non-alcoholic range. As mentioned earlier, the 33 controls (10%) who scored six or more points were dropped from the study.

In rating themselves as drinkers on an eight-point scale (1=non-drinker, 5=rather heavy drinker, 8=alcoholic), Group A had a very high mean (6.73) significantly greater than the mean for Group L (2.61). Interestingly, Group D fell evenly between the other two groups on this measure (4.22) and was significantly different from both. A "between" pattern for the D group will be seen again and again - but by no means always.

The respondents indicated how often they drank wine, beer, and hard liquor, and the average number of glasses (8 ounces of beer or 4 ounces of wine) or one ounce shots (liquor) per occasion (Table 3). The alcoholics drank hard liquor and beer more often and wine less often than the license group. The frequency of drinking

differences tended to be small. However, the differences in amounts drunk per occasion were much larger. Group A drank more wine, more beer and more hard liquor per occasion than Groups D or L. The differences are particularly striking for hard liquor, where Group A averaged two to three times more per occasion than Group D or Group L. The frequency and quantity scores were summed for all three types of beverage to obtain a total frequency and total quantity score for each group (Table 3). Groups L and D had similar total frequency scores, both significantly less than that of Group A. The biggest differences were still in the amounts imbibed. Group A had a significantly higher score for total amount consumed than the other two groups with Group D's score significantly greater than that of Group L.

All subjects were asked their reasons for drinking and the effects of drinking on them (Table 4). In the former, respondents checked a four-point scale ranging from "strongly agree" to "strongly disagree" against five statements about their reasons for drinking. For the effects of drinking, the subjects checked eleven statements against a five-point frequency scale (1=never to 5=very often). Both the Reasons for Drinking and Effects of Drinking scales were submitted to a hierarchical cluster analysis to extract subcomponents (6). Two subscales of each scale were isolated as follows:

Reasons for Drinking:

Subscale 1: Tension Relief Items: "A drink helps me forget my worries," "I drink when I am low, down, depressed," "I drink because I need it when I'm tense and nervous."

Subscale 2: Social Relaxation Items: "A drink helps me overcome being shy with people," "I drink because it helps me to relax."

Effects of Drinking:

Subscale 1: Troublesome Consequence Items: "Makes me depressed," ". . . lose control," ". . .get into trouble with others."

Subscale 2: Comfortable Consequence Items: "Makes me more relaxed," ". . . more comfortable," ". . . happy," ". . . less concerned about problems," ". . .feel more free."

These variables differentiated between the three groups to a greater degree than almost any other measure. Group A scored the highest on all four subscales, Group L the lowest, with Group D falling between the other two on all four subscales. All differences between means for each subscale were significant beyond the .01 level. Thus, the alcoholics drank more to relieve tension and had more troublesome effects from drinking than either men arrested for drunk driving or the license group, but also drank more for social relaxation and experienced more comfortable effects than the other groups. Men arrested for drunk driving drank more for tension relief and for social relaxation and experienced more troublesome and more comfortable effects from drinking than the control group. It should be noted that only the alcoholics had a higher mean for drinking for tension relief than for social relaxation.

Family and Job Stress

Subjects rated their relationships with members of their immediate families on a five-point scale ranging from "very good" to "very bad," indicated how frequently they had problems with members of their families and at work and how distressing they found these family and work problems (Table 5). These items were combined into seven separate scales labeled "Relations with Family," "Frequency of Family Problems," "Family Problem Distress," "Frequency of Job Problems, " "Job Problem Distress," "Total Problems," and "Total Distress." Total Problems included Frequency of Job and Family Problems plus a "Frequency of Financial Problems" item not separately shown. "Total Distress" combined the Family and Job Distress items.

Respondents were also asked four symptom questions that were combined into a scale labeled "Stress Symptoms". The four questions, used with a six-point frequency scale ranging from "never" to "several times a week" asked about "headaches," "upset stomach," "insomnia," and "feelings of tenseness or nervousness" (Table 5).

All results appear in Table 5 and show that Group A had significantly more stress, poorer relations, more problems with families and jobs, and found these problems significantly more disturbing than did either the D or L groups. Further-

more, there were no significant differences between Groups D and L on any of these measures, a noteworthy departure from the intermediate status often shown by the drunk drivers. It is important to note that our data do not reveal the temporal direction of causality in the relationship between alcoholism and these stress related problems.

Drug Taking

The respondents were asked five questions about drug use other than alcohol: How often, on a six-point scale ranging from "several times a week" to "never", did they take sleeping pills, tranquilizers, stimulants, marijuana, or LSD (Table 6)? Group L used significantly more marijuana and LSD (although these differences are small), presumably a function of their lower age and student status. Group A took significantly more sleeping pills and tranquilizers than the other two groups, whose means did not differ significantly.

Leisure Time Activity

To determine respondents' use of leisure time, they were given the list of activities in Table 7, with a five-point frequency scale ranging from "never" to "very often". Except for the "drinking with friends" item, which both Groups A and D indulged in significantly more often than Group L, the alcoholics participated significantly less often in every activity than Group L. The differences were small, and were significant only for reading, family activities, and getting together with friends, but the trend was consistent across all the items. Group D did not differ significantly from the alcoholics on any of the items, but participated significantly less often than Group L in church activities, reading, family activities, and getting together with friends. Thus, with the exception of going out drinking with friends, both male alcoholics and men arrested for drunk driving participated less in other types of leisure time activities than did the license group.

Personality Variables

Buikhuisen (7) found that the responsibility and self-control scales of the California Psychological Inventory (8) differentiated between those convicted of drunk driving and a control group. Short versions of these scales were constructed by means of a cluster analysis that were both reliable and a good approximation of the original scales (6). The results appear in Table 8. A higher score denotes more responsibility and more self-control.

Responsibility: The responsibility variable attempts to measure the degree of responsibility one feels to others and the need felt to participate in and live by the rules of the community ("If I get too much change in a store, I always give it back," "I would be ashamed not to use my privilege of voting"). The alcoholics and drunk drivers were very similar on this measure with both significantly less responsible than Group L.

Self-Control: Group A was significantly lower in self control ("I get excited very easily," "I often lose my temper") than either of the other two groups, whose means did not differ significantly. Thus, alcoholics were less responsible and had less self-control than either drunk drivers or the license group. Group D was less responsible than the controls but indistinguishable from them on the self-control measures. The biggest difference was in the self-control measure, where the alcoholics scored considerably lower than the other two groups.

Internal-External Control: It was hypothesized that Rotter's (9) internal-external control of reinforcement dimension would differentiate the groups. This measure distinguishes between those who view the locus of causality of personally relevant events as external from themselves versus those who view such events as products of their own actions and efforts. Ten of Rotter's forced-choice items were scattered in the questionnaire and converted into a yes-no format: an internal control scale ("What happens to me is my own doing," "In my case, getting what I want has little or nothing to do with luck") and an external control scale ("Many times I feel that I have little influence over things that happen to me," "Getting

a good job depends mainly on being in the right place at the right time"). Table 8 shows the means following a different pattern for externality than they do for internality. This supports the notion that these two measures are not opposites on the same continuum, but are at least partially independent (10,11). The differences among the three internality means were small with a tendency for the alcoholics to be more internal. The alcoholics do appear to have a significantly greater external orientation, however. As seen in Table 8, the externality means are virtually identical for Groups L and D, but substantially higher for Group A. Care should be taken in interpreting this finding. There has been a pervasive assumption in the locus of control literature that an external orientation implies greater maladjustment. The implication has been that an external point of view is by definition a cause of maladjustment. Recent work has shown that the internal-external dimension may not be a stable personality variable but may be the result of situational factors (12, 13). Hence, the possibility that externality as seen here may be a result of alcoholism.

Self-Esteem: A measure consisting of seven statements (14) was used to assess self-esteem. This probed respondents' level of agreement on a four-point scale ranging from "strongly agree" to "strongly disagree" with statements reflecting self-worth, self-satisfaction, and feelings of being successful ("On the whole, I am satisfied with myself"). As seen in Table 8, there were significant differences among the three groups, Group A having the lowest self-esteem, Group L the highest.

Depression: Modified versions of two depression profiles were used. One measure was Form G of the Depressive Adjective Check List (DACL) (15) where respondents checked all words in a list of thirty-four adjectives that accurately "described their feelings in general" (these last words were changed from the original instructions which asked how the person felt "today" to make it a measure of more than transient affect). The second measure was the Short Zung Self-Rating Depression Scale (16). This consisted of twelve statements which were either mood-related ("blue," "crying") or probed the frequency of symptoms associated with depression

("I get tired for no reason," ". . . poor appetite," ". . . trouble sleeping"), against which respondents checked a five-point scale ranging from "never" to "almost always". Table 8 shows large and significant differences among means for all three groups on both depression measures, with Group A scoring higher than Group D, who in turn scored higher than Group L (the higher the mean, the greater the depression). Thus, alcoholics were significantly more depressed than those arrested for drunk driving, who, in turn, were more depressed than the controls.

How many of the respondents had depressions of clinical magnitude? Lubin (17) reported a mean score of 15 on the DACL for psychiatric patients being treated for clinical depression. Using this as a conservative threshold for estimating moderately severe to severe depression, 33% of Group A, as compared to 10% of Group D and 5.5% of Group L, had depressions of clinical severity.

Suicide Proclivity: Questions related to suicide were included to further assess the presence of depression and despair. The first queried how often in his lifetime (ranging from "never" to "many times") the respondent had felt like taking his life. The second, how often he felt like committing suicide during the prior year. A third item asked the respondents to rate how seriously they had considered suicide if they had thought of it in the prior year. The answers to these three questions were summed into one composite measure labeled "Suicide Proclivity". As seen in Table 8, the alcoholics scored significantly higher on this measure than either of the other two groups. Respondents were also asked if they had ever attempted suicide, and whether they had made an attempt in the past year. 14% of Group A, 4% of Group D, and 3% of Group L attempted suicide at least once in their lifetimes, while 5% of Group A, 1% of Group D, and 1% of Group L had made an attempt in the prior year.

Paranoid Thinking: An index of paranoid thinking was constructed, using eight items from the Buss-Durkee Inventory (18) that expressed suspicion ("I commonly wonder what hidden reason another person may have for doing something nice for me") and resentment ("I feel I get a raw deal out of life") plus four

additional questions: "How often do you feel (1) that someone is trying to spoil things for you?; (2) that someone holds a grudge against you?; (3) that things are rigged against you?; (4) envious of other people?" The mean paranoid indices composed of all twelve items appear in Table 8. The differences among the three means were significant.

Aggression: A thirteen item scale from the Buss-Durkee Inventory (18) was used to assess subjects' agreement with statements reflecting aggressive and angry feelings ("It makes my blood boil to have somebody make fun of me," "I often feel like a powder keg ready to explode"). The summed ratings appear in Table 8. Using this criterion, Group A had the highest "aggression" score, Group L the lowest. However, the difference between the means for the alcoholics and the drunken drivers were not significant, with both means significantly higher than the mean for Group L.

Two additional questions were used to assess actual aggressive behavior: "How often during the past year have you been involved in a fist fight?" and "How often during the past year did you become so angry that you threw or broke things?" 12.2% of Group A, 5.9% of Group D, and 2.6% of Group L had had fist fights two or more times, while 25% of Group A, 12.3% of Group D, and 12.4% of Group L said they had thrown or broken things two or more times. On these measures of aggressive behavior, the alcoholics appeared to be much more aggressive than either the drunk drivers or the controls.

Coping with Depression and Tension: Respondents were asked, "How often do you do each of the following when you are depressed or nervous or tense?" They checked a five-point scale ranging from "never" to "always" after each item, which included eating, taking tranquilizers, taking other medications, smoking a great deal, having a drink, physical activity, going to a movie, thinking it over, talking the problem over with someone, and talking to others but not about the problem. A hierarchical cluster analysis (6) was performed on the data from which two clusters emerged (Table 9). One, labeled "Coping-oral substance use", included tranquilizers, other

medications, smoking, and having a drink. The second, "Coping without substance use", included going to a movie, thinking it over, talking about the problem, and talking to others but not about the problem. A score for each cluster was calculated by summing the appropriate item responses. Group A used oral substances significantly more often than Groups D and L, and Group D used them significantly more often than Group L. Group L used non-substance methods significantly more often than Groups A and D, whose means did not differ significantly from each other. Thus, both alcoholics and drunk drivers resorted more to oral substance use and less to other means when coping with tension or depression than did the control population.

In order to see if alcoholics and drunk drivers used oral substances other than alcohol more than Group L, a second analysis of oral substance use as a coping mechanism was done with the item "having a drink" eliminated. As seen in Table 9, this turned out to be the case. Group A used oral substances other than alcohol significantly more often than either Groups D or L, and again Group D used them significantly more often than Group L.

DISCUSSION

It appears the alcoholics were significantly different from the license group on virtually every variable. From the drinking pattern responses, we can conclude that the male alcoholics, in comparison to the license group:

1. drank beer and hard liquor more often and drank much larger quantities of wine, beer, and hard liquor
2. drank more to relieve tension than for social relaxation, while the license group drank more for social relaxation
3. experienced more troublesome effects than comfortable effects from drinking
4. had more stress in their lives as reflected by more problems with their families and jobs and more use of sleeping pills and tranquilizers
5. participated less in leisure time activities other than drinking.

The alcoholics, when compared with the license group, were also less responsible, had less self-control, had a more external locus of control, and were more depressed and suicidal. In addition, they had less self-esteem, were more paranoid and aggressive, used oral substances more and non-oral means less for coping with their tension and depression.

The above description is, of course, based on group averages, but in all likelihood there are different subtypes within Group A. A further analysis of the alcoholic group was done to see if any subgroupings could be defined by age. The alcoholics were split into three subgroups according to years of age under 30 (N=35), 30-44 (N=127), and 45 and over (N=127). These subgroupings were compared on the personality measures. The 45 and older group was more responsible than the other two subgroups. They were significantly less depressed, less paranoid, less suicidal, less aggressive, and had fewer problems with their families and jobs than the men between 30 and 45.

This analysis lends support to the concept that alcoholics are not an homogeneous group. Our results confirm that age is an important factor: older alcoholics are different from those under 45, a finding with obvious implications for therapy programs.

The license group was also stratified into three age groups, but similar differences were not found.

In general, the data for the men arrested for drunk driving were less clear-cut. One goal of this study was to determine if drunk drivers were similar to alcoholics. On many of our variables, Group D scored between Groups A and L, on others they were very close to Group L, and on a few they were very close to Group A. This pattern will be examined in detail.

Of the variables related to drinking and alcoholism, Group D clearly fell between the other two groups. The men arrested for drunk driving:

1. drank beer significantly more often and drank larger amounts of beer and hard liquor than the license group, but drank hard liquor less often and drank

smaller amounts of wine, beer, and hard liquor than the alcoholics. In total amounts of alcoholic beverages consumed, they imbibed significantly less than the alcoholics, significantly more than Group L.

2. drank more for both tension relief and social relaxation than did men having their licenses renewed but less for both these reasons than the alcoholics.

3. experienced more troublesome and more comfortable effects from drinking than the controls but less of both than the alcoholics.

Thus, the drunk drivers were evidently different from the control group or the alcoholics in drinking behavior, motivation for drinking, and its perceived consequences.

On other measures, Group D was very similar to Group L with both significantly different from Group A. To demonstrate these patterns, all means were transformed into standard scores (mean=0, standard deviation=1) and were plotted on one graph (Figure 1). The slopes and curves of the lines are essentially meaningless because the order of the scales on the abscissa is arbitrary, but they do portray the relative distances among the groups on each measure.

The stress measures (Figure 1, variables 15-17, 20-22) show little difference between Groups D and L, both of whom reported significantly less stress than Group A. Given that at least 39% of Group D are in the alcoholic range on the brief MAST and that significantly more of them have stressful personality aberrations and all were recently subjected to the stress of an arrest for drunk driving, their similarity to the control group on the stress measures is puzzling.

As seen in Figure 1, Group D was also similar to Group L on some personality variables, including self-control. It should be noted that Buikhuisen (7) found that male drunken drivers were more neurotic and had significantly less self-control than a group of matched controls. However, consistent with Buikhuisen's findings, Groups D and A were very similar on the responsibility measure with both significantly less responsible than the controls.

The drunk drivers were more depressed than the controls but less so than the alcoholics. They had less self-esteem and were more paranoid and aggressive than

the controls but were less extreme on all three measures than the alcoholics. The drunk drivers also used oral substances more and non-oral means less for coping with tension and depression than the license group.

Clearly, men arrested for drunk driving are not random members of the general population who happen to be caught on one occasion. Indeed, they were quite distinguishable from the control group on a variety of personality measures as well as on variables related to drinking. Our findings, among others, that drunk drivers are heavier drinkers, experience more troublesome effects from drinking, drink more for tension relief, are more depressed, less responsible, have less self-esteem, and are more paranoid and aggressive than men coming to have their licenses renewed, have significant implications for drunk driver rehabilitation programs.

The drunk drivers were divided into three age groups: under 30 (N=76), 30-44 (N=130), 45 and over (N=100) and compared on all measures. It was hypothesized that a pattern would emerge of older drunken drivers similar to the alcoholics and the younger ones similar to the license group. This did not turn out to be the case. To begin with, there was no relation between age and brief MAST scores in Group D. As seen in Table 10, men in Group D who scored six or more on the brief MAST were evenly distributed across the three age groups. The correlation between weighted MAST scores and age was -.003, indicating they were independent of one another.

Although there were significant differences on some measures among the age subgroups of the D drivers, a consistent pattern unique to the D group did not emerge. Many of the differences were also found in the license group, like the finding that the youngest subgroup scored significantly lower on the self control measure and higher on the suicide proclivity measure.

Among the age differences in the D group, those 45 and over had significantly fewer problems with their families. Those under 30 used significantly more tranquilizers, sleeping pills, and stimulants than the middle-aged group, and showed more aggressive tendencies than the oldest group. The expected pattern of the youngest

drunken drivers being similar to the license group and the older ones being similar to the alcoholics occurred on a few items, but the reverse pattern occurred on others. The under 30 drunk drivers scored close to the license group on the aggression scale while the 45 and over group was very similar to the alcoholics on this measure. On the responsibility scale, however, the oldest subgroup resembled the men having their licenses renewed while the youngest subgroup was similar to the alcoholics.

It was illuminating to stratify the drunk drivers in yet another way, namely according to their brief MAST scores. Group D was divided into two subgroups, those scoring six or more on the brief MAST (N=115) (implying alcoholism) and those scoring less than six (N=183). (Eight subjects in Group D did not fill out the MAST part of the questionnaire.) They were then compared to each other and to Groups A and L on the various measures. The premise here was that Group D was made up of alcoholics similar to the members of Group A and social drinkers similar to Group L, whose scores, when combined, fell between the other groups on most measures.

The data did not bear this out, but nonetheless were revealing. The men in Group D who scored six or more on the brief MAST were closer to the alcoholics than were those who scored less than six on almost every scale; not a surprising finding since the MAST was designed to reveal alcoholism. However, the scores of the men in Group D who had six or over on the MAST were not as extreme as Group A. On every measure where the total group of drunken drivers was significantly less extreme than the alcoholics, the subgroup of those who scored six or over on the brief MAST was also significantly less extreme.

Another finding was that even the low MAST scorers were closer to the alcoholics than to the license group on some measures. On most of the scales that strongly differentiated the alcoholics from the control group (see Figure 1), including drinking for tension relief, troublesome effects from drinking, responsibility, low self-esteem, paranoid thinking, and using oral substances to cope with tension and depression, those members of Group D who scored <u>less</u> than six on the MAST were significantly different from the license group ($p < .05$, two-tailed t-test). This was

another indication that Group D was not merely a mixture of alcoholics and social drinkers who, when combined, simply fell between Groups A and L on many measures. Rather, it was made up of one group of men who were alcoholics on the basis of their brief MAST and other responses, but who were not as extreme on our measures as men being treated for alcoholism, and another group of men that appeared to be "potential alcoholics" in that they were significantly different from the control group with the difference slanted toward findings like those in an alcoholic population. This latter group did not score high on the brief MAST, but scored significantly differently from the controls on some important measures related to alcoholism. The results of this study have important implications for alcoholism treatment programs and for programs for people arrested for drunken driving.

Alcoholics are not an homogeneous group and should not be treated as such. Further research should be able to identify significant subtypes so that treatment and research can focus on the needs of relevant subgroups. Furthermore, it appears that self-administered questionnaires can be utilized for this purpose.

Forty to fifty percent of our sample of drunk drivers were alcoholics on the basis of their brief MAST scores. Even those who did not score in the alcoholic range, however, were different from the controls on various measures related to alcoholism. The fact that this "low" MAST subgroup of drunk drivers scored higher than the control group on many measures indicates considerable deviation even in the presumably non-alcoholic segment of the drunk driving group.

Finally, a word about the cause and effect relationship between alcoholism and the variables used in this study. As noted in our discussion on the external locus of control variable, the assumption can not be made that the variables used here are causes of, or even precede, alcoholism (although we do not doubt that many do). Nevertheless, the measures used are valuable in providing insights into the nature of alcoholism and for suggesting directions that treatment programs will have to take if they are to be responsive to the needs and requirements of alcoholic and drunk driving populations.

REFERENCES

1. Wolfe AC: 1973 US National Roadside Breathtesting Survey. University of Michigan, Highsay Safety Research Institute, 1974.
2. Borkenstein RF: A proposal for increasing the effectiveness of ASAP enforcement programs. Indiana University, 1972 (processed).
3. Selzer ML: The Michigan alcoholism screening test: the quest for a new diagnostic instrument. Am J Psychiatry 127:1653-1658, 1971.
4. Pokorney AD, Miller BA, Kaplan HB: The brief MAST: a shortened version of the Michigan alcoholism screening test. Am J Psychiatry 129:342-343, 1972.
5. Crowne D, Marlowe D: The Approval Motive. New York, Wiley, 1964.
6. Kulik J, Revelle W, Kulik C: Scale construction by hierarchical cluster analysis. University of Michigan, Center for Research on Learning and Teaching, 1972.
7. Buikhuisen W: Criminological and psychological aspects of drunken drivers. Groningen, Holland, Criminological Institute, State University of Groningen, 1969.
8. Gough HG: Manual for the California Psychological Inventory (Revised). Palo Alto, Consulting Psychologists Press, 1960.
9. Rotter VB. Generalized expectancies for internal versus external control of reinforcements. Psychol Monog 80:1, No 609, 1966.
10. Hersch PD, Scheibe KE: Reliability and validity of internal-external control as a personality dimension. J Consult Psychol 31:609-613, 1967.
11. Collins BE: Four separate components of the Rotter I-E Scale: belief in a difficult world, a just world, a predictable world and a politically responsive world. J Person and Soc Psychol 29:381-391, 1974.
12. McArthur LA: Luck is alive and well in New Haven: a serendipitous finding on perceived control of reinforcement after the draft lottery. J Person and Soc Psychol 16:316-318, 1970.
13. Smith R: Changes in locus of control as a function of life crisis resolution. J Abnorm Psychol 75:329-332, 1970.

14. Rosenberg M: Society and the Adolescent Self-Image. Princeton, NJ, Princeton University Press, 1965.

15. Lubin B: Manual for the Depression Adjective Check Lists. San Diego, Educational and Industrial Testing Service, 1967.

16. Zung WW: A self-rating depression scale. Arch Gen Psychiatry 12:63-70, 1965.

17. Lubin B: Adjective checklists for measurement of depression. Arch Gen Psychiatry 12:57-62, 1965.

18. Buss AH, Durkee A: An inventory for assessing different kinds of hostility. J Consult Psychol 21:343-349, 1957.

Dr. Selzer is Professor of Psychiatry, University of Michigan Medical School, Dr. Vinokur is Assistant Research Scientist, Institute for Social Research, and Mr. Wilson is Research Assistant, Highway Safety Research Institute, University of Michigan. Address reprint requests to Dr. Selzer, Riverview Building, 900 Wall Street, Ann Arbor, Mich. 48105.

This study was supported by grants AA00495 and MH23246 from the National Institute of Alcoholism and Alcohol Abuse.

TABLE 1

Demographic Characteristics

Variables	Means Group A N=289	Means Group D N=306	Means Group L N=269	T-Scores A-D	T-Scores A-L	T-Scores D-L
1. Age	43.5	39.5	34.7	4.09***	8.64***	4.75***
2. Education (years)	11.7	11.6	14.3	.53	9.10***	10.32***
3. No. of Marriages	1.32	1.09	.79	3.78**	8.91***	5.09***
4. Income	$12,600	$12,000	$11,100	1.24	2.54	1.47
5. Marital Status				X^2	df	significance le
Single	8.3%	20.3%	31.6%	82.62	6	.0001
Married	63.4%	59.3%	63.2%			
Divorced or Separated	24.9%	20.0%	4.5%			
Widowed	2.4%	0.3%	0.7%			
6. Race						
Black	13.2%	10.1%	6.0%	7.35	4	NS
White	83.0%	86.8%	91.2%			
Other	3.8%	3.1%	2.8%			
7. Occupation (excluding students)						
"White Collar"[1]	29.3%	29.2%	54.0%	40.98	2	<.0001
"Blue Collar"[2]	70.7%	70.8%	46.0%			

[1]Professional, technical, management, official, proprietary, clerical, and sales jobs

[2]Craftsmen, foremen, service workers, and laborers

*p <.01
**p <.001
***p <.0001

TABLE 2

Tendencies to Assert Good and Deny Bad Things about Oneself

Scale[1]	Means			T-Scores		
	Group A	Group D	Group L	A-D	A-L	D-L
Assert Good	8.46	9.00	7.94	2.03*	1.84	3.86***
Deny Bad	4.75	7.47	6.69	8.46***	5.85***	2.37*

1 The higher the mean the greater the tendency to assert good or deny bad things about oneself.

*p < .05
**p < .01
***p < .001

TABLE 3

Types and Frequency of Drinking

Variable	Means			T-Scores		
	Group A	Group D	Group L	A-D	A-L	L-D
Frequency of Wine[1]	2.78	2.47	3.19	2.23*	2.85**	5.15***
Frequency of Beer	4.75	4.91	4.11	1.07	4.02***	5.22***
Frequency of Hard Liquor	4.75	3.54	3.44	7.98***	8.33***	.66
No. Glasses of Wine Per Occasion	3.26	2.20	1.86	3.91***	5.19***	1.30
No. Glasses of Beer Per Occasion	7.02	4.85	2.67	7.22***	14.31***	7.60***
No. Glasses of Hard Liquor Per Occasion	8.02	3.97	2.48	12.81***	17.35***	4.95***
Total Frequency	12.36	10.92	10.76	4.78***	5.15***	.56
Total Amount	19.37	10.94	6.99	11.43***	17.61***	6.48***

[1] Frequency Scales: 1 = "Never," 7 = "Almost every day."

*p < .05
**p < .01
***p < .001

TABLE 4

Reasons for and Effects of Drinking

Cluster	Means			T-Scores		
	Group A	Group D	Group L	A-D	A-L	D-L
Reasons for Drinking						
Tension Relief[1]	6.20	3.48	1.85	14.30*	22.40*	8.69*
Social Relaxation[1]	5.65	4.57	3.67	6.53*	11.74*	5.52*
Effects of Drinking						
Troublesome[2]	5.40	3.21	1.59	12.60*	21.45*	9.43*
Comfortable[3]	11.68	8.80	7.80	10.13*	13.37*	3.57*

[1]Range = 0-9

[2]Range = 0-12

[3]Range = 0-12

*$p < .001$

TABLE 5

Stress Measures

Item	Means Group A	Group D	Group L	T-Scores A-D	A-L	D-L
Relations with Family[a] Items = 3 Range = 6-16	13.01	14.29	14.36	9.10***	9.42***	.53
Frequency of Family Problems Items = 3 Range = 0-14	5.40	4.65	4.53	3.99***	4.57***	.68
Family Problem Distress Items = 3 Range = 0-12	4.58	3.16	3.01	10.87***	11.78***	1.17
Frequency of Job Problems Items = 2 Range = 0-10	4.84	3.95	4.08	4.45***	3.70**	.68
Job Problem Distress Items = 2 Range = 0-8	3.26	2.41	2.34	6.57***	6.99***	.57
Total Problems	12.10	10.37	10.38	5.18***	5.06***	.01
Total Distress	7.87	5.78	5.35	9.96***	11.74***	2.06*
Stress Symptoms Items = 4 Range = 0-20	10.87	8.44	7.97	7.68***	8.96***	1.49

a-Lower values indicate poorer relations.

*p < .05
**p < .001
***p < .0001

TABLE 6

Frequency of Drug Use

Drug[1]	Means			T-Scores		
	Group A	Group D	Group L	A-D	A-L	D-L
Sleeping Pills	1.96	1.25	1.24	7.46***	7.45***	.13
Tranquilizers	2.84	1.59	1.32	9.70***	11.52***	2.06*
Stimulants	1.27	1.16	1.25	1.61	.31	1.32
Marijuana	1.31	1.66	2.01	3.00**	5.84***	3.01**
LSD	1.04	1.08	1.19	1.17	4.09***	3.05**

[1]Range for all items = 1-5; 1 = "Never," 5 = "Very Often."

*p < .05
**p < .01
***p < .001

TABLE 7

Leisure Time Activities

Activity[1]	Means			T-Scores		
	Group A	Group D	Group L	A-D	A-L	D-L
Watching TV	3.26	3.47	3.30	2.55*	.42	2.15*
Reading	3.58	3.67	3.99	.99	4.57***	3.73***
Church or Club Activities	2.21	1.98	2.43	2.24*	2.07*	4.41***
Working Around the House	3.38	3.49	3.50	1.19	1.31	.15
Working on the Car	2.59	2.76	2.69	1.71	.93	.77
Family Activities	3.34	3.59	3.97	2.43*	5.90***	3.62***
Getting Together with Relatives	2.59	2.74	2.79	1.74	2.26*	.58
Getting Together with Friends	3.09	3.11	3.47	.17	4.41***	4.40***
Going Out Drinking with Friends	2.56	2.43	2.08	1.35	4.83***	3.63***

[1]Range for all items = 1-5; 1 = "Never," 5 = "Very Often."

*p < .05
**p < .01
***p < .001

TABLE 8

Personality Variables

Scale[1]	Means Group A	Group D	Group L	T-Scores A-D	A-L	D-L
Responsibility Items = 10 Range = 0-20	12.63	12.49	13.71	.41	3.31**	3.85*
Self-Control Items = 10 Range = 0-20	9.99	13.15	13.71	9.36***	10.77***	1.66
Internality Items = 10 Range = 0-20	13.27	12.67	12.53	1.92	2.28*	.41
Externality Items = 10 Range = 0-20	9.37	7.32	7.17	5.43***	5.71***	.42
Self-Esteem Items = 7 Range = 0-21	14.89	16.62	17.41	5.95***	8.50***	2.76**
Depression (DACL) Items = 34 Range = 0-34	11.68	8.04	6.18	7.64***	11.30***	3.95***
Depression (Zung) Items = 12 Range = 0-48	17.76	12.64	11.00	10.07***	13.02***	3.27**
Suicide Proclivity Items = 3 Range = 0-12	1.28	.53	.60	6.04***	5.32***	.61
Paranoid Thinking Items = 12 Range = 0-36	16.79	14.23	12.31	5.37***	9.18***	4.06***
Aggression Items = 13 Range = 0-39	16.31	15.23	13.54	2.33*	5.86***	3.70***

1 the higher the mean on all scales, the more extreme the group is on that particular measure

*p < .05
**p < .01
***p < .001

TABLE 9

Methods of Coping with Depression or Tension

Methods of Coping	Means			T-Scores		
	Group A	Group D	Group L	A-D	A-L	D-L
Oral Substance Use Items = 4 Range = 0-16	6.44	4.28	2.59	10.80*	18.79*	8.50*
No Substance Use Items = 5 Range = 0-20	10.24	10.08	11.41	.69	4.87*	5.74*
Oral Substance Use Minus the Item, "Having a Drink" Items = 5 Range = 0-20	4.11	2.51	1.64	9.58*	14.33*	5.21*

$P < .0001$

TABLE 10

MAST Score Distribution for Drunk Drivers

MAST	AGE			TOTAL
	30	30-44	45	
0-4	35 (47%)	71 (56%)	52 (54%)	158
5	10 (13%)	9 (7%)	6 (6%)	25
≥ 6	30 (40%)	46 (37%)	39 (40%)	115
TOTAL	75	126	97	298

$X^2 = 4.07$
df = 4
p = .40

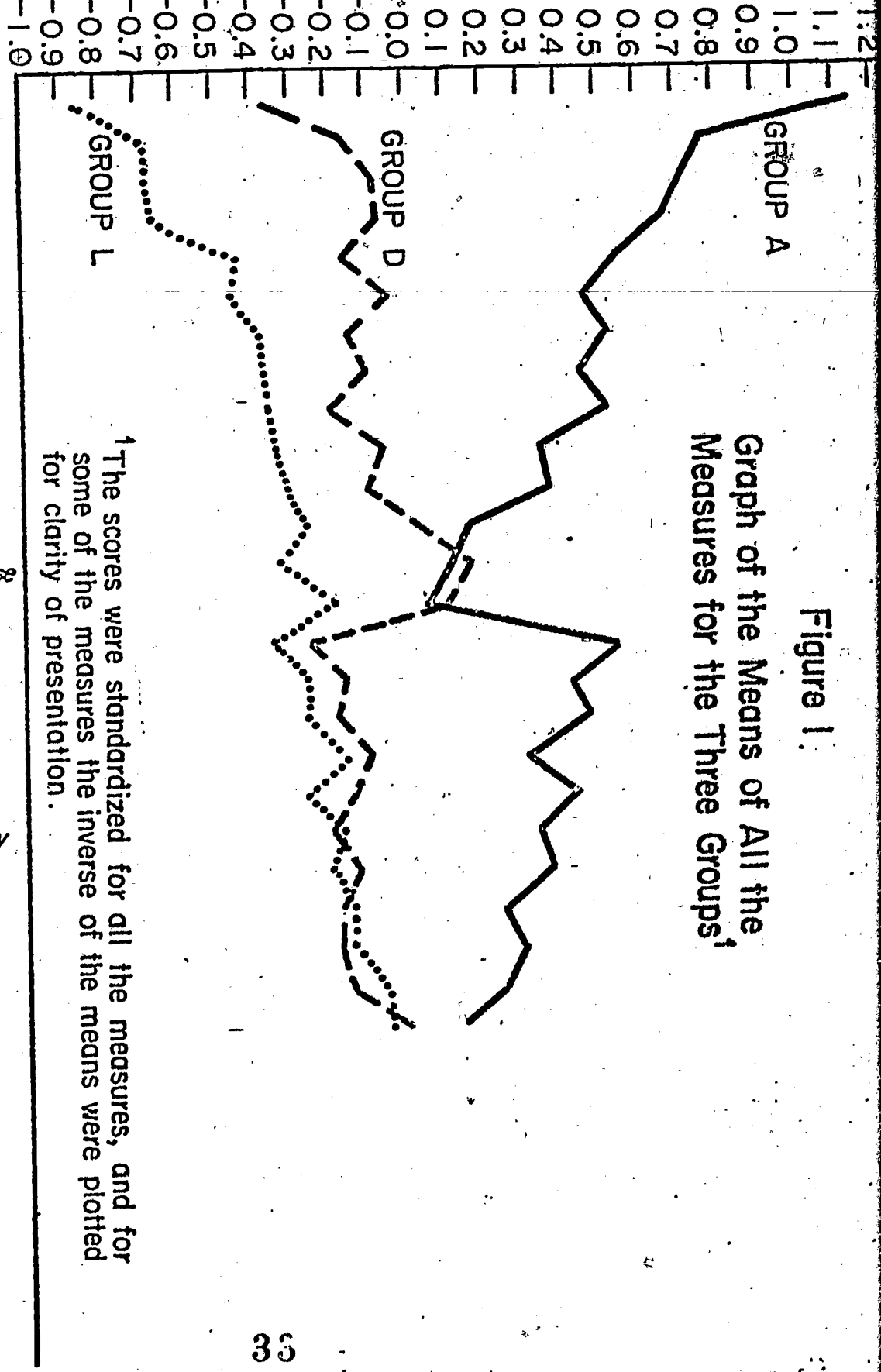

Figure 1.

Graph of the Means of All the Measures for the Three Groups[1]

[1]The scores were standardized for all the measures, and for some of the measures the inverse of the means were plotted for clarity of presentation.

1. Most
2. Drink for Tension Relief
3. Drinking: Troublesome Eff.
4. Coping: Oral Substances
5. Drinking: Comfortable Eff.
6. Drinking: Social Relax.
7. Depression: Zung
8. Depression: DACL
9. Disturbances: Total
10. Paranoid Thinking
11. Self-Esteem
12. Aggression
13. Coping: Non-Substance Use
14. Responsibility
15. Family Problem Distress
16. Stress Symptoms
17. Family Relations
18. External Control
19. Self-Control
20. Family Problem Frequency
21. Job Problem Distress
22. Total Problem Frequency
23. Suicidal Proclivity
24. Job Problem Frequency
25. Internal Control