PERSONALITY AND DRINKING HISTORY VARIABLES ASSOCIATED WITH HIGH ACCIDENT RATES AMONG ALCOHOLICS

by

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It has been established with confidence that alcoholics are a high risk group with regard to traffic accident involvement. Bjerver, Goldberg, and Linda (1955) in Sweden found that 33% of accident victims compared to only 14% of the general population were alcohol misusers, that is, persons who had received treatment at an alcoholism clinic or had been convicted of public intoxication in the past 10 years. A study by Schmidt and Smart (1959) in Canada found that, compared to the general population, alcoholics were involved in a significantly larger number of accidents per miles driven, and that most of these accidents occurred after alcohol ingestion. Despite this interest in alcoholic drivers, no efforts have been made to establish which personality or drinking history variables are associated with their accident involvement. The study by Schmidt and Smart (1959) found that numerous alcoholics among the 98 studied had no accident despite their long drinking and driving careers, but this study was not concerned with the differences between this group and those who had alcohol-related accidents. Investigations of the personality and drinking history correlates of accident involvement in this group could be important for several reasons. In the first place, they would add to our slight knowledge of driver factors associated with alcohol accidents in general. Second, they might indicate ways of identifying potentially dangerous alcoholic drivers with whom special legal or therapeutic interventions could be made. Third, these studies could suggest the types of drinking-driving behavior among alcoholics (and non-alcoholics) which are least likely to result in accidents. I am concerned here then with the personalities and the drinking-driving characteristics of clinically treated alcoholics involved in alcohol-related accidents.

One-Car Accidents

The personality variables were chosen on the basis of previous research findings. Drew, Colquhoun, and Long (1958) studied the effects of various alcohol dosages on the performance of non-alcoholics in a driving simulator. They found that extroverts made more tracking errors after alcohol than did introverts, whereas introverts made more changes in their driving speed. A significantly high proportion of accidents among alcoholic drivers are of the one-car type in which the driver runs off the road and strikes some fixed object. Because these accidents seem to involve tracking errors, it was predicted that accident drivers among alcoholics would show greater extroversion than would non-accident drivers.

Several researches using the Rosenzweig Picture Frustration Study have indicated that certain scores in this test are associated with accident involvement. For this test Rosenzweig has categorized aggressive reactions as to direction and type. Under directions are included extra punitiveness, in which aggression is turned into the environment; intro punitiveness, in which it is turned by the subject upon himself; and impunitiveness, in which aggression is avoided in an attempt to gloss over the frustration. Under type of reaction fall obstacle-dominance, in which the obstacle is emphasized, and ego-defensiveness, in which the ego of the subject predominates, and need-persistence, in which the solution of the frustrating problem is emphasized. In this test the subject is asked for his written responses to mildly frustrating situations and each response is categorized as to type and direction of aggression. Hence the subject’s

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characteristic aggressive responses to frustration may be determined. McGuire (1956) used this test to differentiate high and low accident groups and found that the high accident group has significantly lower scores on ego-defensiveness but higher scores on need-persistence. An exploratory study by Smart (1960) indicated that alcoholics involved in alcohol-related accidents had higher scores on extrapunitive than did alcoholics with no accident history. It was hypothesized here that alcohol releases aggressive responses and hence that accident drivers among the alcoholics should have high extrapunitive scores.

Untested Impressions

An earlier study of traffic accidents among alcoholics by Schmidt and Smart (1959) provided some indications that certain driving behaviors were clearly associated with alcohol-related accidents; however, this study was not designed to explore these relationships. Some alcoholics thought that their driving was impaired after drinking, but others did not and hence made no special efforts to drive carefully after drinking. The present study was designed to clarify some of these untested impressions. With regard to drinking behavior it was hypothesized that alcoholics involved in alcohol-related accidents as compared to alcoholics not so involved would: (1) Drink more frequently; (2) More often drink away from home, thus exposing themselves to more drinking-driving situations; (3) Drive less carefully after drinking and after drunkenness was achieved; (4) Make no special efforts to avoid drinking and driving occasions (i.e., by leaving car at home, having others drive them, etc.); (5) Have no explicitly stated rule governing their driving after drinking; (6) More frequently drive after heavy alcohol use; and (7) Claim that they can drive just as well after drinking as with no drinking beforehand.

Method

Personality tests and a drinking-driving questionnaire were administered to 70 alcoholic patients drawn from various clinics. All male patients utilizing these facilities during a two-month period were asked to participate. Only patients who had held a driver's license for at least three of the past ten years were included.

All subjects in this study were seen individually for the test and questionnaire administration. The tests administered were the Rosenzweig Picture Frustration Test and the Maudsley Personality Inventory.

The questionnaire consisted of a large number of items concerned with frequency and extent of drinking behavior, driving habits, and the frequency of driving after drinking. Questions were also concerned with the alcoholic's estimate of the care he takes in driving while intoxicated. These were supplemented by questions about accident involvement and the role of drinking in those accidents.

The 70 alcoholics interviewed were divided into two groups on the basis of their drinking-driving histories. One group of 42 contained alcoholics who were involved in at least one traffic accident in the past 10 years while they had alcohol in their bloodstream. The other group of 38 contained alcoholics not involved in any accident after drinking, although they might have been involved in an accident not preceded by alcohol use. The comparisons of personality and drinking-driving behaviors were made between these two groups designated “Alcohol-Accident Group,” and “No-Accident Group.”

Results

The results of the psychological test administration were all nonsignificant. The Alcohol-Accident Group and No-Accident Group did not differ in extroversion nor in extrapunitive scores as was predicted. In fact, there are no significant differences in any of the scores derived from the tests.

The data derived from the questionnaire concerning drinking and driving were organized into frequency tables for each behavior. These contingency data for the Alcohol-Accident and No-Accident Groups were compared by means of chi square tests. There were no differences between the groups in the frequency of drinking or in their usual location of drinking. The groups also did not differ in the estimates of increased or decreased care taken when driving after drinking or drunkenness nor the numbers which took buses or taxis after drinking.

Several of the differences between the two groups are of borderline significance (p<.10>.05), sufficiently large for an exploratory study of this type. These borderline differences indicate that those in the Alcohol-Accident Group less frequently drive after moderate use of alcohol (less than 7 ounces) and believe that other people drive just as well after two to five drinks as after one or more.
There are clear indications (p<.05) that those in the Alcohol-Accident Group more frequently drive after drinking large amounts of alcohol (more than 7 ounces) and that they more frequently believe that they themselves drive just as well after drinking (Tables 5 and 6).

Conclusion

This study failed to obtain results confirming the expected relationships between alcohol-accident involvement and personality characteristics. The hypothesized relation between accident involvement and extrapunishiveness was not supported. There were no differences between the group in extraversion or intelligence. However, a number of driving and drinking behaviors are associated with accident involvement. The alcoholics who had an alcohol-related accident less frequently had explicit rules prohibiting drinking and driving; they more frequently believe that they, and others, drive as well or better after drinking.

These results clearly indicate a difficulty in identifying high risk alcoholics from psychological test results. The findings were not consistent with expectations from earlier studies (McGuire, 1956; Drew, Colquhoun, and Long, 1958; Smart, 1960). However, these earlier studies, except for Smart's (1960), were not performed with alcoholic drivers and it is necessary to study additional personality features in alcoholics if this work is to be extended. Interest should probably focus now in actual road surveys of drivers involved in accident.Earlier surveys in this area have indicated that there are very wide variations in the blood-alcohol level of drivers involved in accidents. There are similarly wide variations in the degree of accident responsibility assigned to drivers with the same blood-alcohol level (Smith and Popham, 1951). One method of explaining these variations would be to investigate the personality characteristics of the drivers. It might be expected that alcoholic drivers in accidents caused by speeding would be introverted, but those drivers in accidents where steering errors are important would be extroverted.

A number of drinking-driving behaviors were found to be associated with alcohol-related accidents. These behaviors could provide a means for identifying high risk alcoholic drivers before they had an alcohol-related accident. Certainly, alcoholic drivers who believe they drive just as well after drinking could be seen as high risk alcoholics with regard to accident involvement. Special effort might be made to identify such alcoholic drivers in populations of drivers convicted of drunk or impaired driving in order to determine their number and relative risk compared to other driver groups. Once identified, special therapeutic or legal measures might be created to reduce their potential risk in driving situations. Perhaps clinical treatment or group psychotherapy could be attempted as has been suggested earlier (Schmidt and Smart, 1959).

Special educational programs directed toward the alcoholic driver might also utilize the results of this study. Such programs should be directed toward changing their belief that they and others drive just as well after drinking. Efforts could also be made to dissuade high risk alcoholic drivers from driving after large and moderate doses of alcohol.

It is interesting to note that certain drinking and driving behaviors are not associated with alcohol-related accidents even though they would appear to be on grounds of logic and natural observation. Taking buses or taxis after drinking is not more frequent among alcoholics who have no alcohol accidents, although they have a personal rule prohibiting drinking and driving. Another surprising finding is that the alcoholics' estimates of care taken in driving after drinking and drunkenness do not differ in the two groups. These estimates are, of course, retrospective, and actual observations made at the time of drinking might be entirely different.

DISCUSSION

Question: I would like to ask, do you feel that a study of 70 drinkers, not alcoholics, who are also drivers, would show the same differences between those who had accidents and those who had no accidents? In other words, is there a belief that there is something special about the alcoholic personality that will be useful for this?

Dr. Smart: It would be very difficult for me to predict right now what one would find, although this is something that should be done.

Question: How about 70 drinkers, not alcoholics, who are social drinkers?
Dr. Smart: I think that certainly would be interesting work to do. I really couldn't predict what one would find out. I think, as happens so often in this area when you start to research, you find out that even the most basic information for the general population is simply not available.

Question: Although your psychological tests did not indicate any significant differences, still I think some of the things you found, for instance this difference in personal rules and the certain heedlessness about driving after drinking a great deal, certainly denote differences to me anyway in personality. You may have feelings about whether or not the psychological test used just simply could not deliver, could not unearth these differences that perhaps other techniques interviewing a greater percentage might reveal.

Dr. Smart: Yes, I think this report shouldn't be taken as a general condemnation of psychological tests. I used only two tests, which, on the basis of earlier research, should have been useful. If one were to use a very broad range of tests you might get quite different results, except that you would have no explicit rationale for picking them to begin with. Some of your results might be random.

Question: Mr. Smart, I understand you said the test was on 80%?

Dr. Smart: 70 alcoholics.

Question: And 38 had had no accidents?

Dr. Smart: That is right.

Question: And they all drove after drinking?

Dr. Smart: Yes, frequently, but they were much more careful about it.

Question: But they were able to drive and drink and not have accidents?

Dr. Smart: There were many who were drinking and driving very frequently, and I think were probably doing it in a very careful way. Just on this point, you would get alcoholics you would think had lost control of a great deal of their behavior ability because of their drinking and who would say, "Well, that is one thing that I am always careful about. If I am drinking and driving, I go home by back streets, I drive especially slowly." But then you would get others of course who would get in the cars and hit the first thing that comes along. Well, I would like to comment about this report. There is a tremendous variability even among alcoholics in the kinds of difficulties they are causing. It may not be a homogeneous group, just as the social drinker group may not be a homogeneous group.