FACTORS INFLUENCING TREATMENT COMPLIANCE FOLLOWING DRUNK DRIVER INTERVENTION

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Summary. A followup study of treatment compliance was conducted at a regional driver intervention program with subjects who had been referred through courts. The study sought to identify relevant factors associated with an individual's decision to comply with a referral for follow-up substance abuse treatment, and secondly, to posit compliance models based on the results. Significant differences between compliers and non-compliers were identified in three broad categories -- court and coercion climate, assessment of drug abuse pathology, and personal developmental factors. The relationship between legal sanctions and therapeutic intervention was explored.

The study that I am reporting today is part of a larger treatment compliance initiative conducted at the Weekend Intervention Program (WIP) in Wright State University, Dayton, Ohio, between 1985 and 1986. This project was funded in part through the Department of Alcoholism and Alcohol Abuse of the State of Ohio. The goals of our treatment compliance study were three-fold: (1) delineate variables impacting treatment compliance following attendance at an impaired driver intervention program (2) describe the most common paths leading to treatment compliance (3) evaluate the effectiveness of the Weekend Intervention Program (WIP) in facilitating transition into treatment.

The WIP is operated through the Medical School at Wright State University. It is somewhat different from "educational" impaired driver programs, in that it provides an assessment requiring 13 hours of group and individual counselor contact with each attendee. There have been over 25,000 drunk driving offenders through this program in its ten years of operation, and at present there are approximately 40 courts that utilize this service as part of the arrest disposition.

Previous studies have demonstrated the WIP can differentiate high pathology drinkers from those with a lesser problem with a high degree of accuracy (Siegal, 1983; Siegal, 1984, Siegal & Moore, 1985). Also, recidivism rates among WIP attendees are lower than other Ohio cities when adjusted for DWI arrest rates (Siegal, 1984).

The WIP maintains three goals for each participant. The first is to provide a forensic assessment to the court of referral. Secondly, the WIP confronts defensive behaviors of the clients, including alcohol or drug-related denial, in order for participants to better understand their own relationship with mood altering drugs. The third goal of the WIP is to provide intervention and access to follow-up treatment when they are indicated.

A basic premise of our study was that treatment compliance would be predicted
primarily by court actions. We also were interested in the degree to which we could differentiate treatment compliance by specific courts. Experience also suggested that a percentage of WIP attendees voluntarily choose to attend treatment, and we wanted to investigate attributes of these voluntary compliers.

The theoretical framework that we utilized for this evaluation was the Health Belief Model as elaborated by Rosenstock (1975). Within this model, an individual's increased awareness of a health problem or risk coupled with a decrease in the barriers to treatment will be most likely to describe treatment compliance and subsequent changes in health maintenance behavior.

**Methodology**

**Study Design.** Subject selection consisted of non-random, serial selection of WIP attendees over a period of three months. The research design utilized paper/pencil and telephone survey questionnaires. Points of measurement included pre and post-WIP attendance, as well as a follow-up interview three months after this weekend experience. Study variables included general demographics, arrest history, blood alcohol levels at arrest, paper/pencil drinking evaluations, attitudes about intervention and treatment, self-evaluations of alcohol problem severity, and counselor assessments of alcohol problem severity.

The Drinking Satisfaction Scale (DSS) was created to measure attitudes and beliefs about drinking-related items, and it was administered at program intake and again at discharge. This 16 item Likert-scaled attitudinal survey (six choices from "strongly agree" to "strongly disagree") measured several dimensions of alcohol risk awareness and amenability to treatment. Participants also completed a pre/post five point self-assessment of problem drinking severity which ranged from "I have no problems with my drinking" to "I believe that I have a definite problem with my drinking". Following a weekend of contact, counselors also assigned a rating from the same drinking problem scale to each participant.

**Follow-up Interview.** An 84 item follow-up questionnaire contained questions on attitudes toward intervention, counselors, courts, family coercion, and also queries on specific behavior relative to the treatment recommendation. Telephone follow-up interviews were completed by trained counselors and medical students who had undergone two levels of interview training to increase inter-rater reliability. Participants were reimbursed $10 for a completed 20 minute follow-up interview.

Scheduling the follow-up interview three months after WIP attendance was believed a sufficient time for persons to initiate treatment. Verification of treatment compliance was accomplished by contacting the program specified by the WIP participant.

**Results**

A total of 765 individuals initially were included in this study. Of this portion, 64% had been recommended for alcohol or drug-specific treatment (n=478). Ultimately, follow-up interviews were completed on 232 persons who had been recommended for treatment. Few participants flatly refused to
participate in the follow-up study; however, we had difficulty in locating some persons. We were unable to schedule an interview with 150 of these individuals.

Of necessity, we changed the definition for "treatment complier". Because of the extended times required for some persons to complete their treatment obligations, we were unable to track all participants for this period of time. Therefore, a "complier" was defined as anyone who had attended at least two sessions of alcohol or drug treatment following their WIP attendance.

We were somewhat surprised, and pleased, to discover that 43% of all persons recommended for follow-up subsequently became treatment compliers. Thirty percent of the non-compliers stated that they had phoned treatment agencies, but they had decided not to follow through with their treatment recommendations past that point.

Demographic descriptors of clients failed to differentiate between the compliers and the non-compliers. This included employment status and health insurance benefits available. The most obvious reason for this finding may be connected with the fact that 64% of the treatment compliers were judged by the follow-up interviewer to have completed treatment due to real or perceived court coercion.

The compliers proved to be significantly more problematic in their relationship with alcohol than the non-compliers. This was determined by assessments made by the counseling staff. The problematic drinkers were, in almost every individual case, judged to be moderately or severely impaired by alcohol. Compliers also had a significantly higher prevalence of accidents at the time of the index offense (22% compared with 10% for non-compliers). Approximately one quarter of all treatment compliers had been involved in an automobile accident when they were arrested for the offense that brought them to the WIP.

As stated previously, 64% of the individuals in the study were coerced into treatment subsequent to court actions, or compliers thought the court required them to attend. Surprisingly, only five percent of the compliers attended treatment because of coercion through an employer: we had expected a higher figure here. Thirty-one percent of the compliers were termed "voluntary". We were not able to contact significant others or family members in this study, and as such, the impact of family coercion could not be adequately measured.

We took a finer cut in our investigation of the relationship between a court of referral and the WIP. We differentiated courts by whether they were routine users of the WIP or "casual" users. The routine courts referred slightly over half of the follow-up subjects, and in this case 133 out of the 232 persons. A routine court was defined as a court that uses the WIP program as a form of pre-sentence investigation, where the disposition of the impaired driving arrest is made after analysis of the written client report provided by the WIP. The "casual" courts tend to dispose of the drunk driving arrest prior to the attendee's presenting at the WIP. In this case, the likelihood of court coercion as a factor in treatment compliance is much lower. We were not surprised to find that the routine courts comprised 73% of all treatment compliers, and Chi-square analysis indicated that this difference was significant at p < 0.05. I will comment on this a little more fully when I
WIP participants, both compliers and non-compliers, made significant progress over the weekend in recognizing the problematic aspects of their drinking. This was determined by the Drinking Satisfaction Scale which we devised for this study. This instrument was factor analyzed utilizing orthogonal rotation, and five factors were found to be significant for pre/post administration. The five factors were 1) vulnerability and risk, 2) family concerns, 3) intent regarding drinking, 4) trust in the WIP, and 5) willingness to accept professional assistance. WIP participants made significant changes in their attitudes on all five factors during the course of their weekend experience.

The Drinking Satisfaction Scale also differentiated compliers from non-compliers in two areas. The compliers developed more awareness regarding their vulnerability and risk for future problems, and they also developed a much greater appreciation for how effective professional assistance could be in addressing an alcohol or drug-related problem. Similar to previous findings in this field, we discovered that treatment compliance needed to be initiated within three days for the voluntary compliers, or they would be far less likely to follow through with the treatment recommendation. Eighty percent of the voluntary treatment compliers made initial contact with a treatment agency within three days of their discharge from the WIP. By contrast, the coerced compliers took an average of one month to contact treatment programs, and in several cases, they had not initiated treatment even three months after their WIP attendance.

Discussion

At this point I would like to draw your attention to the treatment compliance model demonstrated in the schematic. Our analysis of treatment compliance resulted in this dichotomous model, where the degree of cooperation between the court and assessment/intervention program is the pivotal factor in differentiating treatment compliance. The schematic is divided into two columns, with "high cooperation" or high interaction courts on the left and "low cooperation" or low interaction courts on the right.

Notice that the order in which the offender interacts with intervention (WIP) and the court is different in each column, indicating whether or not the court is involved with any form of pre-sentence investigation prior to disposition of the index offense.

In the "High Cooperation" column, a wider range of offender profiles can be influenced to attend treatment. An individual who presents with low drinking pathology but high risk for recidivism, or someone who may think they were arrested for no more than a stroke of bad luck may still follow through with their recommendation for treatment. In this case the WIP's differential diagnosis, including an assessment of alcohol problem severity, signals the court that treatment coercion might be beneficial in this person's case. Fifty-four percent of those recommended for alcohol or drug treatment follow through when interacting with a high cooperation court.

On the other half of the schemata is the low-cooperation court. This type of court/education is most successful with individuals who experience high alcohol pathology. These persons are in crisis, and they are experiencing cognitive
dissonance regarding their own values, unwanted behaviors, and specific plans about future drinking. The court makes the disposition on their impaired driving offense and they report to the WIP.

Subsequent court coercion for treatment is unlikely following this juncture; however, the intervention process may positively influence treatment compliance without the assistance of the court.

The WIP provides a validation lens, in that it convinces people that the bad consequences they have been experiencing are understandable and can be avoided. The intervention experience increases an individual's awareness of risk in comprehensible terms. Twenty-seven percent of those persons coming from a "low cooperation" court complied with their recommendation for follow-up treatment.

In conclusion, I would like to point out that voluntary treatment compliance following intervention was attributed to approximately 31% of the impaired drivers that we served, and this figure was higher than we had initially expected. The use of pre-treatment assessment/intervention appears to have benefit for the judicial system and the impaired driver. In the future we would like to study over a longer period of time the outcome of treatment and its impact on impaired driver recidivism.

REFERENCES

Treatment Compliance Model for Convicted Impaired Drivers

High Cooperation

- Low Pathology
- Low Insight
- Bad Luck

Low Cooperation

- High Pathology
  - Crisis
  - Cognitive Dissonance

Arrest

Forensic Assessment
- Differential Diagnosis
  - Alcohol/Drug Path
  - Immaturity/Values
  - Mental Health
  - Situational

Court

Order to Comply or Sanction

Validation Lens
- Increase Risk Awareness
- Decrease Cognitive Dissonance
- Decrease Barriers to Treatment

54% 27%

Treatment Compliance
MORE INTENSIVE SERVICES FOR FIRST OFFENDER DRUNKEN DRIVERS

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Summary. First offender drunken drivers participated in a 40-hour education and rehabilitation program. At completion, offenders reported more negative attitudes toward heavy drinking, and drinking and driving. Attitudes toward drinking non-alcoholic beverages and AA were more positive. Participants in a 15-hour comparison program reported less change and changed in fewer areas.

Alcohol use contributes to between one-third and one-half of all highway fatalities (DHHS, 1987). Because drunken driving is a serious public health problem, education and rehabilitation programs are needed to reduce its occurrence.

Massachusetts has conducted driving while intoxicated (DWI) education and rehabilitation programs for first offender drunken drivers since 1975. The original eight week Massachusetts program for first offenders consisted of three diagnostic sessions designed to assess the extent of an individual's alcohol use, and eight weekly didactic educational sessions, totaling fifteen hours of contact. At program completion, continuation in a treatment program was recommended for clients diagnosed as alcohol abusers.

On July 1, 1987, in response to the belief that attitude change and subsequent behavior change in drunken drivers required a more extensive program, a 40-hour program for first offenders was implemented. The program in Massachusetts is now among the most stringent in the nation. It consists of a two-hour assessment, 32 hours of group education sessions, four hours of self-help meetings (e.g., AA), and one two-hour Victims Awareness (e.g., MADD) forum. The program requires 16 to 21 weeks, depending on the length of the weekly sessions (1.5 hours vs. 2 hours).

In order to assess the differential impact of the 15 and 40 hour DAE programs on clients' attitude and behavior relating to alcohol use and the hazards of drinking and driving, two evaluations of programs were conducted. Data collection for the evaluation of the 15 hour program was conducted in the Spring of 1987, before the implementation of the 40 hour program. Data collection for the evaluation of the 40 hour program was conducted in the Spring and Summer of 1988.

METHODS

Study Group Selection

In the 15 hour evaluation, 34 classes were surveyed in 23 programs (75% of a total of 31 DAE programs) in the Spring of 1987. Surveys were completed by 381 of the 485 (78%) clients eligible to participate in the 15 hour study. Complete data at all time points were available for 207 clients—54% of the study participants.
In the 40 hour evaluation, 51 classes were surveyed in 27 programs (66% of a total of 40 DAE programs). During the survey administration, 642 clients were eligible to participate in the evaluation and surveys were completed by 516 (80%) of those clients. Complete data at all time points were available for 306 clients, representing 59% of study participants. In both the 15 and 40 hour programs, participation in the study was voluntary and signed informed consents were obtained from all clients who participated.

**Instruments**

Self-report instruments measured levels of alcohol involvement (MAST; Selzer, 1971) and consumption, mood (Profile of Mood States; McNair, Lorr,& Droppleman, 1971) and defensiveness (Psychological Screening Instrument; Lanyon, 1973) and attitude and behavior change. Levels of alcohol consumption were measured at intake and at program completion by asking four questions which probed quantity and frequency of drinking 30 days prior to taking each survey and 30 days prior to arrest.

**Attitude and Behavior Change.** The evaluation utilized the framework of the Theory of Reasoned Action (Fishbein & Ajzen, 1975) to test the assumption that education will change attitudes and beliefs, and attitude change then influences behavior and subsequent behavior change. Attitude indices were developed to monitor change between intake and program completion. Scores were calculated so that the higher the score on the attitude index, the more positive the behavioral attitude.

Client evaluations of drinking behavior were assessed within the context of a specific situation. Five attitude indices were measured in the context of "being at a party with friends": 1) Attitude toward drinking a non-alcoholic beverage, 2) Attitude toward being high, 3) Attitude toward 6 or more drinks, 4) Attitude toward 5 drinks in 2 hours and 5) Attitude toward only one drink.

Three indices measured attitudes and beliefs toward Alcoholics Anonymous (AA), Mothers Against Drunk Driving (MADD) and toward drinking and driving. Two additional indices measured beliefs clients held about: 1) consequences of drinking and driving, and 2) beliefs clients held about friends' attitude toward their drinking and driving.

**Data Analysis**

To control for testing effects, a group (N=161) of 15 hour DAE clients whose classes were not part of the study were asked to complete the same survey at program completion as the study participants had completed. An analysis of variance showed no significant differences on index scores between the two groups at program completion. Repeated testing apparently did not affect the responses of the study participants.

Preliminary analysis computed paired t-tests for the 15 hour DAE study group and the 40 hour DAE study group on ten attitude/behavior change indices to assess change between intake and program completion for each group.

**Client Characteristics**

Within each study group, no significant differences on demographic variables existed between nonparticipants in the selected classes, participants who did not complete surveys at all time points, and participants who completed
surveys at all time points. The 15 and 40 hour study group participants were quite similar. They were primarily male (85%-82%), white (92%-95%), and had a mean age of about 32 years. Over half (54%-57%) of the sample had never been married. Most clients (78%-79%) reported that they were employed full time, with 41% to 44% earning at least $20,000 a year. One-third (33%-31%) lived with their parents. The average Blood Alcohol Content (BAC) for those who agreed to take the BAC test at time of arrest was .18-.17 mg%.

Compared to the 40 hour program (29%), a greater percentage of the 15 hour group was living with a spouse (37%). About 40% of the 15 hour and 31% of the 40 hour group reported being arrested for offenses other than DAE in the last six years. Three-fourths (76%) of the 15 hour and two-thirds (69%) of the 40 hour clients had used marijuana during their life, but a larger percentage of 40 hour clients reported use in the past year (42% vs. 30%). Lifetime use of cocaine was acknowledged by almost half of the clients (45%-46%) in both groups, although a greater percentage of 40 hour clients reported use in the past year (24%-17%).

RESULTS

Changes in Beliefs about the Consequences of Drinking and Driving

Of the ten indices measuring attitude change, the 40 hour group showed the greatest change on the index measuring beliefs about the consequences of drinking and driving. The 15 hour group showed no significant change in these beliefs between program intake and completion (table 1). By the end of the program, the clients in the 40 hour group were less likely to believe that after drinking five drinks in two hours they would be able to drive safely or be in control. They were more likely to agree that they would be in an accident, drive recklessly, and be stopped by the police. However, the 40 hour group clients started with more positive beliefs that drinking did not affect their driving than did clients in the 15 hour group. The 40 hour group's mean index score at intake was 25.7 versus 20.7 for the 15 hour group, but both groups were similar at program completion (21.1 versus 21.4). (See table 1).

The index that measured general beliefs about drinking and driving also showed significant positive change for the 40 hour group. At program completion the 40 hour group was significantly less likely to agree that some people could drink and drive safely after 1, 2, or 4 drinks, that DUIL arrests were due to bad luck, or that DUIL penalties were too severe. Again, 40 hour group clients initially held more positive beliefs about a person's ability to drink and drive safely than did clients from the 15 hour group.

Attitudes Toward Heavy Drinking

Both the 40 hour and the 15 hour groups displayed significantly more negative attitudes toward heavy drinking at program completion than at program intake. In comparison to their answers at intake, the 40 hour group clients reported at program completion that they would be more likely to injure themselves or not be in control after six drinks. At program completion, the 15 hour group clients reported they would be less likely to drink six or more drinks at a time. The most apparent change in attitude toward drinking six or more drinks at a time occurred during the second half of the 40 hour program.
At program completion, the clients in the 40 hour group stated that they were less likely to drink five drinks in two hours and that their driving would be impaired if they drank in this manner, whereas the 15 hour group showed no significant change on this scale. Once again, mean index scores indicated that the 15 hour group clients were somewhat less likely to engage in this behavior initially. Both groups developed a more positive attitude toward drinking non-alcoholic beverages in a party setting, indicating that such behavior was good or pleasant.

**Drinking Behavior**

The greatest drop in the percentage of clients who drank, as well as in the quantity of alcohol being drunk, occurred between arrest and program intake for both the 40 and 15 hour programs. A smaller decline occurred between intake and program completion. In the month prior to arrest, the average number of drinks was similar for both groups, 68 for the 40 hour group and 65 for the 15 hour group. In the month prior to program intake, however, more clients in the 40 hour group reported they were still drinking than clients in the 15 hour group (86% vs. 77%). In addition, those in the 40 hour group who were drinking during the month prior to intake reported an average of 37 drinks per month in contrast to the clients in the 15 hour group who averaged 26 drinks per month during this time.

At week 8 (program completion for the 15 hour study group) 74% of the clients in the 15 hour study group continued to drink an average of 25 drinks per month, while the 40 hour group showed little change between intake (37 drinks) and week 8 (40 drinks) of the DAE program. However, fewer clients in the 40 hour group were drinking at program completion (79%) as compared to intake (86%). Those who were drinking at program completion reported an average of 34 drinks per month, half their reported consumption in the month prior to arrest.

**Attitude toward AA and MADD**

The 40 hour group reported more positive attitudes toward participation in Alcoholics Anonymous (AA) and Mothers Against Drunk Driving (MADD) at program completion than program intake. Increased familiarity with these groups, greater comfortability with AA leaders, and a belief that MADD was beneficial contributed most to these changes. The 15 hour group clients did not change on the index overall. The 15 hour group did not attend a MADD forum and began with a more positive attitude toward AA than did the 40 hour group.

**DISCUSSION**

Influencing behaviors, particularly those behaviors associated with the consumption of alcohol, is difficult. Often the first step toward behavior change is a client's acceptance of negative attitudes and beliefs about drinking and driving. Once these beliefs are internalized, clients may question behaviors antithetical to their attitudes and beliefs. Appropriate changes in clients' attitudes and beliefs suggests that behavior may also change.

Significant positive changes in attitude toward AA and MADD were encouraging. Peer and social support help clients re-examine their drinking,
understand the self-help process, and sense the emotional impact that drinking and driving can have on victims and their families.

The 40 hour group, compared to the 15 hour participants, displayed more impaired attitudes and beliefs toward drinking and driving, and heavier drinking at the beginning of the program. Thus, more opportunity existed for change in the 40 hour group. Mean scores at program completion for the 40 hour group resembled the mean scores at intake for the 15 hour group. Several explanations of these differences are possible. One is that because everyone in the 40 hour program spent the same amount of time in treatment, they were less defensive and more honest about their alcohol use compared to the 15 hour clients who could be recommended for further treatment based on the extent of their alcohol abuse.

Another explanation is that fewer people are drinking and driving as a result of highly visible public information efforts to reduce drunk driving. Social drinkers would be most likely to heed this message, leaving the more seriously impaired drinking driver on the road. Finally, it may be that only the more impaired driver is being detected and arrested. The number of clients referred to DAE programs dropped by 2,133 admissions between FY'87 and FY'88, from 21,027 to 18,894 and continued to decline in FY '89. There was a corresponding drop in number of arraignments for OUI in the courts. If in fact more impaired clients are entering DAE programs, a lengthier, more intensive program model is particularly crucial. The evaluation of the driver alcohol education programs supports the contention that first offender drunk drivers require a lengthier program to change their attitudes and beliefs toward drinking and driving.

References


Table 1
Means and t-tests of Attitude and Belief Indices for the Driver Alcohol Education (DAE) Evaluation

<table>
<thead>
<tr>
<th>Indices</th>
<th>Length of Programs</th>
<th>Expected Change in Means</th>
<th>DAE Intake (Mean)</th>
<th>DAE Completion (Mean)</th>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Attitude Toward MADD*</td>
<td>40 Hour</td>
<td>Increase</td>
<td>21.4</td>
<td>22.5</td>
<td>1.1</td>
</tr>
</tbody>
</table>

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

a AA and MADD forums were not a mandatory component of the 15 Hour DAE program.
WORKSHOP PRESENTATIONS
(In order of presentation)