

## BRIEF REPORT

### A COMPARISON OF CESSATION STRATEGIES FOR THE OUTPATIENT ALCOHOLIC

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**Abstract**—The present study compared the relative effectiveness of group-administered covert sensitization, supportive group therapy, and a non-specific control in disrupting the drinking response of 28 outpatient alcoholics. Multiple measures of treatment outcome were examined to insure a more comprehensive assessment of treatment effects. These included (a) randomly sampled blood/alcohol levels, (b) reported mean daily drinking frequencies and (c) reported urges to drink. Results indicated that supportive group therapy was significantly more effective than the other two treatments in reducing subjects' reported daily drinking. No significant differences were found on measures of blood/alcohol concentration or subjects' ratings of frequency of urges to drink. All three groups reported significant improvement over time on urge ratings. Results seriously question the efficacy of covert sensitization in helping outpatient alcoholics reduce their intake of alcohol.

Various forms of aversion therapy have been investigated as an alternative to more traditional treatment of alcoholics or as a component of a multifaceted treatment approach. The most common aversive stimuli used with alcoholics have been chemical, electrical, and symbolic. Wilson (1978) has recommended the use of symbolic aversion (i.e., covert sensitization) over chemical and electrical on the grounds that, as a self-control technique, covert sensitization is ethically more appealing than the use of aversive stimuli administered by a therapist. Furthermore, since clients can practice covert sensitization at home, generalization of therapeutic gains to the natural environment may be enhanced (Thoresen & Mahoney, 1974).

Despite enthusiastic claims as to the effectiveness of covert sensitization in treating alcoholics, (Grodin & Cautela, 1981) the empirical evidence to date has been equivocal (cf. Krasnegor, 1980). Case studies using covert sensitization with alcoholics have reported abstinence rates between 83% and 100% (Anant, 1967; Cautela, 1970; Miller, 1959). Enthusiastic as these case studies have been, the inherent weaknesses in the case

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study design (e.g., lack of adequate controls and presentation of other confounding techniques) have rendered these studies suggestive at best. Evidence from well controlled studies on the efficacy of covert sensitization with alcoholics is lacking (cf. Mahoney, 1978). Ashem and Donner (1968) and Fleiger and Zingle (1973) each found a 40% abstinence rate for hospitalized alcoholics receiving covert sensitization. In another study, an average of 13 months abstinence post-discharge was found for 42% of the hospitalized alcoholics receiving covert sensitization (Elkins, 1980). Similarly, Hedberg and Campbell (1974) found a 40% abstinence rate for outpatient alcoholics treated with covert sensitization.

Methodological shortcomings of these studies have precluded a firm conclusion regarding the immediate effectiveness of covert sensitization. First, each of the studies failed to include an appropriate non-specific control group, thus making it impossible to determine whether treatment effects were due to the covert sensitization procedure per se or to non-specific treatment effects such as demand characteristics, or therapist contact. Secondly, these studies have relied on self-reported abstinence at follow-ups of several months or more. For example, in the Elkins study the first contact regarding patients' drinking status occurred 6 months after program discharge and this consisted of a telephone interview. None of the above studies reported data describing the *immediate* effects of the treatment on subjects' drinking behavior. Until a treatment method is demonstrated to be a powerful means of instituting change, evidence regarding its ability to ensure maintenance is suspect. That is, it is difficult to determine what initially produced the abstinent behavior. The importance of distinguishing between the induction and maintenance of behavior change cannot be overstated (Bandura, 1969). In a series of well-controlled single-case studies, Wilson and Tracey (1976) found covert sensitization to be relatively ineffective in suppressing the alcohol intake of hospitalized gamma-type alcoholics treated in a semi-natural laboratory setting. In addition, covert sensitization failed to enhance treatment outcome of a standard inpatient milieu treatment program for alcoholics (Olson, Ganley, Devine & Dorsey, 1981). Unfortunately, these results cannot be readily generalized to outpatient alcoholics.

The present study sought to compare the relative effectiveness of group-administered covert sensitization, supportive group therapy, and a non-specific control procedure in disrupting the drinking behavior of outpatient alcoholics. A second major purpose was to demonstrate the feasibility of obtaining randomly sampled blood/alcohol levels in the alcoholics' natural environment as a way to objectively assess treatment outcome.

## METHOD

### *Subjects*

Thirty-three subjects were selected from a population of 95 clients referred to the San Joaquin County Alcoholic Rehabilitation Clinic. Subjects had to meet the following criteria for inclusion in the study: (a) a Michigan Alcoholism Screening Test (MAST) score in the alcoholic range, (b) acknowledgement that alcohol was a problem in subjects' lives, (c) acknowledgement that they wanted help with their drinking, and (d) consent to have their blood/alcohol concentration (BAC) checked at home, without warning, at least once per week. Of the original 33 subjects who satisfied the entry criteria, four dropped out prior to the first treatment session and one dropped out after the second treatment session. Twenty-six of the 28 subjects (26 males, 2 females) who completed treatment were court referrals. The mean age and education (in years) for the non-specific control (N), covert sensitization (CS) and group therapy (G) conditions were 30.7 (10.0); 39.9 (10.1); and 30.9 (11.1) respectively. The highest percentage

of subjects were married ( $N = 62\%$ ,  $CS = 54\%$ , and  $G = 44\%$ ), with the remaining subjects evenly distributed between the single and divorced categories. Seventy-one percent of the subject sample were Caucasian, 18% were black and 11% were Mexican American. All but one subject were blue collar workers employed as unskilled (34%), semiskilled (27%) or skilled (39%) manual laborers. The average number of alcohol-related arrests were 2.2, 2.7, and 2.8 for the N, CS and G subjects respectively.

### *Apparatus*

The Alcohol Screening Device (Model No. 14625) designed for the National Highway Safety Administration, was used to assess subjects' BAC levels. This portable device requires the subject to blow into a sterilized plastic mouth piece for approximately 5 sec. The device then gives a digital display of the subjects' BAC level to the nearest one thousandth. Prior research conducted by the National Highway and Traffic Safety Administration has shown that this device is accurate within .01 mg/100 ml (Federal Register, 1973).

### *Treatment procedures*

*Intake interview.* Subjects were first seen at an initial intake interview held at the Alcoholic Rehabilitation Clinic. The interview lasted approximately 60-min. and served to assess the severity of the subject's drinking problem. In addition, each subject completed a social intake form and the MAST. Those subjects who met the entry criteria were randomly assigned to one of the following experimental groups: (a) group-administered covert sensitization, (b) non-specific control, and (c) supportive group therapy.

*Covert sensitization.* The covert sensitization treatment was administered to small groups of five or six subjects. The groups met for two 45-min. sessions per week for 6 weeks. The therapist was a second year graduate student in psychology with one year of previous clinical training in administering covert sensitization and progressive muscle relaxation. At the beginning of the first session, the standard treatment rationale for covert sensitization (Cautela, 1967) was presented to the subjects. To facilitate the construction of the covert sensitization scenes, subjects completed the Cautela Alcohol Questionnaire (Cautela, 1970). Subjects then began progressive muscle relaxation training as outlined by Wolpe and Lazarus (1966). Sessions 2 and 3 were devoted to relaxation training and discussion; sessions 4 through 8 to relaxation, pairing of noxious images with drinking, and discussion; and sessions 9 through 12 to pairing relaxation with images of refusing alcohol, and discussion.

Subjects were asked to practice the relaxation exercises and noxious imagery at home for 15 min. each day. The importance of the homework assignments was stressed during each session. A weekly measure of homework completion was obtained by having subjects rate on a 10-point scale the average daily number of minutes spent practicing the homework assignment. At the end of the final treatment session, subjects were told to continue using the relaxation exercises and aversive imagery whenever they had the urge to drink.

*Non-specific control.* The non-specific control procedure was administered to two groups of four subjects each. As in the covert sensitization treatment, the groups met for two 45-min. sessions per week for 6 weeks. Treatment groups were conducted by the same therapist as in the covert sensitization group. At the beginning of the first session, subjects were provided with a treatment rationale focusing on the tension reduction hypothesis of alcoholism (i.e., alcoholics drink in order to relax) and told that

relaxation therapy would be used to teach subjects how to relax without the use of alcohol. The Cautela Alcohol Questionnaire was then administered to provide comparable treatment to the covert sensitization group. Subjects then began progressive muscle relaxation training identical to that given the covert sensitization group. Sessions 2 and 3 were devoted to relaxation training and discussion; sessions 4 through 12 to relaxation training, relaxation imagery (the pairing of relaxation with pleasant images) and discussion. As in the covert sensitization group, subjects were asked to practice the relaxation exercises at home for 15 min. each day. The monitoring of subjects' completion of homework assignments was carried out using the same procedure as for the covert sensitization group.

*Supportive group therapy.* Subjects receiving supportive group therapy met for six weekly 90-min. sessions. Each of the nine subjects was assigned to one of several ongoing therapy groups, ranging from 10–15 alcoholics per group. Therapy was conducted by one of several regular Alcoholic Rehabilitation Clinic staff members (one group per staff member). The goal of therapy was to facilitate group discussion supportive of alcohol abstinence by members of the group and to generate alternative attitudes toward alcohol consumption.

#### *Dependent measures*

*Blood alcohol concentration.* Weekly BAC measures were obtained for all subjects throughout the study by four trained research assistants who were blind with respect to the treatment group of each subject. Measures were taken for 10 weeks (2 pretreatment, 6 treatment, and 2 posttreatment). The days and times of home visits were varied for each subject to increase the validity of the BAC measurements. Subjects were telephoned no more than 30 minutes prior to the intended BAC measure and informed that a staff member would be coming by their homes to check on their progress. BAC measures were not made before 11:00 a.m. or after 10:00 p.m. However, subjects were not informed of these limits.

*Self-reported mean daily drinking frequency.* During each weekly home visit for BAC measures, subjects were given a weekly drinking summary sheet and instructed to record the number of drinks consumed each day, when drinking occurred, and the place or situation while drinking. An attempt was made to impress upon the subjects the importance of accurate self-monitoring. Subjects were informed that they would not be criticized or punished in any way for reporting that they had been drinking. On each weekly home visit, subjects' completed data sheets were collected and new data sheets for the following week were provided. During the home visit, subjects' data sheets were inspected by the observer. Subjects who failed to provide data for a particular day(s) were then asked to write down their best estimate of the number of drinks consumed for each missing day. Subjects' reported daily drinking frequencies (including estimates of missing days) were used to compute a mean daily drinking frequency for each week of the study.

*Daily urges to drink.* During each of the 10 weekly home visits, subjects were asked to rate on a 10-point scale their mean daily number of urges to drink. Ratings of 1 or 2 indicated that subjects rarely thought about drinking, 3 to 8 that they sometimes thought about drinking (3 to 10 times per day) and 9 or 10 that they frequently thought about drinking. The decision to have subjects rate their urges rather than attempt to actually count the number of urges was based on results of pilot testing which indicated that subjects found urge counting to be too tedious to implement.

## RESULTS

Means and standard deviations for each of the dependent measures at pre- and post-treatment are presented in Table 1. Subjects' BAC levels, mean daily drinking frequencies, and urge ratings were analyzed within a  $3 \times 2$  repeated measures analysis of covariance (ANCOVA) with pretreatment scores as the covariate. Treatments served as the grouping factor and measurement periods (pre- and posttreatment) served as the trial factor. Reported drinking frequencies at the pretreatment measurement period differed significantly among the three treatment groups [ $F(2,24) = 12.3, p < .02$ ]. Subjects assigned to receive supportive group therapy reported significantly more drinking at the pretreatment measurement period than subjects assigned to either the non-specific control [ $T(17) = 2.60, p < .02$ ] or covert sensitization [ $T(17) = 2.55, p < .02$ ]. Results of the ANCOVA revealed a significant group by trial interaction [ $F(2,24) = 5.67, p < .05$ ]. While subjects in the covert sensitization and non-specific control groups reported a slight increase in their drinking from pre- to posttreatment, subjects receiving supportive group therapy reported a decrease in their reported daily drinking which approached significance [ $T(8) = 1.90, p < .10$ ]. A one-way ANOVA performed on subjects' gain scores (pre-post) revealed a significant difference among the three treatment groups [ $F(2,24) = 3.39, p = .05$ ]. Multiple comparisons of mean difference scores indicated that supportive group therapy was significantly more effective in reducing subjects' reported drinking than either covert sensitization [ $T(24) = 2.40, p < .02$ ] or the non-specific control [ $T(24) = 2.10, p < .05$ ].

Results of the ANCOVA on subjects' BAC levels indicated no significant group, trial, or group by trial interaction. While subjects in the covert sensitization and supportive group therapy conditions showed BAC changes in the positive direction, none of the three groups significantly lowered their BACs from the beginning to the end of treatment. Results of the ANCOVA on subjects' ratings of frequency of daily urges indicated no significant group effect; however a significant trial effect was obtained [ $F(1,25) = 26.10, p < .001$ ]. Within group analyses revealed that each of the three groups showed a significant pre- to posttreatment reduction in their ratings of urges to drink: Supportive group therapy [ $T(8) = 2.44, p < .05$ ]; covert sensitization [ $T(10) = 4.66, p < .001$ ]; non-specific control [ $T(7) = 3.80, p < .01$ ].

## DISCUSSION

The results of the present study strongly question the efficacy of covert sensitization for suppressing the alcohol intake of outpatient alcoholics. Data obtained from subjects' self-reported daily drinking as well as blood/alcohol level determinations suggest

Table 1. Means and standard deviations for outcome measures at pre- and posttreatment.

|                      | Non-specific Control<br>( <i>n</i> = 8) |      | Covert Sensitization<br>( <i>n</i> = 11) |      | Group Therapy<br>( <i>n</i> = 9) |      |
|----------------------|---|------|--|------|----------------------------------|------|
|                      | Pre                                     | Post | Pre                                      | Post | Pre                              | Post |
| Number of Drinks/day |   |      |  |      |                                  |      |
| Mean                 | .098                                    | 1.23 | 1.10                                     | 1.51 | 3.06                             | 1.46 |
| SD                   | 1.03                                    | 1.55 | 1.28                                     | 1.87 | 2.06                             | 1.82 |
| Blood/Alcohol Level  |   |      |  |      |                                  |      |
| Mean                 | .016                                    | .021 | .041                                     | .024 | .058                             | .022 |
| SD                   | .024                                    | .032 | .037                                     | .040 | .077                             | .024 |
| Urge Ratings         |   |      |  |      |                                  |      |
| Mean                 | 2.25                                    | 1.06 | 2.59                                     | 1.14 | 3.11                             | 1.16 |
| SD                   | 2.36                                    | 2.01 | 2.33                                     | 1.61 | 2.85                             | .099 |

that covert sensitization by itself was not effective in helping subjects reduce their intake of alcohol. Similar findings were obtained for the non-specific control. These negative findings are consistent with Wilson and Tracey's (1976) results showing covert sensitization to be ineffective in suppressing the alcohol intake of alcoholics in a semi-natural laboratory setting.

Several factors may account for the discrepancy in findings between the present study and those of Ashem and Donner (1968), Fleiger and Zingle (1973), or Hedberg and Campbell (1974). First, unlike the present study, Ashem and Donner (1968) and Fleiger and Zingle (1973) used hospitalized alcoholics. Since the hospitalization itself usually requires subjects to refrain from alcohol consumption, one cannot know whether the covert sensitization procedure had any effect on the initial suppression of subjects' drinking. It is possible that in these studies covert sensitization treatment exerted some beneficial influence on the maintenance of subjects' sobriety that had been achieved as a result of their hospitalization.

The failure of the present study to replicate Hedberg and Campbell's findings showing covert sensitization to be moderately effective with outpatient alcoholics is not surprising considering the methodological differences between the two studies. For instance, Hedberg and Campbell relied on self-reported abstinence at a 6-month follow-up as the major dependent measure, while the present study included daily monitoring of alcohol intake combined with randomly sampled blood/alcohol level determinations. It is possible that the more rigorous evaluation procedure employed in the present study was less subject to sources of bias (e.g., experimental demand, subjects' forgetfulness, etc.) which may have influenced outcome. Differences in duration of treatment may have also contributed to the discrepant findings. Hedberg and Campbell included 18 sessions spread over a 12-month period while the present study required 12 sessions over a relatively short 6-week period.

The superiority of supportive group therapy in reducing subjects' reported drinking must be interpreted with caution since results of the blood/alcohol determinations failed to corroborate the superiority of supportive group therapy in reducing subjects' drinking. Considerably more time was spent in supportive group therapy discussing the importance of abstinence. This may have created a greater demand for lowered alcohol consumption among group therapy subjects, thereby resulting in lowered self-reports of alcohol intake.

Results of subjects' ratings of their urges to drink suggested a consistent decrease in urge ratings from pre- to posttreatment for all three groups. This finding was not consistent with the hypothesis that specific pairings of aversive imagery with urges to drink (i.e., covert sensitization) would result in a significantly greater reduction in urges than supportive group therapy or the non-specific control. One possibility is that the methodology for assessing urges (i.e., having subjects rate the frequency of their urges) was not sensitive to actual changes in the frequency of subjects' urges. As was mentioned previously, pilot testing of several different assessment strategies for assessing urges indicated that subjects would not comply with an assessment strategy which involved daily tallying of urges to drink.

Although there is evidence to suggest that self-reported drinking history data given by alcoholics are reliable and valid (Sobell & Sobell, 1975, 1978), there is much less evidence on the reliability of self-reports of ongoing drinking behavior (Marlatt, 1978). Given the importance of self-reports of drinking behavior for evaluating treatment outcome with alcoholics, more research is needed in this area. The present study suggests that obtaining home blood/alcohol level determinations on a random basis each week

is a feasible, if laborious, procedure for which subjects will consent, thus establishing the usefulness of this measure for outcome research with outpatient alcoholics.

While it is always possible to offer post hoc explanations to account for the ineffectiveness of any treatment, results from the two studies which have assessed the immediate effects of covert sensitization with alcoholics i.e., the present study and Wilson and Tracey (1976) suggest that covert sensitization has little beneficial effect in helping alcoholics suppress their drinking.

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