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A Clinical Study of LSD Treatment in Alcoholism

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One hundred seventy-six male alcoholic patients participated in a controlled investigation of the differential efficacy of three LSD treatment procedures and a "no therapy," or milieu treatment, condition. Half of each group was also assigned to disulfiram after discharge from the hospital to determine whether any of these techniques could be enhanced by its use. Although significant improvement was shown within all treatment groups as measured by a number of clinical assessments in the post-treatment and follow-up periods, no one treatment condition proved to be superior. The authors conclude that the dramatic claims for the efficacy of LSD treatment in alcoholism are unjustified.

THIS REPORT represents the culmination of a three-year investigation designed to determine: a) whether there would be differential effectiveness among three experimental LSD treatment conditions and a control treatment condition and b) whether the effectiveness of any of these techniques could be enhanced by placing the patients on disulfiram (Antabuse) subsequent to hospital discharge.

In previous work with hospitalized narcotic drug addicts, it was noted that the application of a specialized therapeutic technique known as "hypnodelic therapy" produced significantly greater attitude change and symptom relief compared to other control treatment conditions(10). It was felt that the combined, simultaneous use of hypnosis along with the administration of LSD enabled therapists to control, structure, and channel the resulting drug reaction better than could be achieved by ordinary interpersonal psychosocial techniques(5, 7, 11). In this manner, patients could be prevented from drifting into "mental orbit" and could be forced to focus on and resolve their current problems by attempting to understand their psychological genesis. Since it was not possible to do a follow-up evaluation of these patients after hospital release, a definitive appraisal of this technique could not be made.

In order to pursue these initial studies, a large-scale controlled follow-up study with alcoholic patients was conducted. The hypnodelic treatment technique was to be compared with two other LSD techniques as well as with a "no therapy" condition. Also, to maximize the possibility for abstinence from alcohol following hospital discharge, the additional technique of disulfiram administration was incorporated into the treatment study design. Not only would study patients receive one or another of the experimental treatments but upon hospital release a selected sample would receive the drug disulfiram as well.

It was hypothesized that patients experiencing a favorable response to any of the experimental LSD treatment conditions would be more motivated to stay on disulfiram, should it be assigned to them, and therefore would do better than patients in the same treatment condition who were not given this drug.

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Procedure

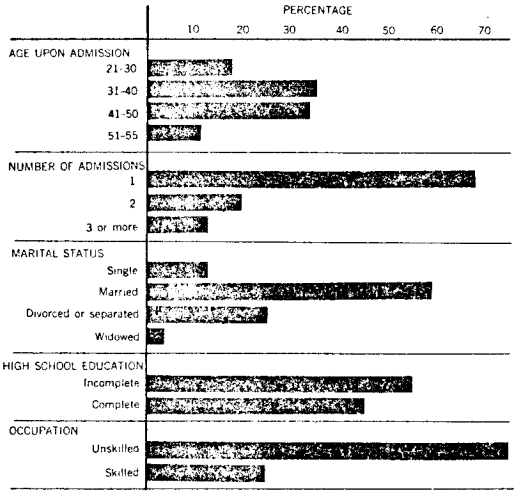
The entire inpatient treatment phase was conducted at the Alcoholic Treatment Center (ATC) of Mendota State Hospital. Male alcoholic patients were referred to this 30-bed center by the hospital admission wards to participate in the one-month inpatient milieu therapy program. This highly structured intensive program consisted of five therapeutic community meetings per week, small group therapy, lectures on the causes and effects of alcoholism, AA meetings, work assignments, and recreational and occupational therapy, as well as opportunities for individual counseling and rehabilitation planning.

Patient Selection and Recruitment

All patients who met the following criteria were considered as candidates for the study: 1) between the ages of 21 and 55; 2) up to four previous admissions to Mendota State Hospital for alcoholism; 3) no overt psychosis; 4) no evidence of serious neurological or physical disability; 5) contact with a responsible relative (who was not over 70 years old) within one year; and 6) residence within a specified geographical area. Selected demographic characteristics of the total study sample (N = 176) may be found in figure 1.

An initial interview was held with all suitable candidates, during which standardized explanations of the program were given and voluntary written consent secured. Of the 254 patients referred, 195 (76.77 percent) of the patients volunteered. For various reasons, 19 patients were dropped from the program before their treatment; therefore, 176 patients (69.29 percent of the patients interviewed) actually were treated.

Figure 1
Selected Demographic Characteristics of the Total Study Sample (N=176)



During this interview, patients were informed that they would be offered one of four major treatment conditions on one occasion, as well as the possibility of receiving disulfiram for one year (supplied free) just prior to and following hospital discharge. In order to reduce patient bias toward their assigned treatment condition, which included the later possibility of disulfiram, patients were told that all treatments were equally effective and that the particular treatment they received would be chosen especially for them on the basis of their pretreatment psychological testing and clinical interviews. In actuality, both the treatment conditions and therapists were assigned randomly to the patients.

In addition patients were told that they would receive an extensive pretreatment and post-treatment inpatient evaluation and be expected to return to the hospital for the scheduled follow-up visits and evaluations. They were further informed that a responsible relative would be contacted prior to treatment and at the six- and 12-month intervals following hospital release.

Treatment Procedure

A single standardized preparatory session was held for each patient. This session, lasting approximately two hours, was roughly divided into two parts. The first hour and a half was devoted to psychiatric information gathering relevant to the following areas: a) chief complaints, b) past history (especially family and marital), c) self-description, d) history of alcohol consumption, e) psychosocial history, and f) treatment expectations. On the basis of this information, therapists were to formulate the major problem areas that would be dealt with during the experimental treatment session.

After this information was obtained, the therapist gathered certain other data, such as measures of patient suggestibility. The patients were then told they would be called back for their specific treatment session within the next few days. It is important to mention that at this point neither the therapist nor the patient knew which treatment would be administered. To diminish the possibility of bias, therapists were told which treatment they were to conduct just prior to the actual treatment session.

For all treatment conditions involving LSD, the patient received 3μg. per kg. body weight of LSD at the beginning of the session. Regardless of the condition, all sessions occurred in the morning and lasted approximately three hours. Following this patients were brought to an observation room where they remained throughout the day and overnight. Specially trained nurses observed them frequently during this time, took vital signs, administered nighttime sedation, and offered supportive therapy when indicated. Since detailed descriptions of the three LSD treatment conditions may be found elsewhere(4, 10, 11), only a brief review of these procedures will be given now.

Hypnodelic therapy condition (hypnosis + LSD + psychotherapy). After the appropriate dosage of LSD was given, a hypnotic induction, lasting 30 to 45 minutes, was performed. During the induction, an attempt was made to bring the patient into as deep a trance as possible. At the end of the induction, an active, dynamically oriented psychotherapy was begun with the primary focus on major problem areas. Hypnotic control was periodically reinforced through appropriate suggestions and techniques.

Psychedelic therapy condition (LSD + psychotherapy). The patients were administered LSD and told to begin talking about their problems. As in the hypnodelic condition, therapists began to engage in a similar form of active psychotherapy.

Drug therapy condition (LSD alone). Patients were simply given the appropriate dosage of LSD and were instructed to relax and begin thinking about their problems. Although the therapists remained in the treatment room throughout the session, patients were told they would have to solve their problems themselves with the aid of this drug. Once the session began, therapists were not to engage in any dialogue with patients except for offering them brief support if patients began to appear anxious or panicky.

No therapy, or milieu therapy (MT), condition. Patients assigned to this condition were required to spend an equivalent amount of time in the treatment room in "contemplation and meditation" by themselves. They were asked to do an "honest personal inventory," write down the reasons for their problems, and make constructive plans for the future. Since no active or specific form of psychotherapy or drug therapy was administered during these sessions, we have viewed them as a representation of the basic milieu treatment program of the ATC.

Following each of the four therapy conditions, patients had an opportunity to "work through" any residual problems in their ongoing formal group therapy program at the ATC. Since all patients were exposed to a similar hospital milieu both prior to and following their experimental therapy experience, it was assumed that any differences noted among the three LSD and no therapy control conditions could be attributed to the specific treatments involved.

Disulfiram assignment. Prior to hospital release (after post-treatment inpatient evaluation), patients were informed whether or not they would receive disulfiram. Selection to receive this drug was determined on a random basis, ensuring that one-half the patients within each of the four major treatment groups would be assigned. Those selected were told that evaluations indicated the drug would be most helpful for them. They were strongly encouraged to take a fixed, prescribed dosage every day, instructed on the dangers of imbibing alcohol while on disulfiram, given a disulfiram identification card for their wallets, and started on the drug four days prior to hospital discharge. They were given a six-month supply of the drug (renewable for another six months) and instructed to take one 0.5 gram tablet per day. Although the practice of some clinicians is to give a test dose of alcohol to patients treated with disulfiram to establish

TABLE 1
Basic Factorial Research Design

DISULFIRAM THERAPY	MILIEU	HYPNODELIC	PSYCHEDELIC	DRUG ALONE	TOTAL
No	22	22	22	22	88
Yes	22	22	22	22	88
Total	44	44	44	44	176

an aversive conditioning situation, this was not done in this experiment.

Experimental Design

Forty-four patients were assigned in a fixed random order to each treatment condition, with half of each group receiving disulfiram just prior to and after discharge. Table 1 shows the basic factorial research design employed for this study.

Therapists

Thirteen psychiatrists participated as therapists in the study. In an attempt to control the variable of therapeutic skill to avoid biasing treatment results, each therapist was assigned an equal number of patients in each of the treatment conditions. Therefore each therapist was responsible for treating either one or two blocks of eight patients—each patient receiving one of the four experimental treatment conditions and one-half of the patients receiving disulfiram.

It is important to mention that all participating therapists were trained by the principal investigator in the techniques of hypnosis and the administration of LSD prior to the project. Extensive reading material was assigned and demonstration sessions were arranged. The therapists did not receive a dose of LSD nor were they hypnotized as part of the training procedure.

Evaluation Instruments

In order to evaluate treatment outcome adequately, measures assessing the patient's symptomatology and personality characteristics were employed along with measures evaluating observable behavior and social adjustment. The rationale for the necessity of evaluating these areas is given elsewhere (8). The specific instruments employed in this study to evaluate treatment efficacy were as follows:

1. Symptomatology and personality characteristics—the California Psychological Inventory (CPI)(3) and the Psychiatric Evaluation Profile (PEP)(6). The PEP is a self-report inventory composed of six factors, four of which are directly interpretable in terms of improvement or deterioration in the patient's psychological health. These four factors are designated as Distress, Distrust, Optimism, and Competence. Scores may vary between 0 and 100, with high scores indicating more illness on the Distress and Distrust factors, while high scores indicate more health on the Optimism and Competence factors.

2. Observable or reportable behavior—the Breathalyzer(1, 2) and the Drinking Follow-up Form (DFF). The Breathalyzer is a highly reliable and sensitive instrument for determining blood alcohol level from a sample of expired air. Although the instrument cannot be used to evaluate drinking behavior during the interval between follow-ups, it produces virtually incontrovertible evidence for sobriety or inebriation at the time breath samples are obtained. The Drinking Follow-up Form was devised to obtain from patients information regarding their drinking behavior on a month-to-month basis.

3. Social adjustment—the Behavior Rating Scale (BRS)(9). This rating scale was constructed to permit evaluation of patient social adjustment in six general areas: a) home interpersonal relationships, b) social interpersonal relationships, c) personal social responsibilities, d) employment, e) drinking pattern, and f) legal adjustment. Scores for each area can be combined to form a total adjustment score. An equivalent form of this scale was administered to relatives. Follow-up personnel administered this scale by conducting a 30- to 45-minute structured interview. On the basis of the patient's answers, ratings were made for each subscale. The best possible adjustment

would be represented by a score of 24 and the worst possible adjustment by a score of 6 on this rating scale.

Evaluation Procedure

Because of the possibility of biasing the evaluation of outcome, a procedure was set up whereby the treatment team was separated entirely from the follow-up evaluation team. Not only did therapists not know the treatment condition they would administer until the morning of the actual treatment session, but they were also kept uninformed about all prior and follow-up testing of patients.

The two follow-up social workers were also kept "blind" about the treatment of their assigned patients and were forbidden to discuss the patients with any of the therapists. The trained nurses and other ward staff who ministered to these study patients following treatment knew who had received LSD and who had not, but they were not told which of the three LSD conditions the patients received. Undoubtedly, some leakage of information among staff must have occurred, but, considering the scope of the project, this leakage was considered to be negligible.

The treatment outcome evaluation was divided into two phases—inpatient and follow-up. In the inpatient phase, evaluation was directed toward the effects of treatment on symptomatology and personality change. The follow-up phase focused on similar parameters but also included evaluation of behavior and community adjustment in a real life setting. The schedule for the administration of testing instruments is given in table 2.

Inpatient evaluation. After the patients were accepted into the project, baseline measures for the battery of assessment instruments were obtained on all study patients approximately one week prior to the experimental treatment session. It was at this time that a responsible relative was contacted and asked to provide additional information. Shortly thereafter, the patient was seen by his assigned therapist for his initial session and then, later, for the actual treatment session. Approximately ten days to two weeks after treatment, evaluation was conducted again.

Follow-up evaluation. The follow-up evaluation periods were at three, six, nine, and 12 months after hospital discharge. A follow-up was regarded as successful only when the patient could be interviewed directly on a face-to-face basis (information acquired through phone calls, letters, etc., was not regarded as valid data). Formal contact with relatives was scheduled for the six- and 12-month periods. In order to increase patient motivation to partake in the follow-up evaluation (even though each had originally promised to do so to be eligible for the study), a monetary incentive was added for the nine- and 12-month periods. If the patient voluntarily came in for the nine- and 12-month sessions, he would receive $35: he would receive $25 if he came in only for the 12-month session.

Since alcoholics are notoriously poor cooperators in follow-up studies, our follow-up philosophy was necessarily aggressive. If patients refused to come back to the hospital for evaluation, our follow-up workers would seek them out, even if this meant conducting interviews at patient homes, in bars, in jail, or at the place of their employment. With such a follow-up approach, we successfully

TABLE 2

Schedule for Administration of Testing Instruments

	INPATIENT		FOLLOW-UP (MONTH)			
INSTRUMENT	BEFORE TREATMENT	AFTER TREATMENT	THREE	SIX	NINE	12
CPI	X	X				X
PEP	X	X	X	X	X	X
BA			X	X	X	X
DFF			X	X	X	X
BRS	X		X	X	X	X
BRS (relative)	X			X		X

secured the required information on 92.04 percent, 94.31 percent, 87.50 percent, and 96.02 percent of the total sample of study patients at the three-, six-, nine-, and 12-month periods, respectively.

A general schema for the overall evaluation procedure may be found in table 3.

Results

Inpatient Evaluation

As noted previously, inpatient evaluation focused on symptomatology and personality change, since no relevant behavioral or social adjustment performance could be evaluated. Patients were evaluated prior to treatment and two weeks after the experimental treatment session but before being assigned to disulfiram therapy.

Significance of pretreatment to post-treatment change was assessed by t tests for correlated means for each treatment group separately. Comparison among the four treatment groups was made using analysis of covariance, with the baseline score serving as the covariant. Scores were available for six factors on the Psychiatric Evaluation Profile and for 18 scales on the California Psychological Inventory. The results of these analyses revealed statistically significant (p equal to or less than .05) changes in the direction of health or improvement from baseline to post-treatment evaluation for all the treatment groups in most measures. However, comparison among the treatment groups failed to show any consistent significant differences. This indicated that there was an overall improvement for all treatment groups, but the specific form of treatment, whether LSD was used or not, did not produce differential treatment effects.

TABLE 3

General Schema for the Overall Evaluation Procedure

INPATIENT PHASE:

1. Patient admitted to ATC unit. If patient meets criteria, initial interview is conducted.
2. Pretreatment evaluation by 1) social worker, 2) research associate, and 3) therapist. Responsible relative contacted by social worker.
3. Treatment
4. Post-treatment evaluation: 1) Patient seen by research associate. 2) Patient informed about disulfiram procedure, if assigned.
5. Discharge

FOLLOW-UP PHASE:

6. Three-month follow-up: Social worker completes appropriate procedures. Next interview scheduled.
7. Six-month follow-up: Social worker completes appropriate procedures. Disulfiram renewed, if assigned. Responsible relative contacted by social worker. Next interview scheduled.
8. Nine-month follow-up: Social worker completes appropriate procedures. Next interview scheduled.
9. Twelve-month follow-up: Social worker completes appropriate procedures. Responsible relative contacted by social worker.

Follow-Up Evaluation

Although inpatient evaluation is important, any technique used to treat alcoholism must be judged by its effect on the patient after he has left the hospital. The effect of the treatment on drinking behavior is of course essential, but the patient's adjustment with family, employment status, and difficulty with the law must also be assessed. In addition to the patient's own report of his adjustment, even if this is obtained in a face-to-face interview, a similar assessment from a close relative of the patient provides the basis for an even sounder evaluation.

Since half the patients in each of the four treatment groups received disulfiram after leaving the hospital, we must now deal with two factors of therapy—the type of experimental treatment and whether or not disulfiram was subsequently administered.

FIGURE 2

Cumulative Percentage of Patients Who Returned to Drinking

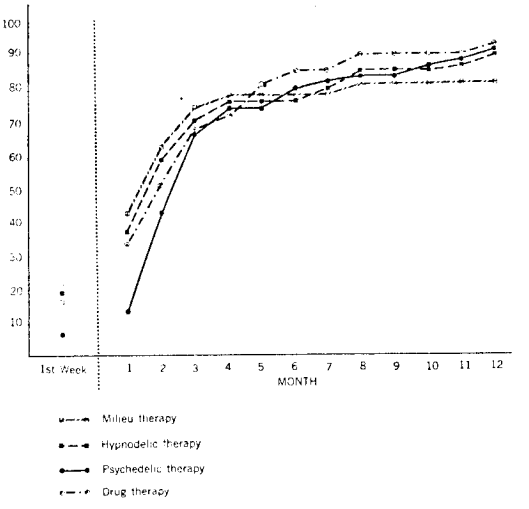
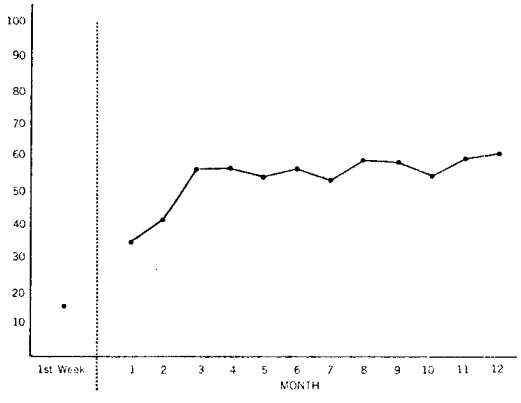


FIGURE 3
Percentage of Patients Drinking During Any Given Month



Therefore, to compare the different treatment groups, a two-way analysis of covariance was used.

Observable or reportable behavior (i.e., drinking behavior). Figure 2 graphically depicts on a monthly basis (from information collected every three months) the cumulative percentage of patients in each of the four experimental treatment groups who returned to drinking. As can be seen, there is a sharp increase during the first three months, followed by a general plateauing from six to 12 months. Differences between the treatment groups are minimal.

Figure 3 depicts the percentage of patients drinking during any given month. There is a sharp rise during the first three months, followed by a general plateauing at about 55 percent from months four through 12.

At this point, it also seems appropriate to examine separately the drinking pattern subscale of the Behavior Rating Scale to evaluate whether improvement over baseline levels occurred due to treatment. Baseline to post-treatment t tests revealed significant improvement for every group at every period, while two-way analysis of covariance revealed no significant differences among the treatment groups, between the group on disulfiram and the group not taking it, and no interaction between the treatment group and whether disulfiram was subsequently administered or not.

Ratings based on interviews with relatives at the six- and 12-month periods revealed identical results: that is, significant decrease in drinking pretreatment to post-treatment but no differential results based on type of treatment or disulfiram administration.

Objective measurements of blood alcohol levels at the time of patient interviews at six months and 12 months revealed no differences between the disulfiram group and the group not taking disulfiram or among the treatment groups.

Social adjustment. Table 4 gives the mean total adjustment scores on the Behavior Rating Scale (BRS) for each of the treatment and disulfiram groups at the three-, six-, nine-, and 12-month periods. Analysis of covariance among the groups reveals no significant differences for any period, but pretreatment to post-treatment t tests reveal significant improvement at every period. Similar results were obtained from the relative ratings of total adjustment at the six- and 12-month periods.

Symptomatology and personality characteristics. The Psychiatric Evaluation Profile (PEP) and California Psychological Inventory (CPI) were used to assess this area of outcome. Table 5 shows the mean PEP scores obtained at the six- and 12-month evaluation periods (adjusted for initial level) for each of the treatment and disulfiram groups. In general, two-way analyses of covariance among the treatment and disulfiram groups produced no significant differences for any of the four PEP factors, but, as found on other measures, pretreatment to post-treatment t tests revealed consistent significant improvement on the Distress and Competence factors for all treatment groups. Inconsistent results were obtained on the other two PEP factors.

Because the California Psychological Inventory is composed of 18 individual scales, results using this instrument are too

TABLE 4
Mean Total Adjustment Scores on the BRS

TREATMENT	MONTH			
	THREE	SIX	NINE	12
No therapy, or milieu	16.1	16.2	17.7	16.8
Hypnodelic	17.3	16.6	17.0	17.0
Psychedelic	17.6	16.4	17.5	17.3
Drug alone	16.5	16.3	16.5	16.0
No disulfiram	17.0	16.6	17.8	16.9
Disulfiram therapy	16.7	16.2	16.6	16.7

TABLE 5

Mean Psychiatric Evaluation Profile Scores

TREATMENT	DISTRESS		DISTRUST		OPTIMISM		COMPETENCE	
	6 MOS.	12 MOS.	6 MOS.	12 MOS.	6 MOS.	12 MOS.	6 MOS.	12 MOS.
No therapy, or milieu	37.3	33.3	36.5	36.0	63.6	64.9	63.1	64.5
Hypnodelic	34.7	34.4	37.3	37.5	63.6	64.3	64.2	64.8
Psychedelic	34.7	31.6	36.6	36.8	62.9	67.2	62.5	65.8
Drug alone	36.7	34.9	39.0	37.7	65.8	64.2	64.3	63.1
No disulfiram	36.5	34.9	36.8	37.0	63.0	64.7	62.4	64.0
Disulfiram therapy	35.1	32.1	37.8	36.9	64.9	65.6	64.6	65.1

extensive to be presented in tabular form, but the results obtained are very similar to the above reported results. Namely, there is improvement from pretreatment to post-treatment testing on most measures but no differential outcome results based on the different treatment techniques.

Discussion

It would be professionally gratifying to report significant results for the hypnodelic treatment technique as well as for the other LSD treatment conditions not only for the purpose of cross-validating our prior findings with drug addicts but also for making some contribution to the treatment of alcoholism. Unfortunately, our conscious wishes must yield to the overwhelming evidence that none of the LSD treatment procedures produces any greater therapeutic benefit than can be realized by the "no therapy" condition in the context of the general ward milieu program. It is not that substantial gains do not occur following these experimental procedures, for our results indicate significant improvement on most measures both at inpatient and follow-up evaluations for each of the four experimental conditions; rather, it appears that the gains are relatively similar for all conditions, including that of no therapy.

To a large extent, these research findings did not conform to the frequently dramatic responses of patients observed clinically shortly after the various LSD treatments. In verbal accounts and written statements obtained immediately after the experimental treatments, it was rather common for patients to claim significant insights into their problems, to feel that they had been given a new lease on life, and to make a strong resolution to discontinue their drinking. These affirmations were often so convincing that ward staff could not help but be impressed with the effects of the treatment procedures. However, with the accumulation of follow-up data, we soon began to harbor serious doubts about the validity of the patients' statements.

In initial studies assessing the relationship of attitude to behavior(9) and the degree of alteration in consciousness produced by the LSD procedures to subsequent personality change(12), we came to feel that these parameters of patient experience and functioning were relatively independent and that it would be invalid to extrapolate to behavioral or social adjustment results from these parameters(8). If a "no therapy" control group had not been used, the treatment results of all three LSD procedures would have seemed most impressive, corroborating the clinical impressions of patient improvement noted shortly after therapy. However, by employing a controlled comparison design, we were able to ascertain that the therapeutic affirmations and resurgence of constructive motivation following LSD procedures did not ensure any better treatment response than simple exposure to the hospital ward milieu.

The matter of relatively sustained therapeutic gain following any of these therapy conditions deserves further comment. In a way, this finding should not prove so surprising considering the deteriorated physical and emotional state of patients at the time of hospital admission. With the opportunity for medical care, adequate nutrition, group discussion of their problems, exposure to an anti-drinking but supportive environment, and, most important, the sudden cessation of drinking and

the perpetuation of this sobriety for at least one month, the vicious circle of chronic alcoholism tends to be disrupted, enabling the patient to regain some self-confidence and gain some perspective on the personal and social consequences of his drinking behavior.

Despite this overall improvement in patients, the total treatment program is generally unsuccessful in producing sobriety. This is attested to by the high percentage of patients falling off the wagon by the three-month period (65 percent) and reaching 80 to 90 percent by the 12-month evaluation. On the surface, this finding contradicts the general improvement in patients noted on our attitude and social adjustment measures. It must be made clear, however, that return to drink does not imply sustained, continued drinking behavior thereafter or even a serious disruption of gains made in other areas of performance.

For example, this cumulative percentage of patients returning to drink masks the finding that at any given month after three months only 50 to 60 percent of the patients are drinking. This is still poor testimony to the adequacy of a treatment program stressing the virtues of sobriety, but it indicates that most patients are able to carry on most of their other social tasks at least at a higher level than that noted on hospital admission, while engaging in periodic drinking. Furthermore, it seems that during the one-year period of follow-up, maladaptive patterns of behavior are not reestablished at their previous level.

Concerning the comparisons between patients treated with disulfiram and those not, we again find the overall follow-up results to be very disappointing. At none of the four postdischarge evaluation periods does the assignment of disulfiram make any difference in terms of treatment outcome. We are not naive enough to believe that the assignment of disulfiram to patients means that they will necessarily take the drug. In fact, our follow-up data indicate that almost all patients for whom disulfiram is prescribed, regardless of the experimental treatment previously received, tend to stop taking it sometime within the year of follow-up.

Since the problems of administering disulfiram are numerous and of considerable importance, we shall reserve discussion of them for a later report. For present purposes, suffice it to say that we do not regard this drug as an ineffective agent in itself: it is almost tautological to state that patients who religiously take this drug will remain abstinent from alcohol. Rather, the major therapeutic problem seems to be the failure of any of the experimental treatment conditions to stimulate sufficient motivation for patients to continue taking this drug after hospital discharge.

It could be argued by staunch devotees of LSD therapy that the failure to obtain dramatic or even significant results with the three LSD conditions is due to two basic faults of the experimental treatment program: a) insufficient preparation of patients prior to their LSD treatment and b) inadequate follow-up care, which excludes the possibility of administering additional treatments. Concerning the first matter, virtually all patients seemed sufficiently prepared so as to experience the panoramic, spectacular effects of this drug without any adverse reactions (only two LSD sessions had to be terminated). For the most part, especially with the hypnodelic and psychedelic conditions, the patients' responses during therapy and their enthusiastic testimonials immediately following therapy were all that could have been hoped for. The difficulty was that these claims had little impact on the criterion measures for treatment outcome.

With regard to the second criticism, further treatment would have some merit if we had seen even a glimmer or trend of greater therapeutic benefit due to any of these experimental conditions. The fact that no encouraging signs were noted at the post-treatment inpatient evaluation or even at the three-month postdischarge evaluation indicated the futility of administering further treatment sessions.

Another matter bears comment. This pertains to the possible difference in therapist skill as a crucial variable in affecting treatment outcome. It is certainly reasonable to assume that a given psychiatric treatment or form of psychotherapy may be more effectively administered by one psychiatrist than another. We have attempted to control for this variable by assigning therapists an

equal number of patients in each experimental treatment category, thereby balancing out their personal charisma or competence over all conditions. Moreover, in preliminary statistical analyses we have stratified on the variables of therapist differences and degree of clinical experience on our criterion measures. The results obtained cause us to conclude that these therapist variables are insignificant in influencing treatment effect.

As a final note, it must be emphasized that the major focus of this report has been to present a relatively uncomplicated analysis of treatment outcome in heterogeneous samples of chronic alcoholic patients randomly assigned to the experimental treatment conditions. It is possible that further analyses (already in progress) aimed at determining which types of patients respond best to which types of treatment, or controlling for potentially important variables (i.e., suggestibility, measures of motivation for treatment, etc.), may yield results which will cause us to modify our current conclusions. This is a possibility but one that is highly unlikely.

The overwhelming, consistent, empirical findings force us to conclude that the various LSD procedures, as used in this study, do not offer any more for the treatment of alcoholism than an intensive milieu therapy program, and the latter, at best, is quite ineffective in deterring drinking. It is unfortunate that the promise of these dramatic procedures, when subjected to strict research scrutiny, should prove to be only a mirage.

Summary

This report represents the culmination of a three-year investigation designed to obtain more conclusive answers relevant to the following issues: 1) whether there would be differential effectiveness among three experimental LSD treatment conditions and a control treatment condition; and 2) whether the effectiveness of any of these techniques could be enhanced by placing the patients on disulfiram subsequent to hospital discharge.

Thirteen psychiatrists participated in the study and treated a total of 176 male alcoholic patients. Detailed clinical assessments pertaining to symptomatology and personality change, drinking behavior, and social adjustment were made on all patients during their 30-day inpatient stay and every three months over a period of one year after hospital discharge. Direct blood alcohol readings were also obtained on patients at the time of follow-up.

Although the results indicated significant improvement from baseline to post-treatment and follow-up testing for all treatment conditions (including the no therapy condition), no one treatment condition proved superior to any other. Therefore, we were forced to conclude that the dramatic claims made for the efficacy of LSD treatment in alcoholism were scientifically unjustified.

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From the preceding remarks we see that insanity is often but an effect of a slight injury or disease of a part of the brain, and in many cases only a few of the faculties of the mind are disordered. From this we infer that the brain is not a single organ, but a congeries of organs, as maintained by the illustrious Gall and his celebrated successors Spurzheim and Combe. Thus each mental faculty has an especial organ, and therefore certain faculties may be disordered by disease of the brain, while others are not affected; a fact every day observed in Lunatic Asylums, but which we know not how to explain if we believe the brain to be a single organ.

—The American Journal of Insanity, volume 1, page 105-106, 1844.