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A REVIEW OF REBT RESEARCH IN ALCOHOL ABUSE TREATMENT

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ABSTRACT: Clinical outcome studies have shown that cognitive-behavioral approaches to alcohol abuse are efficacious. As the research continues to be refined, practitioners can work with clients based on better science. REBT practitioners have developed a number of theoretical and treatment manuals to promote better practice. The empirical literature on REBT treatment for alcohol abuse does not provide strong evidence of its effectiveness. The present article comprehensively reviews the REBT outcome literature and identified six studies. Of these, three met the inclusionary criteria. The findings demonstrated change in endorsement of irrational thinking, with limited behavioral change. Limitations of the present research base for alcohol abuse are discussed and suggestions offered for conducting and reporting REBT research on alcohol abuse.

Alcohol is the most widely used and abused drug in our society (Huffman, Vernoy, Williams, & Vernoy, 1991). Not only is it America's most serious drug problem, but it is also the most serious drug problem of every other industrialized nation. Maxmen and Ward (1995) reported that one in ten adults in the United States abuses or is dependent upon alcohol. The ECA survey of substance abuse by adult Americans reported a lifetime prevalence rate of substance abuse in our society of 19.2%, two-thirds of which came from alcohol abuse.

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Since it is clear that alcohol abuse and dependence directly and indirectly affect a significant percentage of the population, clinicians should make every effort to be as effective as possible when addressing the problem. Additionally, researchers would benefit from examining all factors that could be considered therapeutic, so that the most appropriate treatment techniques can be implemented. In recent years, a shift has occurred in the clinical population seeking treatment. As our society becomes more aware of the risks associated with excessive drinking, more efforts have been made to foster a more rehabilitative approach. Employee assistance programs and other non-mandated programs are increasing in number, and as a consequence, many clients who would not otherwise enter therapy are doing so. Compared to voluntary clients, such clients may feel more resentful of treatment and may not recognize their drinking as problematic (McCrady, 1993). This changing treatment population now includes a broader range of clients whose problems with drinking fall along a continuum. The "classic alcoholic" who has "hit bottom" and for whom many treatments were developed, represents only one extreme of the continuum (Thom, Browne, Drummond, Edwards, & Mulkey, 1992).

TREATMENT OF ALCOHOL PROBLEMS

A review of the literature reveals mixed findings regarding the use of most medications in the treatment of alcohol problems. Disulfiram (Antabuse) is probably the most widely used drug in the treatment of problem drinking. However, it commands a relatively low rate of patient compliance (Roth & Fonagy, 1996). In an extensive evaluation of the cost-effectiveness and benefits of multiple treatments for alcohol abuse, Holder, Longabaugh, Miller, and Rubois (1991) classify disulfiram as a high-cost treatment that is promising but not proven. Hodgson (1992) drew the same conclusions in a commentary on the Holder et al. review. The effectiveness of lithium as a treatment for alcohol abuse also remains uncertain. Although some investigators, such as Fawcett, Clark, Aagesen, Pisani, Tilkin, Sellers, McGuire, and Gibbons (1987), report that disulfiram indirectly helps both depressed and undepressed patients stay abstinent. Others, such as Roth and Fonagy (1996), report that the benefits of lithium treatment are uncertain. Finally, some evidence exists for the effectiveness of naltrexone, an opioid antagonist, in conjunction with psychological interventions

(O'Malley, Jaffe, Chang, Schottenfeld, Meyer, & Rounsaville, 1992; Volpicelli, Alterman, Hayashida, & O'Brien, 1992).

Social skills training appears to be highly effective in the treatment of alcohol abuse. In fact, more consistent evidence exists supporting the effectiveness of social skills training than for any other treatment for alcohol abuse reported in the literature (for example, Mattick & Jarvis, 1993; Roth & Fonagy, 1996). Classified as a low cost, highly effective treatment by Holder, Longabaugh, Miller, and Rubois, (1991), social skills training seems particularly helpful in preventing relapse (Roth & Fonagy, 1996). It appears to work well whether or not clients receive screening for social skills deficits (Mattick & Jarvis, 1993). The combination of social skills training and cognitive therapy seems even more promising (Oei & Jackson, 1982). In particular, social skills training seems to be most effective when it is focused on increasing assertiveness (Chaney, O'Leary, & Marlatt, 1978; Ferrell & Galassi, 1981).

Self-control training, brief motivational interviewing, and community reinforcement approaches also appear to be effective interventions in the treatment of alcohol abuse. All three approaches were classified as treatments with good evidence of effectiveness by Holder et al. (1991). Self-control training is classified as a low cost treatment, brief motivational interviewing is classified as a minimal cost treatment, and community reinforcement is classified as a medium cost treatment.

Other promising treatments for alcohol problems include behavioral techniques such as covert sensitization, behavioral contracting, and in particular, cognitive therapy. Holder et al. (1991) classified covert sensitization and cognitive therapy as medium cost treatments that are promising but not proven. Behavioral contracting was classified as a low cost, promising, but not proven technique. Covert sensitization is an aversion therapy that has the client imagine drinking followed by an imagined aversive stimulus in order to condition the client against drinking. Although some evidence supports this technique (for example, Mattick & Jarvis, 1993), its effectiveness depends on correct implementation (Elkins, 1980). Behavioral contracting would normally be used as a tool in ascertaining the cooperation and agreement of a client regarding the selected course of treatment and treatment goals. McCrady (1993) suggested that initial contracts should be viewed as tentative and should stipulate under what conditions the treatment plan or goals will be adjusted. For example, it may be stated in a con-

tract that if a client fails to reach specified goals by a specific date, alternate treatment techniques may be implemented.

In the treatment of alcohol abuse, the efficacy of cognitive therapy, particularly when combined with social skills training, appears promising. Oei and Jackson (1982) contrasted social skills training alone, social skills training with cognitive restructuring, and a control group. The group that showed the greatest gains at 12 months was the group that had received the additional cognitive restructuring. Additionally, Brandsma, Maultsby, and Welsh (1980) evaluated the efficacy of Rational Behavior Therapy in the treatment of alcohol abuse, and they showed that significant reductions in the frequency and amount of alcohol consumption in clients given the RBT.

REBT THEORY OF ADDICTION

Rational Emotive Behavior Therapy (REBT) theory views problems with alcohol as being multi-determined, resulting from an interaction between genetic, familial, and cultural factors with the individual's social learning history (Ellis, McInerney, DiGiuseppe, & Yeager, 1988). Ellis et al. (1988) postulated that the decision to change and to maintain follow-up action on this decision is a prerequisite to outcome. This decision involves changing self-defeating thinking about discomfort and drinking, and to maintain abstinence involves the development of higher frustration tolerance. For a more thorough review of the REBT theory of working with substance abuse and addictions, the reader is referred to Ellis et al. (1988) and Greenwood (1985).

The present study provides a clinically relevant review of the REBT treatment literature. Compared to other emotional/behavioral disorders, little information exists on REBT treatment for alcohol abuse. Although numerous theoretical guidelines are offered, the literature examining which factors lead to effective REBT treatment for alcohol abuse and dependence remains sparse. We hope that this review can help guide clinical practice and future research. Additionally, by reviewing the literature we hope that practitioners and researchers will be better able to choose interventions that best meet the clients' needs and are based on good science. A final goal of this review is to identify the limitations in the REBT research and to suggest future areas for exploration.

META-ANALYSIS

Glass (1976) referred to meta-analysis as the analysis of analyses, with a "statistical analysis of a large collection of analysis results from individual studies for the purpose of integrating the findings." Meta-analysis converts results from each study into a common, comparable unit called an effect size. Effect sizes represent an estimate of how experimental and control groups differ on pre and post treatment measures, and these differences are reported in standard deviation units. These differences or effect sizes are pooled from different outcome studies to evaluate an estimate of a treatment's effectiveness. According to the reasoning behind meta-analysis, conclusions based on results from a series of studies are likely to be more reliable and valid than conclusions drawn from individual ones (Green & Hall, 1984; Hedges & Olkin, 1985). In this paper we calculated effect size (d) using the D-STAT program (Johnson, 1989). d was calculated using the difference between the means of the experimental and control group at post test, divided by the pooled standard deviation of the two conditions (Hedges & Olkin, 1985). When means and standard deviations were not given, effect sizes were estimated from t and F statistics, or r or p values. Effect sizes that favored treatment conditions were given a positive value, and effect sizes that favored control or placebo conditions were given negative values. D-STAT also provides an adjustment for d based on sample size.

Cohen (1977) provided rough statistical guidelines of d = .2 (small effect), d = .5 (medium effect), and d = .8 (large effect) to evaluate the meaningfulness of effect size. He cautioned, however, that it is advisable to use the professional literature for standards of comparison rather than to use arbitrary guidelines. That is, an effect size that may be small in number may still lead to significant change in the person's functioning.

METHOD

Relevant studies were identified through several strategies. Several reviews of the REBT outcome literature have been published (DiGiuseppe, Miller, & Trexler, 1977; Engels, Garnefski, & Diekstra, 1993; Gossette & O'Brien, 1992, 1993; Haaga & Davison, 1989; Jorm, 1989; Lyons & Woods, 1991; McGovern & Silverman, 1984; Oei, Hansen, & Miller, 1993; Polder, 1986; Silverman, McCarthy, & McGovern, 1992;

Zettle & Hayes, 1980). The more than 360 studies cited in these reviews were searched for the following key terms both alone and in combination: alcoholism, addiction, substance use, dependency, drinking, treatment outcome, cognitive therapy, rational emotive therapy, rational emotive behavior therapy, cognitive restructuring, and behavior therapy. Additionally, a computer search of PSYCINFO, MEDLINE, and DISSERTATION ABSTRACTS was conducted for the years 1970 through 1998 using the key terms above. The authors of any alcohol abuse and dependence treatment studies were also entered into the computer search to uncover any relevant studies that were not discovered with the terms used. In addition, several well known REBT and alcoholism researchers were contacted and asked to identify additional unpublished manuscripts or doctoral dissertations. The decision to include doctoral dissertations in the review was made to partly counteract the possibility that only positive results are submitted for publication by the researcher, which may overestimate the effects of treatment.

Studies included in the present review met several criteria. They were published or completed after 1970. The effectiveness of REBT was compared to a control condition or alternative treatment. There was a minimum of at least two treatment sessions. Participants were adults. Enough information was provided to calculate effect sizes. A total of six REBT outcome studies of alcohol abuse were found. Three of these failed to meet all of the criteria stated above. All three studies failed to use a control group and two of the studies had insufficient data to calculate effect sizes. The abandonment of non-significant findings makes it difficult for the researcher to examine the effectiveness of a specific approach and for the practitioner to guide therapeutic interventions (Kramer & Andrews, 1982). As such, all six studies will be discussed with calculation of effect sizes presented for the three studies that met analysis criteria.

Each of the three remaining studies included more than one treatment condition. Two of the studies—Brian (1984) and Rosenberg and Brian (1986)—reported the same research with the exception of additional dependent variables appearing in each publication. Therefore, these studies were combined. Additionally, all of the studies contained several different types of outcome measures. As previously stated, this review intended to examine how REBT can affect the different dimensions of alcohol problems. As such, effect sizes were combined or aggregated across similar types of outcome measures within each inter-

vention or treatment group examined in a study. The aggregation of similar types of outcome measures also helps to control the disproportionate impact among studies with multiple redundant dependent measures.

STUDY DESCRIPTIONS

Study One: Brian (1984) and Rosenberg and Brian (1986)

- *Participants:* Twenty-one male, court-referred multiple DUI offenders.
- *Group Type:* Compared Marlatt's cognitive-behavioral model of relapse, Ellis's Rational-Emotive Therapy, and an unstructured therapy group.
- *Group Length:* 16 90-minute sessions over a total of six months: 12 weekly sessions, two bi-weekly sessions, and two monthly sessions.
- *Group Leaders:* Different leader for each group, "comparable years of clinical experience" and "committed to the orientation of the group they led."
- *Dependent Measures:* Appearing in Rosenberg and Brian (1986): Gambrill and Richey's Assertion Inventory, a Knowledge Questionnaire, the Michigan Alcoholism Screening Test, the Alcohol Assertiveness Inventory, seven questions to assess (scale 1 to 7) self-reported frequency of alcohol, and the Washington Sentence Completion Test.
- *Follow-Up:* Following post-test data collection, no additional follow-up data were reported.

Study Two: Greven (1985)

- *Participants:* Sixty male volunteers from two Veterans Administration Medical Centers.
- *Group Type:* Compared Rational-Emotive Therapy (RET) with Alcoholics Anonymous (AA) Treatment Group.
- *Group Length:* Varying lengths were reported for both groups. RET participants were required to attend the RET lectures and discussion groups for "three consecutive Wednesday afternoons," in addition to attending additional group programs as determined by the counselor at the initial interview. The AA treatment program was the same for all patients with the exception of special assignments (reading, relaxation training). Attendance at AA meetings on Monday, Wednesday, and Friday were mandatory and lectures were on the disease concept of alcoholism and the 12 steps of AA. Pre-test and post-test data for

both groups were collected at 28 days (± 1–2 days) for the RET group and at 21 days (± 1–2 days) for the AA group.
- *Group Leaders:* RET lectures were presented by the Alcohol Treatment Unit Chief, either in person or by video tape, and the AA groups were conducted by "various staff members."
- *Dependent Measures:* Irrational Beliefs Test and locus-of-control as measured by the Internal-External Locus of Control Scale.
- *Follow-Up:* No data were reported following post-test data collection.

Study Three: Cox (1979)

- *Participants:* Eighty male alcoholic felons who had requested to join an Alcohol Rehabilitation Unit. They ranged in age from 21 to 62 years and had a history of criminal behavior and of heavy abuse of alcohol.
- *Group Type:* The counseling approach was labeled Rational Behavior Training and involved discussion of the goals of rational thinking, teaching the five basic criteria for rational thinking, teaching the anatomy of an emotion, rational self-analysis, and the use of imagery in rational self-conditioning. There was no comparison group or control condition.
- *Group Length:* Length of group was not reported.
- *Group Leaders:* Not reported.
- *Dependent Measures:* Number of discipline reports per month.
- *Follow-Up:* Parole revocations due to "problems severe enough" were assessed at 6 months following program completion.

Study Four: Matthews-Larson and Parker (1987)

- *Participants:* One hundred alcoholic patients at a private outpatient clinic. Participants were randomly selected from a pool of 300 clients. Age ranged from 17 to 80 years and 68 of the clients were male.
- *Group Type:* Counseling "involved a rational-emotive approach designed to help clients understand and intervene in specific thinking patterns and self-talk" (Matthews-Larson & Parker, 1987, p. 94).
- *Group Length:* Six week program, with a "weekly therapy program consisting of daily group meetings, weekly one hour private sessions with a biochemical counselor, and similar weekly sessions with a psychological counselor. Family members attended one family group meeting each week and a weekly lecture, in addition to individual sessions as needed" (Matthews-Larson & Parker, 1987, p. 94).
- *Group Leaders:* Not reported.
- *Dependent Measures:* Client-reported alcohol use and lifestyle change maintenance.

- *Follow-Up:* One to three-and-a-half year follow-up of client-reported alcohol use and lifestyle change maintenance.

Study Five: Ray, Freidlander, and Solomon (1984)

- *Participants:* Sixty-two male veteran alcoholic patients
- *Group Type:* The program included RET, discussions of health hazards associated with drinking, individual counseling with a cognitive-behavioral focus, and the opportunity to attend AA meetings.
- *Group Length:* Six week program, with an initial two week detoxification, two week physical rehabilitation, and the final two week phase being "intensive psychoeducational program."
- *Group Leaders:* Not reported
- *Dependent Measures:* Clients completed Rational Behavior Inventory, which assesses specific endorsement of irrational beliefs and which yields eleven rationality factors.
- *Follow-Up:* None reported.

RESULTS (Table 1)

Study One

The two combined studies (Brian, 1984; Rosenberg & Brian, 1986) did not report complete enough statistics to calculate effect sizes for all comparisons for all dependent variables. In fact, for the seven dependent variables on which data were collected, results were only reported for one significant difference at post-treatment. This was a comparison for Alcohol Assertiveness, but the study did not indicate the direction of the change.

Study Two

The study by Greven (1985) did yield a moderate pooled effect size for the ten items of the Irrational Beliefs Test. The hypothesis that the RET condition would lead to a more internalized locus of control was not supported. In fact, the AA group reported a greater internalized locus of control as measured by the Internal-External Locus of Control Scale.

Table 1

Effectiveness of REBT in Treatment of Alcohol Abuse and Dependence

Study	*Comparison*	*Dependent Variable*	*Effect Size*
Greven (1985)	RET vs. AA	Irrational Beliefs Test (Jones, 1969)	.496[a]
		Locus of Control (Rotter, 1966)	−.41
Rosenberg & Brian (1986)	RET vs. Marlatt's C-B Model of Relapse	Alcohol Assertiveness Inventory[b]	1.39[c]
Ray, J. B., Freidlander, R. B., & Solomon, G. S. (1984)	Pre-Post	Rational Behavior Inventory Total Score	1.04
		Rational Behavior Inventory Subscales[d]	
		Catastrophizing	1.04
		Guilt	.17
		Perfection	.34
		Locus of Control	.29
		Demand for Caring	.81
		Blame and Punishment	.17
		Inertia and Avoidance	.79
		Independence	.36
		Downing Self and Others	.66
		Possible Future Misfortune	.55
		Control of Emotions	.76

[a] = combined effect sizes for 10 items of Irrational Beliefs Test using means to calculate d
[b] = Discomfort subscale of the Alcohol Assertiveness Inventory
[c] = effect size calculated by F – statistic; data did not indicate direction of comparison
[d] = effect size for 11 factors of Rational Behavior Inventory using means to calculate d

Study Three

The study by Cox (1979) reported that prior to the counseling program the number of discipline reports for the Alcohol Rehabilitation Unit was 26 per month. Upon completion of the program, the number of discipline reports declined until it reached six during the third month of the program. Cox reported that the average number of discipline reports fluctuated between six and eight per month. Revocation of parole six months after the program occurred in two of 15 residents who completed the program. Of the 13 who were still "functioning normally," six of them had previously had their parole revoked within two months of release from incarceration.

Study Four

The study by Matthews-Larson and Parker (1987) thoroughly examined a number of food/nutritional sensitivities and lifestyle patterns. At entry into the program, 84% of the clients reported alcohol cravings; at discharge from the program, this figure had dropped to 9%. Regarding alcohol consumption, at a six-month follow-up 92 of the clients were abstinent and stable (85 continuously, seven after a brief episode of use). At one to three-and-a-half year follow-up, 81 were abstinent and stable (57 continuously, 17 after "brief use," and 7 after retreatment).

Study Five

The study by Ray, Freidlander, and Solomon (1984) reported a significant improvement in a more rational direction for the total score and for six of the eleven factors.

DISCUSSION

Serious limitations exist in the REBT research base on the treatment of alcohol abuse and dependence. First, for a major theoretical orientation to psychotherapy with a large pool of outcome studies available, the number of REBT treatment studies dealing with alcohol abuse and dependence is very low. Although articles such as those presented in this special issue provide guidance to the practitioner, it is important to continue to develop science in this area to support our practice.

As problematic as the small number of REBT outcome studies is the poor quality and rigor of the design of these investigations. The present review examined a number of methodological attributes of the studies to determine whether these characteristics influenced potential treatment effects. However, many factors that may constitute a "good" treatment outcome study were absent. Rarely reported were methodological attributes such as random assignment of subjects, presence/nature of control conditions, manualized treatments, integrity check, length of intervention, therapist training, experimenter blindness, and subject attrition. Greater specificity of the treatment in the future will allow researchers to modify these approaches and can continue to influence practice.

The selection of dependent measures is crucial to assessing the clinical relevance of statistical outcome. Some researchers may choose dependent measures based on the premise that these measures may be more sensitive to change. To truly capture the nature of alcohol problems, a multi-dimensional outcome package is recommended that encompasses the cognitive, emotive, and behavioral components of problem behaviors. This may serve to answer previous criticisms of the REBT outcome literature (Gossette & O'Brien, 1992; 1993) that concluded that REBT results indicate a change in irrationality but little or no change in other behavior.

A consideration when reviewing any treatment conducted under research conditions is generalizability of results. There may be some important qualitative and quantitative differences that could affect outcome. For example, differences in motivation and insight between self-referred or mandated individuals may affect interventions and measurable change. There may also be some important differences between university research settings and outpatient clinical practice. At present, the REBT outcome literature on treating alcohol abuse is too sparse to draw conclusions about effectiveness.

CONCLUSIONS

Although many practitioners report that REBT is effective for alcohol and substance-abusing clients, reliance on therapeutic strategies can become problematic without empirical support. It is easy to see that there are currently many gaps in our knowledge base in terms of REBT treatment of alcoholism. Even in those cases where data does exist, it is neither well developed nor based on a large number of effect

sizes, and it could be strengthened by more research. One of the goals of this article was to establish a sound foundation of research that would guide effective intervention. Based on the above-mentioned limitations, that foundation has not yet been established. It is going to take continued research to identify the utility of REBT in the treatment of alcohol abuse and dependence.

RECOMMENDATIONS

In terms of better service to clients and better adherence to the canons of science, it would be desirable for REBT researchers to recognize that alcohol abuse and dependence is a problem worthy of treatment. There are a number of effective treatment strategies and manuals at present, and REBT researchers might use these manuals as formats for developing and testing new manuals. Publication of single-case studies and non-significant findings, publication in a wider range of journals to disseminate the literature, and a greater diversity in the assessment instruments is recommended. As well, greater specificity regarding subjects, intervention techniques, training, and other possibly relevant variables would also allow for greater scientific evaluation of the utility of REBT in the treatment of alcohol problems.

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