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The Therapeutic Alliance in Medical-Based Interventions Impact Outcomes in Treating Alcohol Dependence

W.D. Dundon, H.M. Pettinati, K.G. Lynch, H. Xie, K.M. Varillo, C. Makadon, and D.W. Oslin
Center for the Studies of Addiction, Department of Psychiatry, University of Pennsylvania School of Medicine, 3900 Chestnut Street, Philadelphia, PA 19104-6178

Abstract

This study examined the relationship of the therapeutic alliance and treatment outcomes for alcohol dependent patients receiving naltrexone or placebo and one of three different types of clinical interventions, including two medical-based (non-specialty) treatments. This is a secondary analysis of a 24-week randomized, placebo-controlled, clinical trial of 100 mg/day of naltrexone or placebo for patients with DSM-IV alcohol dependence. Patients were also randomized to one of three interventions: 1) medication clinic only, 2) medication clinic plus BRENDA (an intervention promoting pharmacotherapy), or 3) medication clinic plus Cognitive Behavioral Therapy (CBT). Early in treatment, patients and clinicians completed the Working Alliance Inventory (WAI). Regression analyses were conducted to determine the predictive validity of the WAI on percent days abstinent and percent of sessions attended over the clinical trial. In the medication clinic only condition, the clinicians' WAI total score was marginally correlated to percent of visits attended ($p = .057$) but not percent days abstinent. In the medication clinic plus BRENDA condition, clinicians' WAI total score was positively correlated with percent days abstinent ($p = .013$) but not percent visits attended. No significant relationships were found between the WAI scores and either outcome measure in the CBT condition or for any of the patient rated assessments. To our knowledge, this is the first published report providing some support for the importance of the therapeutic alliance in medical interventions for alcohol dependence but only in the context of the clinicians' ratings. The absence of other effects underscores the need for further research.

1. Introduction

In an effort to understand the factors that underlie therapeutic efficacy, researchers have not only compared outcomes across different therapeutic approaches, but have also focused on factors that are common to all types of psychosocial treatments. One such factor is the therapeutic alliance between the patient and the primary clinician. Current conceptualizations of the therapeutic alliance (also referred to as the working alliance, therapeutic bond or helping alliance) reflect the nature and strength of the affective bond between patient and primary clinician in their collaboration in identifying and working toward the patient's treatment goals.

Two meta-analytic reviews have demonstrated a moderate yet consistent positive relationship between the therapeutic alliance and treatment outcomes across a variety of diagnoses and

Address Correspondence to: William D. Dundon, Ph.D., Department of Psychiatry, University of Pennsylvania School of Medicine, 3900 Chestnut Street, Philadelphia, PA 19104-6178, USA, email: dundon_b@mail.trc.upenn.edu, phone: 215-222-3200, ext. 115, fax: 215-386-6770.

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theoretical orientations (Horvath and Symonds, 1991; Martin et al., 2000) Meier et al. (2005) recently completed a review of the relationship between the therapeutic alliance and treatment outcomes in drug-disordered patients. While the heterogeneity of the study designs precluded a meta-analytic approach, they did conclude that the alliance modestly predicts treatment retention and treatment engagement, but its relationship with substance use outcomes is mixed (Meier et al., 2005). Nonetheless, the one study that treated alcohol dependent patients did find the expected relationship between the alliance and drinking outcomes (Connors et al., 1997).

Project Match (Project Match Research Group, 1997) was a national, multi-site study of alcohol dependence designed to test various treatment matching hypotheses. There were 952 outpatients and 774 aftercare (i.e., following inpatient care) patients who were randomly assigned to one of three manualized, 12-week treatments [Cognitive Behavioral Treatment (CBT), Motivational Enhancement Treatment (MET) or 12-step Facilitation Treatment (TSF)], and then were followed for a 1-year post treatment period. Connors and his colleagues (1997) analyzed data from 698 outpatients (73% of the original sample) and 498 aftercare patients (64% of the original sample) in order to evaluate the relationship between the therapeutic alliance (as measured by the Working Alliance Inventory or WAI) and treatment outcomes in the Project MATCH study. Both the therapist and the patient rated the alliance after the second treatment session. In the outpatient sample the therapeutic alliance (rated by the therapist and the patient) predicted drinking outcome and patient retention during the treatment and post treatment periods while controlling for a variety of potential confounds. In the aftercare sample, the results were not as clear with only the therapist rating predicting the percent days of abstinence during the treatment and post treatment periods.

Although Meier et al. (2005) included this major study of alcohol dependence treatment, the focus of their review was primarily on the therapeutic alliance in populations of drug abusers. For instance, the word 'alcohol' was not used as one of the search terms for identifying articles. Three other studies not covered by the Meier et al. (2005) review also examined the relationship between the therapeutic alliance and outcome and/or retention in patients treated for alcohol problems. Dearing et al., 2005 used a path analysis model to investigate the relationship of client engagement factors (expectations, therapeutic alliance, and therapy attendance) with treatment satisfaction at the end of treatment and drinking outcomes at six-month post treatment. By combining the results of two clinical trials, the authors reported on a sample of 208 alcohol treatment seeking outpatients who completed the WAI after the second therapy session of 12-week CBT protocols. The authors detailed the individual correlations among these factors allowing for a direct examination of the relationship between the client's therapeutic alliance (WAI) and treatment attendance and 6-month drinking outcome. The client's WAI score was not significantly related to treatment attendance or 6-month drinks per drinking day but was positively related to 6-month post treatment days of abstinence. End of treatment or in-trial drinking outcomes were not reported. The percentage of patients also meeting diagnostic criteria for other drug problems was not reported although patients were excluded if other drug problems were more severe than their alcohol problems.

Ojehagen et al. (1997) reported on a sample of 35 outpatients who completed one or two years of treatment (49% of the original intent-to-treat sample) after random assignment to Multimodal Behavior Therapy or Psychodynamic Therapy. The therapeutic alliance was assessed by an independent rater at the third therapy visit using a Swedish version of the Penn Helping Alliance Questionnaire (Morgan et al., 1982). A favorable drinking outcome was defined as no more than seven days of abusive drinking in a 6-month period. During treatment, no significant association was observed between the patient or therapist alliance and drinking outcome or length of therapy. At a 3-year post randomization assessment, the patient's alliance was significantly but negatively associated with outcome (spearman $r = -.52, p < .05$). Indeed,

11 of 12 correlations between the alliance and outcome were in the negative direction, with the authors suggesting that perhaps the “alliance early in treatment is not predictive of drinking outcome in comparison with other determinants of outcome’ (p. 247).

In a brief report by Long et al. (2000), 188 consecutive admissions to a cognitive behavioral inpatient and day hospital treatment program (average length of stay = 16.1 days) were followed up 12 months after discharge. At 12 months, 170 patients were assessed and classified as being abstinent, non-problem drinkers, drinking but improved, or unimproved; outcome status was confirmed by collaterals. While several factors were predictive of outcome status (e.g., greater program involvement), the clients score on the WAI was not significantly related to outcome.

In summarizing the results from these four studies that focused primarily on patients with alcohol problems, some inconsistencies emerge. While Connors et al. (1977) reported a positive relationship between early alliance and retention in treatment in their outpatient sample, Dearing et al. (2005) did not. Ojehagen et al. (1997) found no relationship between early patient or therapist alliance and length of treatment, but their sample focused on treatment completers. The Long et al. (2000) study did not report on treatment retention, because their focus was on 12-month drinking outcomes following a short-term inpatient and/or day hospital program. In terms of drinking outcomes, Connors et al. (1977) and Dearing et al. (2005) found some support for a positive relationship between early alliance and drinking outcomes, Ojehagen et al. (1997) and Long et al. (2000) did not. A more comprehensive review is beyond the scope of this paper, but this brief overview does suggest that it is difficult to draw definitive conclusions, because the studies varied in size, purpose, alliance measures, treatment setting, outcome measures, timing of outcome assessments, and findings, among other variables. Meier et al., 2005 have suggested that the alliance-outcome relationship in substance abuse treatment may be more complicated than in mental health treatment, because the reinforcing effect of the therapeutic relationship may not be able to compete with the more powerful reinforcers of alcohol and drugs. Furthermore, Carroll (2005) suggests that our understanding of the relationship of the alliance with drug and alcohol outcomes is limited, as it has only been examined in some of the substance abuse treatment modalities (e.g., CBT, MET, TSF) but not in others (e.g., pharmacotherapy approaches).

In the current study, we sought to add to the alcohol treatment literature by examining the relationship of the therapeutic alliance with treatment retention and outcome in a sample of alcohol dependent patients participating in a pharmacotherapy trial of naltrexone. The design of the study permitted an examination of this relationship among three different interventions: medication clinic only, medication clinic plus an intervention that promotes adherence to pharmacotherapy, or medication clinic plus CBT. Furthermore, we know of no other studies that have examined these issues for medication oriented interventions for alcohol dependence.

2. Methods

This is a secondary analysis from data of a 24-week randomized, placebo-controlled, clinical trial of 100 mg/day of naltrexone for outpatients with alcohol dependence (N=240.) The study was conducted at the Treatment Research Center of the University of Pennsylvania. All patients were at least 18 years old and were diagnosed with alcohol dependence using DSM-IV criteria. Patients were excluded from the trial if they met dependence criteria for any substance other than alcohol or nicotine, were medically or psychiatrically unstable or were taking psychotropic medications at randomization. The study was reviewed and approved by the Institutional Review Board of the University of Pennsylvania, and all patients provided written informed consent prior to study participation.

After randomization to 100mg/day of naltrexone or placebo, patients were randomized to one of three interventions: 1) medication clinic only, 2) medication clinic plus BRENDA (an intervention promoting pharmacotherapy described below), or 3) medication clinic visit plus CBT. All patients participated in the medication clinic, meeting with a research physician nine times over the 24-week trial for 5–10 minutes/session. Approximately one-third of patients participated in this medication clinic only, referred to as the Doctor Only condition, which had limited therapeutic content. One male research physician conducted the majority of the sessions with back-up by another male and one female research physicians.

In the medication clinic plus BRENDA condition, patients also met with a Nurse Practitioner trained in the BRENDA model. The BRENDA model (Volpicelli et al., 2001) is a 6-step, manualized approach designed for the primary care clinician for medication management sessions. The 6 steps are: 1) B – a Biopsychosocial evaluation is conducted bringing together information about the biological, psychological and family-sociodemographic status of the patients as related to substance abuse. 2) R – a Report is prepared from the biopsychosocial evaluation and used by the clinician to give feedback to the patients. It focuses on negative alcohol-related consequences, e.g., liver pathology, legal issues, divorce, etc. 3) E – Empathy is required by the clinician when listening to the patients and their response to the report. Empathy is also necessary in dealing with the patient's resistance. 4) N – the patient's unique Needs or problems are identified and are related to the patient's motivation to comply with treatment. 5) D – Direct advice is provided to the patient by the clinician and focuses on what will support the patient's cooperation and compliance with treatment. 6) A – the clinician makes a formal Assessment of the patient's success in following advice. If the patient had difficulty in accepting the advice, the clinician re-evaluates the patient's biopsychosocial complications related to alcohol abuse and the goals for treatment, and attempts to empathically understand the reasons for resistance to the treatment recommendations. In the current study, sessions lasted for approximately 20–30 minutes, occurring weekly for the first 12 weeks and every other week for the remaining 12 weeks for a maximum of 18 sessions. There were four female nurse practitioners who had from 3 to 15 years experience with treating alcohol dependent patients.

In the medication clinic plus CBT condition patients also met with a therapist trained in CBT. The goal of CBT is to instruct patients on how to monitor and cope with situations that put them at high risk for relapse, based on relapse prevention principles of Marlatt and Gordon, adapted by Kadden and colleagues for Project Match (Kadden et al., 1992). In the current study, manualized CBT sessions lasted for approximately 50–60 minutes, occurring at the same schedule as in the BRENDA condition for a maximum of 18 sessions. There were 7 masters level CBT therapists (1 male and 6 female) with from 2 to 12 years experience treating alcohol dependent patients.

To maintain fidelity of the treatments, staff in the BRENDA and CBT conditions were supervised at least monthly. The supervisors for each condition were consistent throughout the trial. All CBT and BRENDA sessions were audio taped and 10% of the sessions were randomly selected to assess adherence to the treatment protocol. Based on supervision and the review of the audiotapes, there was no evidence of therapeutic drift over the course of the trial.

2.1 Sample

There were 194 or 80.8% of the 240 patients randomized in the clinical trial who provided WAI information after the third week post randomization. For the 46 for whom WAI information was not available, 23 discontinued treatment before the third week and 23 had missing data for various other reasons. In some cases only the therapists WAI or only the patients WAI were available. The results were similar whether the analyses were conducted on the sample with complete WAI data or any WAI data. The missing WAI data were

comparable across the 3 groups (21.0%, 15.2%, 21.3%, for Doctor Only, BRENDA and CBT respectively, $\chi^2 = 1.2, p = 0.55$). There were no significant differences found between the WAI sample and the no-WAI sample on age, gender, marital status, education, assignment to treatment condition, days of alcohol use in the 30 days prior to treatment, years of lifetime alcohol use, or BDI score. However, the WAI sample tended to have a higher proportion of Caucasian patients than the no-WAI sample (72.6% vs. 60.9%; $\chi^2 = 4.43, p = .035$.) The WAI sample was more likely to receive placebo than the no-WAI sample (53.1% and 37.0%; $\chi^2 = 3.87, p = .049$). The characteristics of this sample (N=194) will differ slightly from the characteristics of the main paper (N=240) which is currently under review.

2.2 Assessments

Timeline Follow-Back method (TLFB; Sobell and Sobell, 1992): The TLFB method is a well established procedure for determining quantity and frequency of alcohol consumption. It is typically used as an assessment interview designed to help individuals recall alcohol consumption over a previous time period. A blank calendar is utilized and patients are instructed to indicate the days that they consumed alcohol as well as the number of drinks. The interviewer leads an individual through each day, cueing holidays, weekends, birthdays, etc. to aid in recall. The TLFB displays high reliability and validity when given in a one-to-one setting. The amount of daily drinking was recorded at baseline and at each research visit during treatment using the TLFB method.

Working Alliance Inventory (WAI; Horvath and Greenberg, 1989): The WAI is a 36-item self-report questionnaire comprising 3 subscales of 12 items each, with respondents rating their level of agreement to statements using a 7-point Likert-like scale. The subscales assess the goals of therapy, the tasks of therapy, and the bond that develops between the clinician and patient. As the subscales were highly correlated with each other (Pearson coefficients ranging from .74 to .90, all p values $< .0001$), only the total scores were analyzed in this study. The range of the total scores is from 36 to 252 with higher scores indicating greater therapeutic alliance. The WAI is the most widely used assessment for measuring the therapeutic alliance (Fenton et al., 2001), has well established reliability and validity (Hanson et al., 2002; Horvath and Greenberg, 1989), and has parallel forms for clinicians and patients. In the current study the WAI was administered after the third week post-randomization visit in each condition. Both the patient and the clinician completed the assessment. Although all patients participated in the medication clinic with a physician, the physician-patient alliance was not assessed in the BRENDA or CBT conditions for two reasons. First, it was assumed that the therapeutic relationship with the CBT or BRENDA clinicians would be more salient than the relationship with the physician in these two conditions because of the greater frequency and length of sessions. Second, we did not want the patient to experience any discomfort comparing clinicians. As such, only one relationship was examined and the instructions of the WAI were adapted to specify the name of the clinician of interest.

2.2 Statistical Methods

All patients who were randomized and for whom a WAI was collected after the third week post-randomization were included in analyses using the SAS Version 9.1. Differences between our study sample of 194 patients with WAI data and the sample of 46 patients without WAI (reported above) were examined on pretreatment demographic and drinking variables, using chi-square for binary characteristics and analysis of variance models for continuous characteristics. Similar analyses were conducted to compare these variables across the three interventions.

Linear regression models were used to assess the relationship among WAI scores and outcome measures (percent days abstinent during the clinical trial derived from the TLFB and percent

of therapy sessions attended derived from research records) controlling for number of sessions attended prior to WAI administration. Number of sessions attended prior to WAI administration differed significantly among the three therapy groups. By the third week after randomization, patients had a mean of 2.70 visits for Doctor Only, 2.49 visits for BRENDA, and 2.35 visits for CBT ($F = 3.71, df = 2, p = 0.026$). There were fewer CBT visits than Doctor Only visits because Doctor Only visits occurred on the day of randomization and CBT appointments were scheduled within the first week post randomization.

We were interested a priori in exploring the relationship between WAI and outcome for each of the 3 different clinical interventions, particularly because we are aware of no other reports of this relationship for medical interventions with alcohol dependent patients. To address this, we included a term for the interaction between the WAI total score and the intervention group, in our model for predicting the two outcomes, and thereby obtained estimates for the response-WAI slope for each of the three intervention conditions. Thus, the predictors in the model for both percent days abstinent and percent visits attended included the number of visits prior to WAI administration, the WAI total score, treatment condition, and the interaction of total score and treatment condition.

We also used generalized estimating equations models to estimate the extent of within-therapist clustering due to the nesting of patients within therapists. These models assumed a common correlation model, and used the same covariates and responses as described above.

3. Results

Table 1 presents the demographic and pre-treatment clinical data for the sample of 194 patients and for the three intervention groups. Overall, 74.2% were male and the mean age was 43.7 years. Most were Caucasian (76.2%) and not married (67.7%) with an mean of 13.8 years of education. On average, Ss had used alcohol for 23.3 years, and for 19.2 days in the 30 days prior to starting of the study. The three intervention groups did not differ on any of the demographic or pre-treatment variables except that there were more Caucasians in the BRENDA group than in the CBT group ($\chi^2 = 6.45, p < .05$).

Next, we consider the distributions of the WAI scores and the responses. Table 2 presents the clinician WAI total scores, the patient WAI total scores, the percent days abstinent and the percent visits attended for the entire sample and by gender, medication group and treatment intervention condition. Patients rated the working alliance higher than did clinicians (213.0 vs. 193.8, respectively; $t = -6.39, p < .001$). There were no gender differences or medication differences on the total scores or the outcome measures. Both clinician and patient WAI total scores showed differences among the three intervention conditions. The ratings were highest in the CBT condition, followed by the BRENDA conditions and then the Doctor Only condition. The results of individual ANOVAs for the clinician total scores and patient total scores were significant (clinician - $F = 31.6; p < .0001$; patient $F = 5.06; p = .007$). Post hoc tests revealed significant differences between each group for the clinician rated WAI. For the patient WAI scores the Doctor Only group was lower than the BRENDA and CBT groups, which did not differ significantly from each other. The intervention groups did not differ on percent days abstinent ($F = 1.23, p = .30$) but did differ significantly on percent visits attended ($F = 8.65; p = .0003$), with patients attending fewer sessions in the CBT group than the other two groups which did not differ significantly.

Next, we consider the regressions of outcomes on clinician WAI total scores. Overall, the clinician total scores were marginally predictive of percent days abstinent ($\beta = .371, \chi^2 = 3.26, p = .071$) but were not predictive of percent sessions attended ($\beta = -.239, \chi^2 = .11; p = .739$). The interaction term of total score and treatment condition was marginally significant for both

percent days abstinent ($\chi^2 = 4.67$; $p < .10$) and for percent sessions attended ($\chi^2 = 5.17$; $p < .10$).

In terms of the regression coefficients for each group, the nature of the interactions can be described as follows. In the Doctor Only condition, the clinician assessment of the alliance was not significantly related to percent days abstinent ($\beta = -.011$, $p = .924$) but was marginally related to percent visits attended ($\beta = .272$, $p = .057$) accounting for 10% of the variance. In the BRENDA condition, the clinician assessment of the alliance was significantly related to percent days abstinent ($\beta = .377$, $p = .013$) accounting for 11.7% of the variance but was not related to percent visits attended ($\beta = -.245$, $p = .273$). In the CBT condition, the therapist assessment of the alliance was neither significantly related to percent days abstinent ($\beta = .037$, $p = .736$) nor significantly related to percent visits attended ($\beta = -.154$, $p = .393$). Thus, the CBT group showed no relationship between WAI total score and outcome, the BRENDA group showed a positive relationship between score and abstinence, while the Doctor Only group showed some evidence of a positive relationship between total score and attendance.

Next, we consider the regressions of the outcomes on the patient WAI total scores. Here, the score by intervention effect was not significant for either percent days abstinence ($\chi^2 = .30$; $p = .86$) or for percent sessions attended ($\chi^2 = .88$; $p = .65$). Similarly, the main effects of the score were not significant for percent days abstinent ($\chi^2 = 1.83$; $p = .18$) or for percent sessions attended ($\chi^2 = .01$; $p = .91$).

Finally, we briefly describe the GEE analyses for the therapist scores. For each of the percent days abstinent and the percent sessions, the estimated correlation due to the nesting of patients within therapists was very small: -0.01 for each case. Wald tests for the interaction between group and total score were highly significant (< 0.005 in each case), with patterns of estimated group slopes similar to those described above. Thus, the effects of nesting within therapists appear to be ignorable for the purposes of these analyses.

4. Discussion

One primary aim of this paper was to report on the impact of the therapeutic alliance in medical based interventions for the treatment of alcohol dependence. For the patients in the BRENDA condition (an intervention promoting pharmacotherapy) the nurses rating of the alliance early in treatment was a significant predictor of percent days abstinence over the course of the trial. Thus, we found some support for the importance of the therapeutic alliance in the medical treatment of patients with alcohol dependence. As brief medical interventions, such as BRENDA and Project COMBINE's Medical Management (Pettinati et al., 2004) are further developed and utilized, the importance of the therapeutic alliance needs to be considered. However, these results need to be understood within the context of several other findings. In the BRENDA condition we found no significant relationship between the clinicians assessment of the therapeutic alliance and treatment attendance. In the Doctor Only condition we found no significant relationship between the clinicians WAI and drinking outcome (percent days abstinent) and only marginal significance with number of visits attended. Furthermore, we found no relationship among the clients assessment of the therapeutic alliance and either drinking outcome or treatment attendance. Thus, we remain cautious about the interpretation and utilization of these results until further studies confirm, refute or clarify our findings. As this is the first published report to our knowledge of the therapeutic alliance in the medical treatment of alcohol dependence, we hope that it will stimulate such investigations.

A second primary aim of this paper was to add to the literature on the impact of the therapeutic alliance in alcohol dependence treatment. This section will consider our findings regarding treatment retention, drinking outcome, the absence of an effect with the patient ratings, and

the absence of an effect in the CBT condition. We end this section with a review of the limitations of this study.

In their review Meier and colleagues (2005) concluded 'that the early therapeutic alliance appears to be a consistent predictor of engagement and retention in drug treatment' (p. 313). In the current study we found little support for this conclusion. For the Doctor Only condition we observed a trend of an association between the WAI and treatment attendance ($p = .057$) but we found no such association for the other two conditions. The results from the Doctor Only condition may not be generalizable as they are based primarily on one physician. Therefore, our findings seem more similar to Dearing et al (2005) and Ojehagen et al. (1997) than Connors et al. (1997) in that the early alliance may not be consistently associated with attendance in alcohol treatment. The challenge now seems to be to determine under what conditions the early alliance would predict treatment attendance for this population.

Regarding the working alliance-drinking outcome relationship, our results are more similar to the conclusion of Meier et al. (2005) in that our findings were mixed. For the BRENDA condition we observed a significant, positive association of the clinicians assessment of the therapeutic alliance with percent days abstinent. When observed, the strength of the relationship is typically modest (Meier et al., 2005) which was the case in our sample. For the BRENDA condition, the clinicians WAI total score accounted for 11.7% of the variance of percent days abstinent. However, we found no such support for the other two conditions nor for the patients ratings of the alliance. Consequently, the overall association for our sample achieved only marginal significance ($p < .10$). Thus our findings are more similar to Ojehagen et al. (1997) and Long et al. (2000) than to Connors et al. (1997) and Dearing et al (2005). A meaningful comparison of the results of these studies, however, is made quite difficult by the variations in the studies as mentioned in the Introduction.

One relatively unique aspect of this study, however, is the examination of the alliance-outcome relationship within each intervention. In the Connors et al. (1997) study, treatment modality was one of the covariates. While the authors mentioned two interactions involving therapist WAI ratings, no details were provided and separate analyses for individual psychosocial interventions were not reported. Thus, we cannot unequivocally determine that the expected WAI-outcome relationship existed for all conditions. Ojehagen et al. (1997) did report separately for the two therapies, as that was the express purpose of the study. In their study early therapeutic alliance was stronger in the multimodal behavior therapy than in the psychodynamic therapy, although the relationship with outcome did not seem to differ. In the current study we also found differences in the total scores of the WAI. Patients and clinicians rated the alliance highest in CBT, followed by BRENDA and then the Doctor Only group. These results support the need to consider the treatment modality in understanding these relationships.

There were no significant relationships between the therapeutic alliance and drinking outcome for the patients assigned to CBT. In a randomized therapy trial of cocaine dependent individuals, Carroll et al. (1997) found the expected association in their supportive clinical management control condition, but did not find the expected association with the CBT condition. They suggested that the therapeutic alliance may be more salient with interventions that rely more heavily on 'common' elements of therapy than more structured therapies such as CBT. The manualized BRENDA model (Volpicelli et al., 2001) used in the current study is more reliant on these common elements than the CBT manualized treatment. Neither the Connors et al. (1997) study nor the Dearing et al. (2005) studies were pharmacotherapy trials. It is conceivable that patients who volunteered for the current study did so because of interest in pharmacotherapy. This possibility coupled with the protocol feature that all patients

participated in the medication clinic may have made the relationship with the medical practitioner more salient. However, we have no data to confirm or dispute this conjecture.

We did not observe any predictive value for the patient-rated Working Alliance scores. In this sense our findings were more similar to the Project Match Aftercare sample rather than the Outpatient sample (Connors et al., 1997). The patient ratings in the Aftercare sample did not predict treatment attendance or outcome. Similarly, Long et al. (2000) found no relationship in the patients WAI during an inpatient/day hospital stay and 12-month drinking outcome. Furthermore, Ojehagen et al. (1997) found a substantial negative correlation ($r = -.52$) between the patients early alliance and drinking outcome at 36 month post randomization. Nonetheless, these findings do not reconcile easily with the positive findings reported in the Project Match outpatient sample and in the study by Dearing et al. (2005). Clearly, the relationship is complex and involves other factors. For instance, Ojehagen et al. (1997) found the alliance to be associated with mood dimensions at six months. The Dearing et al. (2005) study may represent a model for future research using path analyses to study the complexities of these relationships. Finally, the absence of the relationship between the patients' assessment of the alliance early in treatment and drinking outcome or treatment retention may reflect the conflictual relationship that some patients experience as the treatment restricts access to the reinforcing effects of alcohol (Meier et al., 2005; Carroll, 2005).

There were limitations of this study, which need to be acknowledged. As we were only studying the early alliance measured at one point during a clinical trial, we were unable to explore the changing nature of the alliance over time. The relationship (or lack thereof) between the therapeutic alliance and outcome may be mediated by other variables not measured or controlled for in this study. We did not control for covariates as in Project Match, making the comparison of results with that study problematic. The WAI is only one measure of the therapeutic alliance and other results may have been found if other assessments had been used. The drinking outcome data were collected during the trial and no post treatment outcomes were reported. The clinical interventions were completely confounded by profession, specific practitioners and length of session. The Doctor Only clinicians were psychiatrists (primarily one male) and sessions lasted 5–10 minutes; the BRENDA clinicians were female nurse practitioners and sessions lasted 20–30 minutes; the CBT clinicians were mostly female masters trained counselors or psychologists and sessions lasted 45–55 minutes. Consequently, any conclusions based upon type of intervention must be interpreted with these limitations in mind. Additionally, both BRENDA and CBT were provided within the context of the brief medication clinic model and results should be interpreted accordingly. Nonetheless, the main conclusion of the study (that the therapeutic alliance may influence drinking outcome in medical-based interventions) is not compromised. There are also limits on the generalizability of our findings. Alcohol dependent individuals who agree to participate in a clinical trial may not represent the population of alcoholics who need or seek treatment. Furthermore, these results may be limited to those who complete at least three sessions with a clinician. Consequently, they may not be representative of those who terminate earlier in treatment or for whom the intervention is only one or two sessions. Finally, BRENDA may represent an older form of brief medically based interventions, and results should be replicated with more recently developed treatments, like COMBINE's Medical Management.

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Table 1

Demographic and pretreatment clinical characteristics for total sample and for each intervention condition.

	Total Sample n=194	Doctor Only n=64	BRENDA n=67	CBT n=63
% Male	74.2%	78.1%	73.1%	71.4%
% Caucasian *	76.2%	78.1%	84.9%	65.1%
% Married	32.3%	33.3%	39.4%	23.8%
% Naltrexone	46.9%	51.6%	46.3%	42.9%
Mean Age	43.7 (10.9)	42.6 (11.4)	44.3 (10.0)	44.2 (11.2)
Mean Years Education	13.8 (2.7)	13.5 (2.8)	14.2 (2.6)	13.7 (2.6)
Mean BDI Score	19.9 (10.2)	19.1 (10.5)	18.7 (9.2)	22.1 (10.7)
Mean Years of Lifetime Use (ETOH)	23.3 (10.6)	23.1 (11.5)	22.9 (10.1)	23.9 (10.3)
Mean Days Used in the Past 30 (ETOH)	19.2 (8.4)	19.1 (7.9)	18.4 (8.5)	20.0 (8.9)

* $p < 0.05$; % Caucasian is greater in BRENDA than CBT.

Table 2 Means and standard deviations of WAI total scores, drinking outcome, and treatment attendance variables for the total sample and by gender, medication group, and treatment intervention.

Sample	N	Clinician WAI Total Score ¹	Patient WAI Total Score ²	Percent Days Absinent	Percent Visits Attended ³
Total	194	193.8 (26.3)	213.0 (29.5)	85.1 (19.8)	70.9 (30.0)
Male	144	191.7 (25.8)	215.4 (27.4)	86.3 (19.2)	71.9 (29.3)
Female	50	199.4 (27.3)	206.4 (34.2)	81.6 (21.3)	68.1 (32.2)
Naltrexone	103	192.0 (25.7)	215.4 (26.8)	86.6 (17.5)	70.4 (30.5)
Placebo	91	195.3 (26.9)	210.9 (31.6)	83.8 (21.6)	71.4 (29.7)
Doctor Only	64	175.0 (24.7)	203.4 (35.4)	82.3 (21.1)	80.5 (26.2)
BRENDA	67	198.7 (17.0)	215.1 (28.9)	85.3 (19.0)	72.7 (28.5)
CBT	63	208.5 (25.0)	219.7 (21.0)	87.8 (19.1)	59.4 (31.8)

¹ For Clinician WAI Total Score - Doctor Only < BRENDA < CBT (p < .0001)

² For Patient WAI Total Score - Doctor Only < BRENDA = CBT (p < .01)

³ For Percent Visits Attended - Doctor Only = BRENDA > CBT (p < .001)