

Treatment Expectations, Alliance, Session Positivity, and Outcome: An Investigation of a Three-Path Mediation Model

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Objective: The aim of this study was to test a 3-path mediation model, in which the effect of treatment expectations on outcome is mediated first by the alliance and then by session positivity.

Method: Archival process and outcome data were used for this investigation. These data had been collected from 116 clients (70% female, 81% White, mean age = 24.1 years), who sought psychotherapy for a variety of reasons at a university-based clinic.

Results: Correlation analyses established that clients' treatment expectations, the therapeutic alliance, session positivity, and outcome were significantly related to each other. A bootstrap (data resampling) procedure was employed to test the hypothesized 3-path mediated effect. The results of this analysis were consistent with the hypothesis that high treatment expectations enhance the therapeutic alliance, which contributes to clients feeling positive at the end of sessions and in turn facilitates improvements in symptoms and functioning.

Conclusion: The current research is the first to provide evidence for this particular model, and thus helps to shed light on the intricacies and underlying dynamics of psychotherapy. © 2014 Wiley Periodicals, Inc. *J. Clin. Psychol.* 71:41–49, 2015.

Keywords: psychotherapy; alliance/therapeutic alliance; expectancy; treatment outcome

Despite decades of research on psychological treatments, we still cannot provide an evidence-based explanation for why these treatments work or how they produce change (Kazdin, 2007, 2008). This is unfortunate because knowledge about mechanisms of change could help to distill the various psychological treatments into the most parsimonious models possible, which would allow us to incorporate more of what works into therapy and discard what doesn't work (Barlow, Bullis, Comer, & Ametak, 2013; Nock, 2007). The clinical applications of this research are also elucidated by Kazdin (2008), who states that the study of mechanisms might be "the best long-term investment for improving clinical practice and patient care" (p. 151). For the current research, we aimed to better understand the mechanisms underlying the effects of clients' expectations and the therapeutic alliance, because these two variables are considered to be essential principles of change across all psychotherapies (Frank, 1973; Goldfried, 1980; Lambert, 1992; Greenberg, Constantino, & Bruce, 2006).

Two types of expectations are delineated in the literature: (a) *outcome expectations*, which refer to the client's prognostic beliefs about the consequences of engaging in treatment, and (b) *treatment expectations*, which refer to the client's beliefs about the nature, roles, and process of treatment (Constantino, Glass, Arnkoff, Ametrano, & Smith, 2011). Treatment expectations are important theoretically because they are thought to affect the client's hope and engagement with treatment (Constantino, Ametrano, & Greenberg, 2012). However, as compared to outcome expectations, there has been a lack of controlled research investigating the association between treatment expectations and outcomes (Constantino et al., 2011). In a comprehensive review, Constantino and colleagues (2011) concluded that attempts at linking treatment expectations with outcomes have yielded "mostly positive" findings (p. 366). A recent study (Anderson, Patterson, McClintock, & Song, 2013) documented that clients' treatment expectations accounted for 3% of outcome variance.

Although correlational data generally support the treatment expectancy–outcome association, little is known about the mechanisms that underlie this association (Arnkoff, Glass,

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& Shapiro, 2002; Constantino et al., 2011). Research in social psychology has provided evidence that preexisting beliefs can influence subsequent interpersonal encounters. Therefore, it is plausible that clients' treatment expectations could similarly influence the therapeutic alliance. Empirical findings have supported this hypothesis, as treatment expectations have been shown to account for more than 23% of the variance in the alliance (Anderson et al., 2013; Patterson, Uhlin, & Anderson, 2008). Joyce and Piper (1998) reported that the relationship between treatment expectations and the alliance was stronger than the relationship between treatment expectations and outcome. Thus, it is possible that expectations have a direct effect on the therapeutic alliance and an indirect effect on outcome via the alliance.

Some evidence implicates the alliance as a mediator of the outcome expectancy–outcome link (Abouguendia, Joyce, Piper, & Ogrodniczuk, 2004; Joyce, Ogrodniczuk, Piper, & McCallum, 2003; Meyer et al., 2002). To the best of our knowledge, only one study (Patterson, Anderson, & Wei, 2013) has examined whether the alliance mediates the treatment expectancy–outcome link; the results from this analysis, however, were nonsignificant. As discussed by Patterson and colleagues, this null finding may have been because of small sample size ($n = 68$ clients). Moreover, Patterson and colleagues employed Baron and Kenny's (1986) approach to testing mediation, which yields relatively high Type II error rates (see Shrout & Bolger, 2002). The current study will investigate the possible mediating role of the alliance in the treatment expectancy–outcome link using a more sophisticated statistical procedure and with a larger sample.

Even if the alliance is a mechanism through which treatment expectations operate, there is a dearth of knowledge about how the alliance, in turn, affects outcome. That is, like treatment expectations, the alliance often is predictive of outcome (Horvath, Del Re, Fluckiger, & Symonds, 2011), yet the specific route through which the alliance exerts its effects on outcome is a mystery (Castonguay, Constantino, & Holtforth, 2006).

The alliance might be curative in and of itself (Martin, Garske, & Davis, 2000). That is, regardless of other psychological interventions, clients may improve simply through experiencing an emotional bond with a therapist and collaborating on the goals and tasks of treatment. This assertion—that the alliance itself is therapeutic—seems credible; interpersonal connection seems to enhance feelings of well-being (Allen, Haslam, & Smedard, 2005), and collaborating with a professional likely instills comfort and optimism about the future. These positive feelings, like happiness and well-being, may be experienced by clients when engaging in a strong therapeutic alliance and hence may be detectable immediately after a therapy session. This boost to the client's mood could, in turn, counteract psychopathology symptoms (e.g., depressed affect) and could initiate a cascading effect that leads to improvements in functioning and quality of life.

In summary, clients' postsession feelings of positivity may transmit the effects of the alliance on to treatment outcome. To assess the client's positive and/or negative moods after a session, the Positivity Subscale of the Session Evaluation Questionnaire (SEQ-Positivity; Stiles, 1980; Stiles & Snow, 1984; Stiles et al., 1994) has been frequently used. SEQ-Positivity is thought to capture the immediate effect that therapeutic processes have on clients (Stiles et al., 1994), which is supported by positive correlations between the alliance and SEQ-Positivity (Ackerman, Hilsenroth, Baity, & Blagys, 2000; Horvath & Marx, 1990; Mallinckrodt, 1993). In addition, SEQ-Positivity has been shown to predict treatment outcome (Joyce & Piper, 1990; Mallinckrodt, 1993). In one study (Pesale, Hilsenroth, & Owen, 2012), SEQ-Positivity accounted for over 12% of outcome variance. Despite significant associations with the alliance and with outcome, the mediating role of SEQ-Positivity in the relation between the alliance and outcome has not been investigated.

The goal of this study was to test a mediation model that links treatment expectations, the alliance, session positivity, and outcome. As is consistent with the broader literature (e.g., Joyce et al., 2003), the alliance was positioned as a potential mediator of the treatment expectancy–outcome association. We extended this mediation model by adding session positivity (i.e., SEQ-Positivity) as a potential mediator of the effects of the alliance on outcome. This was informed by the theoretical rationale provided, and the research that has linked SEQ-Positivity to both the alliance (e.g., Ackerman et al., 2000) and to outcome (e.g., Pesale et al., 2012). In this way, a three-path mediation model (see Taylor, MacKinnon, & Tein, 2008) was constructed. We specifically hypothesized that the association between clients' treatment expectations and

outcome will be mediated first by the alliance and then by session positivity. The current research is the first to explore this three-path mediation model, and thus has the potential to shed light on the intricacies and underlying dynamics of psychotherapy.

Method

This study used archival data that were collected over a 5-year period at a university psychology clinic. The final sample in this study is distinct, yet it overlaps with samples from previous and ongoing projects (e.g., Patterson, Anderson, & Wei, 2013). Institutional review board approval was obtained for collecting and analyzing these data.

Participants

Prospective participants were 177 adult clients who received psychotherapy at a Midwestern university psychology clinic. Clients who attended less than five therapy sessions ($n = 24$) were excluded because the amount of process and outcome data available for these clients was deemed to be insufficient for analyses. Thirty-seven additional clients were excluded because of missing process and/or outcome data.

Of the final sample ($n = 116$), most clients (76%) were university students, while the rest were adult members of the local community. Mean age of clients was 24.1 years (standard deviation [SD] = 7.4). The sample predominately comprised female clients (70%), and 81% were White, 1% Black/African American, 1% Hispanic/Latino, 1% Asian/Pacific Islander, and 16% did not identify a race/ethnicity. Clients reported seeking treatment for a variety of reasons, including anxiety (28%), depression (19%), relationship problems (17%), academic/occupational stress (11%), or other reason (e.g., weight/eating concerns, grief, insomnia, anger issues). On average, clients entered therapy with clinically significant levels of distress and impairments in functioning (Mean Pretreatment Outcome Questionnaire-45 = 76.4; see Lambert et al., 2004). Participating clients provided written consent to allow researchers, therapists, and supervisors to have access to their process and outcome data. The final sample of 116 clients attended a mean of 13.27 sessions ($SD = 9.84$).

Clients were seen by 1 of the 49 therapists, who were students enrolled in a clinical psychology PhD program. As is customary in this program, students provide psychotherapy in the university's psychology clinic during the second and third years of their training. Clients were assigned to therapists in an ecologically valid manner based on real-world issues, such as therapist availability, caseload, etc. All sessions of therapy were audio- or videorecorded by therapists for use in supervision. For a typical caseload (e.g., two to three clients), therapists received approximately one hour of individual supervision and 2 hours of group supervision. Therapists were mostly female (75%), and their mean age was 25.2 years. Therapists identified as White (88%), Black/African-American (6%), or Asian/Pacific Islander (6%). When asked to choose a theoretical orientation for psychotherapy, 56% chose eclecticism, 34% cognitive-behavioral, and 10% dynamic or humanistic.

Measures

Expectations about counseling-brief form (EAC-B; Tinsley, Workman, & Kass, 1980). The EAC-B measures clients' expectations about the nature, roles, and process of treatment (i.e., treatment expectations). The 13-item realism scale was omitted because this scale's items are specific to local clinic practices, and thus not intended as a measure of common treatment expectations. The remaining 53 items are prefaced by either "I expect to . . ." or "I expect the counselor to . . ." Each item is rated on a 7-point scale with response options that range from 1 (*not true*) to 7 (*definitely true*).

Factor analyses of the EAC-B have yielded practically identical three-factor solutions, with factors labeled (a) client involvement, (b) counselor expertise, and (c) facilitative conditions (Aegisdóttir, Gerstein, & Gridley, 2000; Anderson et al., 2013; Hatchett & Han, 2006; Hayes &

Tinsley, 1989; Tinsley, Holt, Hinson, & Tinsley, 1991). Anderson and colleagues (2013) found that these three factors were moderately to highly correlated (r s ranged from .34 to .67), and they could be organized in a hierarchical structure with the highest level representing overall treatment expectations (i.e., total EAC-B). This total EAC-B score, which is a mean of the EAC-B items, predicted the alliance, session effect, and treatment outcome as well as the individual factors (Anderson et al., 2013). Therefore, we used the total EAC-B as a measure of overall treatment expectations. The total EAC-B had strong internal consistency in the present study ($\alpha = .93$).

The working alliance inventory-short form revised (WAI-SR; Horvath & Greenberg, 1989; Hatcher & Gillaspay, 2006). The WAI-SR is a 12-item self-report measure of the strength of the therapeutic alliance. The WAI-SR is based on a pantheoretical view of the therapeutic alliance, which has three components (measured by four items each): (a) agreement on the *goals* of therapy, (b) agreement on the *tasks* of therapy, and (c) development of an affective *bond*. Only the total score, which combines these three components, was utilized in the current study. The WAI-SR has demonstrated good psychometric properties in past research (Hatcher & Gillaspay, 2006; Munder, Wilmers, Leonhart, Lister, & Barth, 2010), and its internal consistency in the present sample was quite high ($\alpha = .92$).

The positivity subscale of the session evaluation questionnaire (SEQ-positivity; Stiles, 1980; Stiles & Snow, 1984; Stiles et al., 1994). SEQ-Positivity was developed to capture session effect by measuring the client's positive and/or negative mood upon completing a therapy session. SEQ-Positivity consists of 5 items, each of which begins with the phrase "Right now I feel." These items are then rated on a 7-point, bipolar adjective scale and are anchored with the following terms: happy/sad, confident/afraid, pleased/angry, definite/uncertain, and friendly/unfriendly. The SEQ has been supported by factor analytic and psychometric studies (Stiles, 1980; Stiles & Snow, 1984; Stiles et al., 1994). Internal consistency for SEQ-Positivity in the present sample was strong ($\alpha = .88$).

The outcome questionnaire -45 (OQ-45; Lambert et al., 2004). The OQ-45 is a 45-item self-report outcome instrument that was designed for repeated measurement of client progress over the course of therapy. Each item is rated on a 5-point Likert scale, ranging from 0 (*never*) to 4 (*almost always*). Higher scores on the OQ-45 correspond to greater levels of distress and impairment in functioning. Psychometric properties of the OQ-45, including reliability and validity, are very strong (see Lambert et al., 2004). Only the total OQ-45 score was used in the present study, and it demonstrated good internal consistency at pretreatment ($\alpha = .94$).

Procedure

The procedures for this study were part of the routine procedures of the psychology clinic. The EAC-B was administered to clients when they arrived for their first session (i.e., at pretreatment). The OQ-45 was routinely administered to clients immediately before each therapy session, but only OQ-45 scores at pretreatment and posttreatment were analyzed.

The WAI-SR and SEQ-Positivity were administered to clients immediately after each therapy session. For each client, mean scores were calculated for the WAI-SR and for SEQ-Positivity based on data reported from sessions three through nine. Means from sessions three through nine were used because (a) most research has studied SEQ-Positivity in the early/middle stage of therapy (e.g., Pesale et al., 2012); (b) alliance measures like the WAI-SR tend to become more stable only after the first few therapy sessions (Horvath et al., 2011); (c) averaging across seven sessions allowed for more stable measurements of the alliance and session positivity (see Stiles & Snow, 1984); and (d) this produced a single variable for the WAI-SR and a single variable for SEQ-Positivity, which were needed for the bootstrap analysis. For clients who attended fewer than nine sessions ($n = 34$), mean scores were calculated for the WAI-SR and SEQ-Positivity from data reported at session three through their final session. Means and standard deviations for all measures are reported in Table 1.

Table 1
Means (and Standard Deviations) for All Treatment Measures, N = 116

	<i>M</i>	<i>(SD)</i>
EAC-B	272.9	40.3
WAI-SR	51.2	6.7
SEQ-Positivity	24.9	4.9
Pretreatment OQ-45	76.4	15.4
Posttreatment OQ-45	65.3	16.3

Note. SEQ = Session Evaluation Questionnaire; EAC-B = Expectations about Counseling-Brief Form; WAI-SR = Working Alliance Inventory-Short Form Revised; OQ-45 = Outcome Questionnaire-45.

Table 2
Bivariate and Partial Correlations for All Measures, N = 116

	SEQ Positivity	EAC-B	WAI-SR	OQ-45- Outcome
SEQ-Positivity	—	.30**	.47**	-.33**
EAC-B		—	.43**	-.27*
WAI-SR			—	-.26*
OQ-45 Outcome				—
OQ Change				—

Note. SEQ = Session Evaluation Questionnaire; EAC-B = Expectations about Counseling-Brief Form; WAI-SR = Working Alliance Inventory-Short Form Revised; OQ-45-Outcome = Outcome Questionnaire-45 (posttreatment OQ-45 scores, when controlling for pretreatment OQ-45 scores).

* $p < .05$. ** $p < .001$.

Results

Two preconditions need to be met prior to testing for mediation (see Kazdin, 2007). The first is that the independent variable must be related to the dependent variable. The second precondition is that the proposed mediator(s) must be significantly related to both the independent variable and the dependent variable. Accordingly, bivariate and partial correlations were used to examine the relationships between clients' treatment expectations (EAC-B), the therapeutic alliance (WAI-SR), session positivity (SEQ-Positivity), and outcome (posttreatment OQ-45, when controlling for pretreatment OQ-45). All variables were significantly related to each other (see Table 2). Therefore, the preconditions for testing mediation were satisfied.

The three-path mediated effect was tested with a bootstrap (data resampling) procedure. Statisticians recommend the bootstrap approach, given that it minimizes Type I and Type II error rates (MacKinnon, Lockwood, & Williams, 2004; Shrout & Bolger, 2002). The bootstrap analysis was conducted in SPSS with the Hayes, Preacher, and Myers (2010) MED3C Macro. This macro generates bias-corrected bootstrap confidence intervals (CIs) for testing the statistical significance of the three-path mediated effect. The 95% CI for the estimate of the mediated effect was obtained with 5,000 bootstrap resamples. If this confidence interval does not include zero, then it can be concluded that the mediated pathway is statistically significant at the .05 level (Hayes et al., 2010).

The EAC-B was entered as the independent variable, the WAI-SR was entered as the first mediator, SEQ-Positivity was entered as the second mediator, posttreatment OQ-45 was entered as the dependent variable, and pretreatment OQ-45 was entered as a covariate. The effect of EAC-B on posttreatment OQ-45 (when controlling for pretreatment OQ-45) through WAI-SR and then SEQ-Positivity was significant ($B = -0.89$, 95% CI [-2.06, -0.05]). This finding provides support for the three-path mediation model.

A bootstrap analysis was conducted, post hoc, to test the most likely, alternative pathway. We switched the position of our two mediators to investigate if the effect of clients' expectations on

outcome is mediated first by session positivity and then by the alliance. The three-path mediated effect of EAC-B on posttreatment OQ-45 (when controlling for pretreatment OQ-45) through SEQ-Positivity and then WAI-SR was nonsignificant ($B = -0.15$, 95% CI [-0.65, 0.39]). Thus, the notion that SEQ-Positivity precedes the alliance in the three-path mediation model was not supported.

Discussion

We found that the effect of clients' treatment expectations on outcome is mediated by two variables acting in turn, the therapeutic alliance and then session positivity. This is consistent with the hypothesis that high treatment expectations strengthen the alliance, which contributes to clients feeling positive upon completing their sessions and, in turn, facilitates improvements in symptoms and functioning.

One component of this three-path mediated effect is that the alliance appeared to mediate the association between treatment expectations and outcome. This is the first demonstration that the alliance plays a mediating role in the treatment expectancy–outcome link, and it supplements a small but growing body of evidence that the alliance mediates the outcome expectancy–outcome link (see Constantino et al., 2011). It may be that expectations about being highly involved in therapy induce clients to actually be more involved and collaborative in the therapeutic relationship. Similarly, clients who have high expectations for facilitative conditions may elicit more alliance-building behaviors from their therapist. In this way, the alliance may develop, in part, because of a self-fulfilling prophecy.

The results further imply that treatment expectations affect outcome via their effects on the alliance. Of course, the alliance is likely to be only one of many mechanisms through which treatment expectations operate; Joyce and Piper (1998) found that treatment expectations predicted outcome above and beyond the influence of the alliance. Therefore, treatment expectations may have other sequences of effects that are independent of the alliance. These additional mechanisms should be explored in future research.

A novel contribution of the current study is that session positivity was found to mediate the effects of the alliance on outcome. According to this finding, clients who share a strong alliance with their therapist tend to feel happier and more confident, pleased, definite, and friendly upon completing their sessions (i.e., SEQ-Positivity) and, in turn, tend to make more progress over the course of therapy. One could speculate from this finding that the alliance is therapeutic, at least in part, because it uplifts the client's mood; that is, the alliance may create positive feelings for clients, which may counteract psychopathology symptoms (e.g., depressed affect). This interpretation of our results is consistent with the widespread belief that the alliance is curative in and of itself.

We want to stress that our findings are *consistent* with, rather than proof of, the hypotheses herein. Conservative interpretations are warranted because the current study relied on passive observation to study the relationships between the treatment variables. Without experimental manipulation, it would be premature to draw conclusions about causality between two or more variables.

As with any passive observation analysis, there are two alternative explanations that are worth noting. First, it is possible that confounding variables had an effect on our results. SEQ-Positivity ratings, for instance, might have been affected by a host of factors besides the variables under study (Stiles et al., 1994). There could have been another variable (e.g., therapists' empathy) that correlated with the alliance and that in fact drove the effects on SEQ-Positivity. Therefore, in this case, the inferred relationship between alliance and SEQ-Positivity would be spurious. As articulated by Kazdin (2007), the study of mediators can be clumsy and is often an initial step for understanding mechanisms of change. Kazdin (2007) advises: "Understanding mediators and then mechanisms is not a matter of one study, but is a matter of creeping up on the process that draws on a series of projects often seemingly unrelated or from different disciplines or types of research" (p. 11).

The second alternative explanation for our findings pertains to the possibility of reverse causation; that is, even if the studied variables were influencing each other, the inferred direction

of influence may be misleading. Regarding this methodological shortcoming, we would submit that the organization and directional links within our model were constructed to be as intuitive and parsimonious as possible. As represented in our model, it seems logical to place clients' treatment expectations before all other variables because this was the only variable that was exclusively assessed at pretreatment. Additionally, outcome was positioned at the end of the model because posttreatment outcomes were assessed after treatment expectations, the alliance, and session positivity. We also conducted a post hoc bootstrap analysis to investigate the most plausible alternative to our model. This provided support for the notion that the alliance preceded SEQ-Positivity (and not the other way around) in the three-path mediation model.

Limitations

This size of our three-path mediated effect is difficult to discern. The distinction between full and partial mediation, while popular in the literature, is problematic for a number of reasons (see Preacher & Kelley, 2011). Preacher and Kelley (2011) recently created new methods for assessing the magnitude of the mediated effect. However, these methods have been developed only within the context of the simple mediation model, and an extension to multiple mediation models still needs to be devised and investigated (Preacher & Kelley, 2011).

There are other limitations that are more unique and specific to the methodology of the current research. First, while the average client in this study reported clinically significant levels of distress and impairments in functioning, it is unclear if our findings generalize to clients with more severe psychopathology (e.g., inpatient). Furthermore, our client sample was not demographically representative; most of the clients identified as White and female, and were relatively young. Given that all of the data were assessed with client-rated measures, shared method variance may also be influencing the results. Another limitation is that mean averages for the WAI-SR and SEQ-Positivity were calculated across sessions, so it unknown how these scores vary session by session. Finally, while there may have been therapist effects on the process and outcome variables, we did not account for these potential effects in the mediation analyses.

Conclusion

Despite these limitations, the current study provides evidence that the treatment expectancy–outcome link is mediated first by the alliance and then by session positivity. One advantage of this three-path mediation model is that it is nonspecific with regard to theoretical orientation and treatment modality; that is, virtually all forms of therapy involve treatment expectations, an alliance between client and provider, session positivity/negativity, and outcome. Therefore, it is possible that this model captures a mechanism of change that is common across the various types of treatment (see Barlow et al., 2013; Kazdin, 2007). Additional research is needed to replicate the three-path mediation model and develop it further based on empirical evidence.

This three-path mediation model may have important implications for the theory and practice of psychotherapy. Because session positivity seemed to transmit the effects of treatment expectations and the alliance on to outcome, efforts should be made to enhance clients' moods during therapy sessions. Therapists could assess mood with the SEQ-Positivity subscale and attempt to indirectly influence levels of positivity and negativity by enhancing treatment expectations and the quality of the alliance. Specifically, given that expectations are considered to be malleable (Constantino et al., 2011), therapists could employ therapeutic strategies that are designed to address treatment expectations (see Constantino et al., 2012). These strategies (e.g., socialization, process negotiations) would likely produce a cascade of effects on the alliance, session positivity, and, in turn, symptom improvement. However, other therapeutic strategies (e.g., cognitive restructuring, affirmation) may affect clients' in-session mood more directly and thus may play a more pivotal role in client outcome. These recommendations, while grounded in the current results, are highly speculative and will require additional empirical attention.

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