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ALLIANCE BY TREATMENT EFFECTS IN

GENERALIZED ANXIETY DISORDER

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ABSTRACT

The therapeutic alliance is often regarded as the quintessential common factor. However, methodological limitations of research to date make it unclear whether alliance truly operates in a uniform manner across time in disparate psychotherapy treatment approaches. This study examines the course of alliance across two manualized treatments, Cognitive-Behavioral Therapy (CBT) and Interpersonal/Emotional Processing Therapy (IEP) for Generalized Anxiety Disorder, administered concurrently to the same clients by the same therapists in an additive design. Findings suggest that therapist-rated alliance was slightly higher in CBT than IEP and increased linearly over time for both treatment approaches. Client-rated alliance failed to show a treatment type, phase, or type-by-phase interaction. Results are discussed in terms of common factors theory, research on temporal patterns of alliance, and treatment-specific effects. Limitations and future directions are also discussed.

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Introduction

Psychotherapy has been demonstrated to be effective in ameliorating a wide range of mental health problems, with 80% of those receiving treatment improved relative to those who are untreated (Lambert & Bergin, 1994). With clear evidence that psychotherapy works, attention has shifted to understanding the why and how of the therapeutic process, identifying the mechanisms of change responsible for symptom reduction and functional improvement. Given the complexity of human growth processes and the therapeutic endeavor, however, empirically establishing the active ingredients of treatment has been a considerable challenge for the field. Reliance on the scientific process has been essential in this regard, and has yielded surprising findings, most notably the equivalence of treatments (Luborsky, Singer, & Luborsky, 1975; Smith & Glass, 1977). Despite strong allegiance of practitioners to specific underlying theories of change, meta-analytic findings repeatedly show no universal superiority for any one approach; rather, it seems there are multiple equally effective ways to treat adult mental health disorders (Lambert, 2005; Wampold, 2001). The finding of equivalence has spurred efforts to understand active change ingredients at a more fine-grained level – through examination of the varied and interacting effects of the technique, the participants (client and therapist), and the relationship. In particular, it has raised important questions regarding the role of common factors.

Common factors are defined as elements or dimensions of treatment that cut across different forms of therapy (Castonguay, 1993; Castonguay & Holtforth, 2005). They may be facets of the technique, the therapeutic relationship, or brought by the

participants – client or therapist, but are defined as common through their universal

role in most if not all effective forms of treatment (see Castonguay, 1993; Castonguay

& Holtforth, 2005 for a discussion of common, as opposed to nonspecific, variables).

Frequently studied common factors with links to outcome have included client hope

and expectation, treatment credibility, therapist warmth and positive regard, and

facilitation of a corrective emotional experience (Lambert & Bergin, 1994; Frank,

1982; Goldfried, 1980). To date the most studied and best supported element of

treatment, however, has been the therapeutic relationship, and more specifically the

working alliance (Horvath & Bedi, 2002), which has been dubbed the 'quintessential'

integrative or common factor (Wolfe & Goldfried, 1988).

Working Alliance

Alternately referred to as the therapeutic alliance, working alliance, helping

alliance, or just 'alliance' (Horvath, Gaston, & Luborsky, 1993), this relationship

variable has been examined in more than 2,000 psychotherapy studies (Horvath &

Bedi, 2002).

The alliance has been conceptualized as a subcomponent of the broader relationship

between therapist and client and, together with the real relationship and the

transference, is thought to make up the therapeutic relationship (Gelso & Carter,

1994; Gelso & Hayes, 1998).

Historically, the construct of alliance has emerged from, and has long been

associated with, the psychodynamic tradition. However, the alliance is

contemporarily regarded as a therapeutic process that cuts across theoretical

orientation. This conceptual change is largely due to the seminal work of Bordin (1979) whose transtheoretical definition includes three major components: a bond, an agreement with the tasks of therapy, and an agreement regarding treatment goals. Clearly reflecting Bordin's contribution there seems to be a contemporary consensus within the field that alliance represents "interactive, collaborative elements of the relationship (i.e., therapist and client abilities to engage in the tasks of therapy and to agree on the targets of therapy) in the context of an affective bond or positive attachment" (Constantino, Castonguay, & Shut, 2002, p. 86). Alliance has been found to predict treatment outcome in CBT, dynamic, interpersonal, humanistic, systemic, integrative, eclectic, 12-step, and psychopharmacological approaches (Constantino et al., 2002). Two major meta-analyses suggest that the link between alliance and treatment outcome is modest yet robust, with an effect size of .22 to .26 (Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000), a small to medium effect reflecting modest change for most clients. Though explaining a relatively modest proportion of overall variance, within the context of the complexity of psychotherapy, this traditionally has been viewed as a highly meaningful effect (Horvath & Bedi, 2002). Moreover, alliance explains a larger percentage of variance than any other treatment component studied to date, including elements of technique (Chambless, Crits-Cristoph, Wampold, Norcross, Lambert, Bohart, Beutler, & Johansen, 2006). However, the mechanism of action behind the alliance is unclear; multiple theory specific rationales have been posited regarding its role. Viewed by some (humanistic, dynamic) as curative in and of itself and by others (CBT) as a necessary but insufficient condition to allow techniques to have their effect – either

by retaining the client in therapy and/or by enhancing engagement and motivation –
the influence of the alliance is hotly debated and differently conceived depending
upon treatment orientation (e.g., Constantino et al., 2002; Gelso & Carter, 1994;
Gelso & Hayes, 1998; Horvath et al., 1993). Yet, despite variation in hypothesized
mechanisms of action across treatment types, no systematic differences in level of the
working alliance or strength of the relationship on outcome have been found
(Constantino et al., 2002), lending credence to the notion that alliance truly is a
universal common factor.

The role of common factors in psychotherapy is controversial (Ahn &
Wampold, 2001; Luborsky, Rosenthal, Diguer, Andrusyna, Berman, Levitt, et al.,
2002). Definitive demonstration of a variable as common is difficult in part because
commonality is by definition a null hypothesis (Wampold, 2005). As such,
equivalence across treatment approaches suggests little about mechanisms or active
ingredients of change (Siev & Chambless, 2007). In fact, some argue that despite
equivalent outcome, alliance may putatively operate differently within different forms
of psychotherapy or with different client populations (DeRubeis, Brotman, &
Gibbons, 2005). Scientifically establishing this is challenging, however, for several
reasons. First, alliance cannot be manipulated – pragmatically because it is an
intersubjective phenomenon co-created by client and therapist and thus not entirely
under treater control; ethically because it has been so consistently and positively
linked to outcome that to artificially reduce it would be to provide inferior treatment.
Second, methodological approaches used to date are plagued by several confounds,
most notably researcher allegiance and therapist effects. Given the ongoing

controversy regarding specificity, as well as the implications of the alliance for treatment development and implementation, further empirical investigation is warranted regarding alliance as a common factor, with careful consideration to methodology. As noted by Borkovec and Castonguay (1998),

> When the results of scientific studies…directly or indirectly affect
> clinical training, clinical treatment, and financial decisions about how
> to treat, it is useful for us to return to our roots in empirical science
> and to carefully consider again the nature of our scientific methods and
> what they do and do not provide in the way of possible conclusions.
> (p. 136).

Methodologically, support for the universal role of alliance comes primarily from meta-analytic findings of treatment outcome studies (Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000). Meta-analysis offers the advantage of aggregating effects across a large number of studies. In the case of alliance over 100 studies in two major meta-analyses (Martin et al., 2000) provide a significant volume of support. However, despite its strengths, the meta-analytic approach has also been criticized for examining effects at such a broad level that meaningful differences between treatments subgroups are obscured (Ahn & Wampold, 2001). Aggregation of wait-list comparison studies introduces heterogeneity of important treatment variables, including treatment length, manualization, adherence, therapist effects, and patient population/primary diagnosis. The contribution of each typically cannot be systematically examined in meta-analysis, making isolation of alliance effects challenging.

Tests of alliance have also come from comparative outcome studies that pit two active treatments. This approach reduces confounds by standardizing treatment length, ensuring equivalent patient populations, and monitoring manualization and

adherence to protocol. The National Institute of Mental Health (NIMH) Treatment of Depression Collaborative Research Program (TDCRP) is a prototype in this regard, comparing alliance across CBT, interpersonal psychotherapy, and active and placebo pharmacotherapy (Krupnick et al., 1996). TDCRP's examination of alliance in a large sample ($N = 225$) of depression cases with random assignment to treatment condition offers the advantage of holding constant length of treatment, sample, and presenting problem.

However, comparative outcome designs are inherently flawed because they cannot demonstrate what specific aspect of the treatment accounted for the outcome (Behar & Borkovec, 2003; Borkovec & Sibrava, 2005) and because of confounding therapist and researcher allegiance effects. Researcher allegiance and outcome are highly correlated, with an effect size of .85 that reflects bias toward the researcher's preferred treatment approach (Luborsky et al, 1999; Lambert, 2005). Therapist effects are also strong predictors of outcome (Okiishi, Lambert, Nielson, & Ogles, 2003), and in the TDCRP explained a greater proportion of variance than technique factors (8% vs. 0%; Kim, Wampold, & Bolt, in Wampold & Bhati, 2004).

A stronger empirical test of active ingredients and more specifically alliance as a common factor would involve an additive design in which treatments were concurrently delivered by the same therapist to the same patient (Behar & Borkovec, 2003). Such a design would permit more empirically rigorous tests of equivalence of alliance level and strength of the alliance and its role as a common factor across two distinct treatment approaches in which patient population and therapist were

controlled. A potentially fruitful avenue for exploring specificity in this regard is through examination of the temporal course of alliance across two treatments.

Alliance Patterns across Time

Early analytic theorists viewed alliance as a dynamic process that fluctuated across the treatment. From an analytic perspective, psychotherapy works through the transference, and as such the relationship necessarily fluctuates as part of the therapeutic change process (Gelso & Carter, 1994). In contrast, early psychotherapy researchers operationalized alliance in a static manner, with measurement occurring at a single point during treatment. Meta-analysis has documented, however, that timing of measurement does affect findings (Horvath & Symonds, 1991). Early alliance (sessions one through five) is more predictive of outcome than alliance measured in midtreatment or averaged across the entire treatment (ES = .30 vs. ES = .21; Constantino et al., 2002; Horvath & Symonds, 1991). Late alliance has predicted outcome best in some cases (e.g., Stiles et al., 1998) but this finding is difficult to interpret due to confounding with symptomatic and functional improvement.

The predictive power of early alliance has been attributed to a process of engagement in treatment, a perspective supported by the finding that session one alliance predicts dropout (Tracey, 1993). However, early positive alliance is also predicted by theories of therapeutic change. One theoretical model that has received direct assessment by researchers is that laid out by Gelso and Carter (1994). They suggest that the centrality of alliance to the work ebbs and flows during treatment, with alliance starting in the foreground and fading to background once an initial

positive working relationship is established. Alliance may come again to the foreground during 'crises in the work' such as empathic failure on the part of the therapist, separation, emergence of negative transference, or other client resistances. More specifically, they predict: "Especially in treatments that abbreviate duration, an initially sound working alliance will subsequently decline, but in successful therapy this decline will be followed by an increase to earlier high levels." (p.301-2). Because the concept of alliance originated as a dynamic/analytic construct, much of the theory about alliance retains some analytic influence. According to dynamic and analytic theory, treatment is comprised of three phases: alliance building, working through, and termination. During the midphase or "working through" process therapists become more challenging and patient resistance increases, leading to a theoretically expectable drop in the alliance (Horvath et al., 1993). A series of case studies (Golden & Robbins, 1990; Horvath & Marx, 1990; Miller, Courtois, Pelhan, Riddle, & Spiegel, 1983) demonstrates initial empirical support for this theory within short-term dynamic treatment. Whether such fluctuation is also characteristic of nondynamic approaches such as CBT, however, is unclear. Findings of differential alliance patterns across treatment types, however, would suggest specificity in the mechanism of action.

Based on promising case study findings of alliance fluctuations occurring across the course of treatment in good outcome cases, in the mid 1990's several investigators tested Gelso and Carter's theory of alliance fluctuation in a larger sample, utilizing new methodologies to compare individual growth curves. Specifically, hierarchical linear modeling (HLM) was used to examine patterns of

change in working alliance across treatment of students in a counseling center

(Kivlighan & Shaughnessy, 1995). Linear growth in alliance predicted outcome, but

overall strength did not, supporting the importance of understanding alliance pattern,

but failing to support the specific quadratic or high-low-high pattern predicted by

Gelso and Carter (Kivlighan & Shaughnessy, 1995). A second study of 16 clients

treated with psychoanalytic counseling for interpersonal problems did support the

quadratic pattern, however (Patton, Kivlighan, Multon, 1997).

Individual growth curve findings have spurred further experimentation in

methodology. Based on the idea that HLM may miss important subgroup differences

in pattern change across time, cluster analysis has been used to identify subgroups of

patients with distinct alliance patterns (Kivlighan & Shaughnessy, 2000; Stiles et al,

2004). Analysis of a four-session treatment of volunteer clients found three distinct

alliance clusters: positive linear, stable, and curvilinear (high-low-high). Findings

support the best outcomes for the curvilinear group. In a replication and extension of

this study (Stiles et al., 2004) 79 patients with depression were treated with CBT or

dynamic therapy and alliance patterns analyzed with cluster analysis. Stable and

linear clusters were replicated, but curvilinear was not; rather, two new clusters –

"stormy" and early negative to stable alliance were found. Post hoc analyses by the

authors detected v-shaped deflections with sharp rise and fall patterns which are less

in keeping with phase theories of alliance change but are in line with a theory of

rupture and repair (Safran & Muran, 2000). According to this theory alliance

fluctuations occur continually over time. Like a muscle getting stronger the alliance

in successful treatment is thought to go through repeated "tear and repair" cycles by

which micro degradation of alliance reflect opportunity for growth and strengthening. Successful resolution of alliance rupture is thought to predict outcome with some initial support (Safran & Muran, 2000).

Based on findings from this handful of studies, several conclusions may be drawn. First, consideration of alliance at a single point in time obscures important nuances in the change process. Continued examination of alliance should take into account pattern of change over time. Second, the majority of studies to date have examined psychodynamic treatment. Third, none have been able to directly compare patterns in theoretically different treatments in a manner that avoids confounding influences such as therapist effect. The ability to compare alliance patterns within an additive design (involving the combination of two effective treatments) would offer a unique opportunity in this regard to further explore specificity of the alliance across treatment types.

Finally, studies to date of alliance fluctuation have predominately used a heterogeneous sample (counseling centers and volunteer clients), introducing an additional confound in method variance. Since previous studies have demonstrated that alliance level is affected by patient characteristics such as diagnosis and personality style (Clarkin & Levy, 2004; Zack et al., 2007), it is possible that these variables also impact the fluctuating pattern of alliance. More specifically, interactions may be expected between alliance and treatment type for specific populations. For instance in one treatment study of clients with anxiety and depression, CBT evidenced higher observer-rated alliance scores whereas dynamic treatment evidenced greater variability in alliance. In addition, symptom measures

were negatively correlated with observer-rated alliance in the dynamic condition, suggesting a possible differential affect of treatment for this population (Raue, Castonguay, & Goldfried, 1993). Additionally, in a study comparing cognitive-behavioral therapy (CBT) and interpersonal therapy (IPT) for bulimia nervosa baseline symptoms negatively predicted alliance at mid-treatment in the CBT condition, whereas baseline interpersonal difficulties negatively predicted alliance in the IPT condition. This suggests that alliance may fluctuate in direct relation to the treatment techniques that most challenge a patient as a result of their pretreatment characteristics; in this case, according to each model's theory of change, as IPT focuses on working through interpersonal problems and CBT on symptom reduction (Constantino, Arnow, Blasey, & Agras, 2005). To date only depression and eating disorders have received focus as target populations in studying alliance patterns, however (Constantino et al., 2005; Stiles et al., 2004). There is a need for study of additional psychiatric disorders with a focus on population-specific hypotheses vis-à-vis treatment alliance interactions.

The proposed study presents an opportunity to examine alliance within a Generalized Anxiety Disorder (GAD) sample. GAD is an ideal population for several reasons. The disorder is a commonly occurring one resulting in considerable personal distress and impairment, as well as significant societal costs, warranting the need for effective intervention. Despite well-established approaches, only half of those receiving treatment for GAD are benefiting. This has led to the recent development of new treatment approaches for which differential patterns of the alliance might be expected. Therefore, it is predicted that the unique pattern of strengths and

vulnerabilities characterizing individuals with GAD will predict different treatment by alliance interaction patterns in cognitive-behavioral as opposed to interpersonal or emotion-focused approaches. Evidence for each of these assertions is taken up in the following section.

Generalized Anxiety Disorder

Generalized Anxiety Disorder (GAD) is a relatively common mental health condition and the most common of the anxiety disorders with a 1.6% current and 5.1% lifetime prevalence in the general population (Kessler et al., 1994). Once thought to be associated with minimal impairment (American Psychiatric Association, 1980, 1987; Henning, Turk, Mennin, Fresco, & Heimberg, 2007), the significant personal and societal costs to GAD are now well-established. Individuals with GAD show functional impairment and disability across a wide range of domains, including social, occupational, and personal arenas. They evidence higher rates of unemployment, more days of missed work, and more frequent occurrence of inability to carry out usual role functioning activities than the general population (Henning, et al., 2007; Wittchen et al, 1994; Wittchen, 2002). Rates of marital distress, divorce, and separation are also elevated among those with GAD (Leon, Portera & Weissman, 1995; Wittchen et al., 1994). Self-reports reflect increased interference with daily activity, decreased emotional health, and lower energy levels for this population.

Although impairment across domains of functioning is on average in the mild to moderate range, nearly one third of those with GAD (28%) report severe disability within their romantic relationships (Henning et al, 2007). Even more striking is the

impact of GAD on quality of life. In contrast to many of the Axis-I disorders, GAD is marked by less overt behavioral indicators of outward dysfunction (worry being often private) but is strongly associated with being unhappy and dissatisfied. A recent study assessing quality of life found individuals with GAD to be below the 5th percentile overall and impaired in 15 of 16 life satisfaction domains, with a mean rating reflecting being "extremely unhappy or unfulfilled" (Henning et al., 2007). These findings clearly reflect substantial personal cost as a result of the disorder. In addition, however, GAD is associated with considerable financial burden to society. High rates of unemployment, absenteeism, and low work productivity are one area of cost. GAD is also associated with poor physical health, more frequent somatic complaints, and chronic medical conditions (Newman, 2000; Wells, Golding, & Burnam, 1989). As a result, those with GAD have higher utilization rates for emergency rooms and for hospital admission (Newman, 2000) and often engage in expensive treatments and medical procedures (Roemer et al., 2002) at considerable financial burden to society.

Unlike many Axis I disorders, which tend to develop following an acute stressor, GAD seems to reflect a more chronic, lifelong course, with typical development in childhood or adolescence (Brown, Barlow, & Liebowitz, 1994). Moreover, studies suggest GAD is unlikely to remit on its own (Yonkers, Warshaw, Massion, & Keller, 1996). The early onset and chronic course have led some theorists to note that GAD more closely parallels a characterological or personality disorder pattern than that of other Axis I anxiety disorders (e.g., Brown et al., 1994). Direct assessment of the relationship between GAD and personality disorder suggests

that although no specific personality disorders are associated with GAD, the majority of anxious patients show more maladaptive personality traits than controls. GAD was specifically associated with personality traits of hypervigilance, a tendency to be easily slighted or quick to take offence, suspiciousness and paranoia, and dependent, helpless or reassurance seeking style – in sum, an "expectation of damage" (Gasperini, Battaglia, Diaferia, & Bellodi, 1990). This suggests that like personality disorders GAD may be life long, significantly impairing, and slow to change. Moreover, there is some evidence that GAD acts as a predisposition for other Axis I disorders, particularly affective disorders and additional anxiety disorders. Indeed GAD is highly comorbid with other disorders, particularly mood disorder and anxiety, with 85% comorbidity (Kessler et al., 2005). The hallmark symptom of GAD, pervasive, uncontrollable, excessive worry, is also present in other anxiety disorders as well as depression, leading to suggestions that GAD may be the "basic emotional disorder" (Roemer, Orsillo, & Barlow, 2002).

As a distinct disorder, GAD has a relatively short history. Previously studied as diffuse anxiety, GAD was classified in DSM-III as a residual category to be used for individuals who failed to meet criteria for a more specific anxiety disorder (APA, 1980). In DSM-IIIR (1987) GAD was redefined and given its own core feature: excessive and/or unrealistic worry in areas unrelated to another Axis I disorder; this lead to increased clinical and empirical focus on the condition. However, the disorder remains poorly defined, with the lowest diagnostic agreement (kappa = 0.57; Brown et al., 1994) and highest comorbidity (85%; Kessler et al., 2005) for any anxiety disorder. Progress has been made, however, toward clearer definition. In DSM-IV

(1994) the core feature of GAD was revised again to remove the unrealistic nature of the worry and define it as "pervasive and uncontrollable." In addition, criteria specify a 6 month period marked by worry and three or more of six symptoms: muscle tension, restlessness/feeling keyed up or on edge, difficulty concentrating/mind going blank, being easily fatigued, irritability, and sleep disturbance (APA, 2000). Despite poorer discriminant validity relative to other Axis I disorders, GAD nevertheless shows a specific factor profile of worries and other somatic and psychological symptoms, differentiating it from other anxiety disorders (Brown et al., 1994).

According to Beck (1976) all anxiety disorders share a common feature of "cognitions regarding personal danger"; however, he theorized that GAD patients have specific cognitions regarding rejection, control, domination, and depreciation. A prospective diary study of GAD as compared to Panic Disorder supports this theory, with individuals with GAD reporting more frequent worry over interpersonal conflict (including competence and acceptance), worry about significant others, and worry over minor matters (Breitholtz, Johansson, & Öst, 1999), leading the authors to conclude that "Thoughts about threat, danger, or personal harm, typical features of anxiety, seem for the GAD patients to be characterized by interpersonal relations."

Yet despite its clarified definition, prevalence, centrality as a core feature that may underlie vulnerability to additional disorders, and personal and societal costs, GAD remains the least studied of the anxiety disorders and has the lowest treatment success rates (Brown et al., 1994). Cognitive-behavioral therapy (CBT) is currently the gold standard for empirically supported treatment of GAD and has been found to significantly improve symptoms in a short-term treatment models with long term

maintenance of gains. A 2001 review found 13 controlled trials for GAD that tested

CBT against single component conditions (Behavior Therapy – BT or Cognitive

Therapy – CT), placebo, alternative conditions (psychopharmacological,

psychodynamic, supportive) or no treatment (waitlist control). Results showed CBT

to be superior to the alternative treatments or control in most cases. Effect sizes post-

treatment were small to moderate (mean ES = 0.26) for single component conditions;

small to large for alternative treatments and placebo conditions (mean ES = 0.71) and

large for waitlist control conditions (mean ES = 1.09; Borkovec & Ruscio, 2001).

The authors interpret these findings as reflecting CBT's overall efficacy in treating

GAD, which is in keeping with several previous meta-analyses that also concluded

that CBT is broadly efficacious (Covin, Ouimet, Seeds, & Dozois, 2008). However,

several studies have found dismantled and full packages to be comparable (Barlow,

Rapee, & Brown, 1992), leaving open the question regarding active ingredients of

change; and others have found poor long-term gains following CBT treatment

(Westen & Morrison, 2001). Perhaps most importantly some individuals are not

benefiting at all, with GAD remaining the least successfully treated of the anxiety

disorders (Brown et al., 1994). In fact, high end state functioning post-treatment

(normal range on measures of anxiety symptoms) is achieved in only 40 to 60% of

those treated, and even fewer maintain effects at one year and 18 month follow-up

(Borkovec & Costello, 1993; Ladouceur, Dugas, Freeston, Léger, Gagnon, &

Thibodeau, 2000; Roemer et al., 2002). This suggests the need for continued

development of treatment approaches for GAD.

Efforts to enhance effective treatment approaches for GAD have centered on the observation that GAD, as a disorder characterized by more diffuse anxiety, has a less clear target for intervention than other anxiety disorders which have been successfully treated from a cognitive-behavioral approach. Although disorders such as Panic, Specific Phobia, PTSD, or OCD have clear triggers for anxiety that can be directly addressed through exposure, GAD's core feature of pervasive and uncontrollable worry is more elusive (Brown et al., 1994). Borkovec and colleagues have over the last several decades been addressing this concern through a series of basic science studies aimed at understanding the nature of worry – GAD's core symptom – with an eye toward creating more targeted interventions (e.g., Borkovec, et al., 2004; Borkovec, Robinson, Pruzinsky, & DePree, 1983; Roemer, Molina, & Borkovec, 1997).

Through this research they have developed an avoidance theory of worry. More specifically, they have empirically demonstrated that worry is a verbal-linguistic, cognitive activity employed by individuals with GAD in an effort at experiential avoidance. Worry allows those with GAD to approach emotional content at a more abstract, distant, and conceptual level in order to avoid aversive internal experience, including painful emotion, negative images, and autonomic arousal (Borkovec et al, 2004). A wealth of studies demonstrates that those with GAD show reduced variability in autonomic measures (Borkovec & Newman, 1998). This reflects inhibition of the sympathetic nervous system and chronic parasympathetic or vagal deficiency, including both lowered vagal tone and reduced variation in vagal tone across periods of rest, displays of aversive imagery, or episodes of worrisome

thinking (Borkovec & Newman, 1998). Such physiological constriction is in contrast to the autonomic activation characteristic of other anxiety disorders. However, the findings are in keeping with theory and empirical research regarding GAD which suggests that individuals with this disorder experience chronic hypervigilance to threat and utilize worry in part to dampen physiological activation.

In addition to specific physiological vulnerabilities that characterize GAD, recent studies also find that individuals with GAD have heightened sensitivity to emotion. This results in more intense emotional experience as well as greater deficits in emotion regulation (Mennin, Heimberg, Turk, & Fresco, 2002; Mennin, Heimberg, Turk, & Fresco, 2005), and offers a possible explanation for why those with GAD utilize worry to cope with aversive emotional experience, as worry provides cognitive avoidance of aversive emotion. Theory underlying the origins of emotion sensitivity and emotion dysregulation has pointed in part to histories of early traumatic experience which occurs more frequently for those with GAD and suggests early learning of the world as unsafe and the self as unable to cope (Borkovec & Newman, 1998). In addition to interpersonally based early traumatic experiences, recent theory and empirical findings have emphasized interpersonal functioning deficits in GAD.

Worry content studies find that those with GAD worry most about the interpersonal arena, including social threat and threats to self-esteem and competency (Breitholtz et al., 1999; Borkovec et al., 2004; Roemer et al., 1997). Additionally, the fact that social phobia is the most frequently comorbid anxiety disorder with GAD has been cited as evidence of the important interpersonal component to this disorder (Borkovec, Abel, & Newman, 1995; Newman, Castonguay, Borkovec, Fisher, &

Nordberg, 2008). The tendency of individuals with GAD to worry most about the social arena may, in part, reflect interpersonal functioning deficits. In an experimental design in which those with GAD and normal controls interacted with a confederate, those with GAD tended to either over-estimate or under-estimate their negative impact on the other. Moreover, their degree of misestimation was directly correlated with how well liked they were by the confederate (Erickson & Newman, 2007). This suggests both deficits as well as limited self-awareness of interpersonal skills and is in keeping with previously noted findings of increased marital discord, separation, divorce, fewer close friendships, and less social satisfaction in GAD populations (Newman, et al., 2008).

Individuals with GAD also show higher levels of rigidity in interpersonal relationships, responding with reduced flexibility across different situations relative to nonanxious people (Pincus & Borkovec, 1994). Examination of interpersonal styles using the Inventory of Interpersonal Problems Circumplex Scales has further demonstrated three primary clusters of interpersonal difficulties found in those with GAD: Overly Nurturant/Intrusive, Social Avoidance/Nonassertiveness, Domineering/Vindictive, with the last of these predicting poorer outcome in CBT treatment.

In addition to problems with interpersonal functioning in adulthood, investigations using the Inventory of Adult Attachment have shown that those with GAD show an elevated frequency of childhood familial role-reversed, enmeshed relationships in which the child, rather than being taking care of by the parent, performed the caretaking role (Borkovec 1995, cited in Borkovec & Newman, 1998).

Borkovec and colleagues suggest this may be the basis for the GAD adult view of the world as unsafe. In keeping with these attachment findings, adults with GAD tend to show "inflexible overinvolvement" in adulthood (Cassidy, 1995). Finally, studies find that pretreatment interpersonal functioning predicts improvement in CBT treatment for GAD (Roemer et al., 2000).

Research evidence suggests that CBT may not pay sufficient and/or adequate attention to the interpersonal and emotional difficulties that seem to be involved in the etiology and maintenance of GAD. As recently reviewed by Blagys and Hilsenroth (2000), numerous studies demonstrate that CBT therapists focus significantly less on past and current interpersonal relationships (including the relationship with the therapist) than psychodynamic therapists. Ironically, studies also suggest that although infrequent such focus is positively related to client's improvement in CBT (e.g., Ablon & Jones, 1998; Hayes, Castonguay, & Goldfried, 1996). In addition, although logically targeting cognitive deficits, behavioral avoidance aspects, and muscular tension/hypervigilance characteristic of the disorder, CBT has failed to include interventions aimed at addressing emotion dysregulation or emotional avoidance. In fact, CBT interventions have been found to be significantly lower in emotional processing than supportive listening interventions (Borkovec & Costello, 1993) and are actually frequently aimed at controlling or reducing emotion rather than processing, expressing, or understanding it (Newman et al., 2008). Yet there is evidence that even within CBT emotional experiencing is associated with better outcome (e.g., Castonguay, Goldfried, Wiser, Raue, & Hayes, 1996).

These findings have led researchers to begin developing treatments or treatment modifications with an interpersonal and/or emotional processing emphasis (e.g., Decker, Turk, Hess & Murray, 2008; Mennin, 2004; Newman et al, 2008). Although arguments for the efficacy of such additions to current CBT treatment approaches seem both strong and clear, how such approaches may be experienced by those with GAD is unknown. However, it seems possible given characteristic strengths and weaknesses that emotional and interpersonal processing approaches may be experienced by those with GAD as more challenging, which may, in turn, affect therapeutic alliance.

Alliance and GAD

Alliance in GAD has received very little focused attention. Studies conducted to date have utilized mixed anxiety and depression samples with adults (Barber, Connolly, Crits-Cristoph, Gladis, & Siqueland, 2000; Raue, Castonguay, & Goldfried, 1993; Rector, Zuroff, & Segal, 1999; Safran & Wallner, 1991); a social anxiety sample (Hayes, Hope, VanDyke, & Heimberg, 2007); and for youth, mixed anxiety samples including GAD, specific phobia, separation anxiety, and social phobia (Creed & Kendall, 2005; 2005; Chu & Kendall, 2004; Kendall, 1994). Although useful in contributing to the broader base of knowledge regarding alliance and its relationship to outcome, these studies utilize too broad a sample to test specific predictions regarding GAD, alliance, and treatment interactions. However, as we have gained greater understanding of specificity of GAD as a disorder and its

underlying developmental features and patterns of strength and weakness, testing of alliance and treatment specific hypotheses becomes more possible.

Gelso and Carter's phase theory suggests a drop in alliance at midphase of treatment; this pattern has been found in several studies and not in others. One possible reason for this variation is specificity in interaction of client and treatment characteristics. Although variation in client characteristics exists within a disorder, a GAD sample nevertheless broadly represents a specific profile of strengths and weaknesses likely to interact with treatment approach. Specifically, individuals with general anxiety show a tendency to over-rely on cognition at the expense of emotional and interpersonal processing. Thus, in a treatment that takes an emotional and interpersonal approach to change, the drop in alliance at midphase predicted by Gelso and Carter is likely to occur because these patients are being pushed in a way that is likely to frustrate them, or as described in the dynamic literature, increase their resistances. In a CBT approach, however, the same pattern may not be seen, as the middle phase of treatment, though representing a working phase, plays to GAD clients' strengths, by asking them to cognitively and rationally examine their thoughts and by emphasizing a suppression of emotion rather than a working through process.

In sum, the proposed study has the potential to examine specificity of alliance in a methodologically unique manner, utilizing a homogeneous population to examine specific alliance by treatment interactions. The following specific predictions are made.

Hypotheses:

1. Both CBT and IEP will have high overall mean levels of alliance. This is a

   null hypothesis, based on empirical evidence of equivalence in efficacy of

   treatment modalities. Therefore, no simple main effect of treatment condition

   on alliance is expected. The null hypothesis is predicted with the goal of

   testing a commonality hypothesis based on data derived under rigorously

   controlled conditions in an additive design in which treatment condition was

   delivered concurrently to the same patient by the same therapist.

2. Treatment phase will have a small main effect on alliance. Specifically,

   alliance ratings will be marginally higher at the close of treatment (session 13)

   than at the start (session 3) or middle (session 8) of treatment.

3. A significant interaction of treatment condition by treatment phase is

   expected. Specifically, alliance ratings for the CBT portion of treatment will

   remain relatively stable. If change occurs, it will be reflected as a positive

   linear increase over time. In contrast, alliance ratings for the IEP portion will

   have a significant quadratic effect, such that alliance ratings will be lowest

   during the middle phase of treatment (session 8) in contrast to early (session

   3) and late (session 13) phases.

Method

Participants

Clients. Thirty-four participants were recruited as part of a sample obtained over a

five-year period to study the additive effects of an Interpersonal and Emotional

Processing (IEP) intervention on the treatment of Generalized Anxiety Disorder with

Cognitive Behavioral Therapy (Newman et al., 2008). Participants were recruited

within Centre County, PA, through media announcements and professional referral

from community practitioners, the Penn State Center for Counseling and

Psychological Services, and the Penn State Psychological Clinic. Participating clients

met DSM criteria for Generalized Anxiety Disorder (GAD) on the Anxiety Disorders

Interview Schedule – IV (ADIS-IV; Brown, DiNardo, & Barlow, 1994) at two time

points by two independent raters, as well as an Assessor Severity rating of 4

(moderate, 8 point scale). Exclusion criteria included a primary diagnosis of severe

mood disorder, substance abuse, psychosis, or organic brain syndrome. Prospective

participants were also ruled out on the basis of concurrent psychotherapy and medical

contributions to anxiety. Psychiatric medication was permissible provided

participants and their doctors agreed the client could be maintained on their current

dosage for the duration of the study.

Participants were randomly assigned to cognitive-behavioral therapy with

either, (a) interpersonal and emotional processing (CBT + IEP) or (b) supportive

listening (CBT + SL) components (see treatment section below). For purposes of the

proposed study, participants include those clients in the active treatment condition

who received both CBT and IEP ($N = 34$). Twenty-four participants were female

(71%) and 10 male (30%). Ethnic distribution included 31 White (91%), 2 Hispanic-American (6%), and 1 Asian-American (3%). This racial/ethnic variation reflects the demographic characteristics of the population from which participants were recruited. Approximately half of the participants were single (n =17, 50%) with 11 married (32%), 5 divorced (15%), and 1 in a relationship (3%). Participants' ages ranged from 21 to 63 with a mean age of 37 years (SD = 12.4). Duration of GAD symptoms ranged from 6 months to 58 years with a mean of 13.1 years (SD = 14.3).

Therapists. Therapists include three White, Ph.D. level clinical psychologists (two male, one female) with extensive psychotherapy treatment experience (two predominately psychodynamic and one cognitive-behavioral); each saw 11 or 12 clients. Therapists underwent intensive training both prior to and throughout the length of the study. Specifically, they received four months of weekly initial training including study of protocol manuals, didactic presentations, role-playing, and discussion of conceptual and technical elements of both treatment segments led by the study primary investigators. A two-day work-shop was held with Dr. Jeremy Safran, a recognized expert in the field of interpersonal therapy, specializing in working alliance and rupture detection and repair. Therapists received individual and group supervision on a weekly basis for the duration of the study, including regular adherence checks and feedback from expert observers based on quality rating scales.

Procedures.

Self-report measures assessing anxiety and worry were completed pretreatment by both patients and therapists. In addition, outcome measures were completed by both patients and therapists immediately post-treatment and at 6, 12, and 24 month follow-

up intervals. Process measures were completed by both at sessions 3, 8, and 13 immediately following each treatment segment.

Treatment. Treatment consisted of 14 2-hour psychotherapy sessions. The first 60-minute segment involved administration of Cognitive Behavioral Therapy (CBT; 50 minutes) followed by completion of study questionnaire measures by both therapist and patient (10 minutes). The second 60-minute segment involved administration of Interpersonal and Emotional Processing (IEP; 50 minute treatment with 10 minutes for questionnaire completion). Although participants were randomly assigned to receive either IEP or Supportive Listening, the proposed study includes only those participants assigned to the CBT/IEP condition.

   CBT. The CBT portion of treatment targets intrapersonal components of anxiety, addressing anxious experience through applied relaxation, self-control desensitization (SCD), and cognitive therapy. Behavioral components involve the presentation of the CBT model and rationale following which the client is trained in self-monitoring of early cues and anxiety triggers in environmental, somatic, affective, and cognitive domains. Clients are trained in progressive relaxation and the employment of coping self-statements. Responses are rehearsed in the context of anxiety provoking imagery using SCD hierarchies generated from information gained through pretreatment questionnaires, the ADIS, self-monitoring by the client, and in-session discussion. Cognitive therapy addresses the role of cognition in anxiety, training further self-monitoring focused on automatic thoughts and early signs of worry. Predictions, assumptions, and interpretations of events and cues experienced as threatening are examined and clients address these through logical analysis,

including examination of evidence, labeling of errors in logic, decatastrophization, generation of alternative thoughts and beliefs, and perspective shifts. Behavioral experiments are created to gather contradictory evidence and perspective shifts are employed during SCD rehearsals. The Socratic Method is emphasized to help address underlying themes related to core beliefs regarding acceptance, competence, responsibility, loss of control, and anxiety symptoms.

IEP. The Interpersonal and Emotional Processing (IEP) portion of treatment targets interpersonal difficulties hypothesized to be involved in the generation and maintenance of anxiety and worry. IEP is adapted from work by Safran and Segal (1990) that integrates psychodynamic, interpersonal, and emotional processing elements and applies them to a CBT framework. IEP stipulates that early attachment history and subsequent interpersonal relationships result in interpersonal schemata that underlie current interpersonal behaviors. These behaviors result in consequences that serve to reinforce the schemata. For GAD clients, these schemata involve a sense of the world as unsafe and the self as unable to cope, leading to a constant perception of threat, fueling anxiety and worry. The IEP portion of therapy aims to address these schemata in four ways, through examination of (1) current problems in interpersonal relationships; (2) interpersonal history, particularly attachment and trauma experiences; (3) relationship with the therapist, including alliance ruptures; (4) processing of present moment emotion as related to the interpersonal context. In this way IEP aims to help clients identify the needs and fears motivating their interpersonal behavior and examine underlying beliefs, perceptions, and emotional experiences that contribute to their maladaptive patterns with an eye to developing

newer, more adaptive patterns. These goals are achieved in IEP by implementation of

techniques deriving from several principles, including: emphasis on

phenomenological experience; accessing and modifying cognitive processes in an

emotionally immediate way; therapist's use of their own emotional experience to

identify interpersonal markers; use of the therapeutic relationship to explore

cognitive/affective processes and challenge interpersonal schemata; therapists

assuming responsibility for their role in the interactions; facilitation of the processing

of interpersonal schema-disconfirming evidence both in-session and via experiments

between sessions; promotion of generalization via exploration of between-session

events and provision of homework experiments; detection of alliance ruptures and

provision of corrective experiences in their resolution; deepening of client's affective

experiencing in relation to past, current, and in-session interpersonal relationships;

and the use of behavioral skill training methods (e.g., assertion, problem-solving;

communication training; role-playing) to provide more effective interpersonal

behaviors to satisfy needs.

Measures.

   Working Alliance Inventory —Short Form (WAI-S). The Working Alliance

Inventory (Horvath & Greenberg, 1989) is the most widely used of the self-report

measures tapping client, therapist, and observer perspectives of the client-therapist

alliance. The measure has been utilized in over 100 published empirical studies and

several meta-analyses (Busseri & Tyler, 2003). The WAI was developed by Horvath

and Greenberg (1989) to assess three dimensions of the therapeutic relationship as

conceptualized by Bordin – client and therapist (1) agreement on goals (goals), (2)

agreement on how to achieve these goals (task), and (3) affective relationship (bond). The original 36-item questionnaire is rated using a 7-point likert scale, with items mapping on to a global alliance dimension as well as the three component subscales of goal, task, and bond. Confirmatory factor analysis by Tracey and Kokotovic (1989) found validity for this bi-level model. These authors also created a twelve item short version of the WAI (WAI-S) by taking the four items that loaded most strongly on each of the three factors. This 12 item brief measure retained the same structure and subscales as the longer version, and both the long and short forms of the WAI have been widely used with adult populations. Internal consistency is strong with alphas of .83-.98. Content validity has also been supported through expert rater agreement on the items' reflection of the three main constructs, as well as data analytic methods. The interchangeability of the WAI and the WAI-S was evaluated in a direct comparison study with equally good test-retest reliability, concurrent validity, and predictive validity for therapeutic improvement using both measures (Busseri & Tyler, 2003). The authors conclude that the WAI-S may actually be preferable to the WAI, given its greater ease of administration and equally strong psychometric properties. For purposes of the proposed study, Working Alliance will be defined in two ways: as the (1) client-rated and (2) therapist-rated total mean session score on the WAI-S. These scores are calculated by averaging the ratings on the 12 items of the scale for client and for therapist to produce two separate total mean scores at each session.

Results

Preliminary Analyses:

Total mean scores for alliance at each session were created by summing the items from the Working Alliance Inventory – Short Form (WAI-S) and dividing by the total number of items on the scale (twelve items). Mean alliance subscale ratings of Bond, Goal, and Task were created for each session by summing the relevant items for each subscale of the WAI-S and dividing by the total number of subscale items (four).

Pearson zero-order correlations for client and therapist ratings were calculated at each time point to confirm the unitary structure of the WAI-S via assessment of the relations between the measure's subscales. As expected, given the conceptual strength of the WAI-S as constituting a single core factor of working alliance, correlations between the WAI-S subscales of Goal, Task, and Bond were high (mean $r = .75$; range .50 – .95). Inter-scale correlations are provided in Tables 1-4.

Table 1: Correlations between Subscales of the Working Alliance Inventory (WAI-S) – Client Ratings of CBT treatment for Sessions 3, 8, and 13

Session 3	Bond	Goal
Bond		
Goal	.50	
Task	.63	.72

Session 8	Bond	Goal
Bond		
Goal	.50	
Task	.55	.68

Session 13	Bond	Goal
Bond		
Goal	.68	
Task	.60	.60

Table 2: Correlations between Subscales of the Working Alliance Inventory (WAI-S)

– Client Ratings of IEP treatment for Sessions 3, 8, and 13

Session 3	Bond	Goal
Bond		
Goal	.57	
Task	.77	.74

Session 8	Bond	Goal
Bond		
Goal	.59	
Task	.57	.84

Session 13	Bond	Goal
Bond		
Goal	.68	
Task	.65	.62

Table 3: Correlations between Subscales of the Working Alliance Inventory (WAI-S)

– Therapist Ratings of CBT treatment for Sessions 3, 8, and 13

Session 3	Bond	Goal
Bond		
Goal	.88	
Task	.83	.86

Session 8	Bond	Goal
Bond		
Goal	.84	
Task	.84	.92

Session 13	Bond	Goal
Bond		
Goal	.87	
Task	.91	.95

Table 4: Correlations between Subscales of the Working Alliance Inventory (WAI-S)

– Therapist Ratings of IEP treatment for Sessions 3, 8, and 13

Session 3	Bond	Goal
Bond		
Goal	.76	
Task	.83	.83

Session 8	Bond	Goal
Bond		
Goal	.84	
Task	.90	.89

Session 13	Bond	Goal
Bond		
Goal	.86	
Task	.89	.88

Notably, therapist ratings of WAI-S subscales were highly correlated (mean r = .87; range .76 – .95), well above the a priori cut-off criterion of r > .65, indicating that the therapist-rated measure functioned as a unitary construct within this sample. Interrelations among WAI-S subscales for the client ratings were more variable (mean r = .64; range .50 - .83). Therefore, for therapist-rated alliance, analyses used the therapist-rated mean WAI-S session score (i.e., the total score for each session calculated by averaging the total items on the WAI-S for that session). For client-rated alliance, however, analyses were conducted in two ways. The first set of analyses used the client-rated mean WAI-S session score, and subsequently each individual WAI-S subscale score (Bond, Goal, Task) was used.

Missing data for three participants were imputed using methods outlined by Allison (2001). Descriptive statistics were conducted for the full sample to ensure that the data were free of entry errors and were normally distributed. Descriptive statistics for the sample are reported in Table 5. Z-scores were calculated for skew and kurtosis by dividing each statistic by its standard error; reported in Table 5. Due to overall high alliance ratings, data were in general moderately negatively skewed.

Table 5: Descriptive Statistics for the WAI-S and Client-Rated Subscales

Scale	Range	Mean	Standard Deviation	Z-Skew	Z-Kurtosis
Client Total WAI-S CBT, Session 3	4.75 – 7.00	5.92	0.61	0.27	-0.68
Client Total WAI-S CBT, Session 8	4.83 – 7.00	5.14	0.67	0.21	0.00
Client Total WAI-S CBT, Session 13	4.61 – 7.00	6.04	0.57	-1.33	0.82
Client Total WAI-S IEP, Session 3	3.42 – 7.00	5.84	0.76	-1.96	2.63
Client Total WAI-S IEP, Session 8	4.33 – 7.00	6.00	0.64	-1.69	0.61
Client Total WAI-S IEP, Session 13	4.42 – 7.00	6.06	0.60	-1.27	0.99
Therapist Total WAI-S CBT, Session 3	3.92 – 6.17	5.14	0.67	-0.85	-1.29
Therapist Total WAI-S CBT, Session 8	4.08 – 6.75	5.33	0.67	-0.08	-0.95
Therapist Total WAI-S CBT, Session 13	4.17 – 6.75	5.61	0.79	-1.51	-0.94
Therapist Total WAI-S IEP, Session 3	3.67 – 5.92	4.98	0.64	-0.72	-1.32
Therapist Total WAI-S IEP, Session 8	3.67 – 6.50	5.08	0.69	-0.06	-0.56
Therapist Total WAI-S IEP, Session 13	3.50 – 7.00	5.47	0.88	-0.79	-1.00
Client Bond CBT, Session 3	3.75 – 7.00	5.51	0.89	0.39	-0.99
Client Goal CBT, Session 3	4.50 – 7.00	6.10	0.66	-1.43	-0.18
Client Task CBT, Session 3	5.00 – 7.00	6.15	0.57	-0.42	-1.07
Client Bond IEP, Session 3	2.25 – 7.00	5.56	1.07	-0.36	-0.81
Client Goal IEP, Session 3	3.50 – 7.00	5.96	0.82	-0.64	-0.86
Client Task IEP, Session 3	4.50 – 7.00	6.01	0.67	0.18	-0.57
Client Bond CBT, Session 8	3.78 – 7.00	5.77	0.90	-2.19	1.35
Client Goal CBT, Session 8	5.24 – 7.00	6.23	0.62	-1.69	0.24
Client Task CBT, Session 8	5.25 – 7.00	6.15	0.43	0.39	-0.52
Client Bond IEP, Session 8	3.78 – 7.00	5.85	0.82	-2.03	1.95
Client Goal IEP, Session 8	5.24 – 7.00	6.08	0.65	-2.48	1.36
Client Task IEP, Session 8	5.25 – 7.00	6.07	0.70	-0.83	-0.04
Client Bond CBT, Session 13	3.18 – 7.00	5.82	0.90	-1.51	0.15
Client Goal CBT, Session 13	4.50 – 7.00	6.12	0.62	-1.44	0.49
Client Task CBT, Session 13	5.25 – 7.00	6.19	0.43	-2.74	3.12
Client Bond IEP, Session 13	3.20 – 7.00	5.86	0.88	-3.01	2.63
Client Goal IEP, Session 13	5.00 – 7.00	6.15	0.60	-0.13	-1.07
Client Task IEP, Session 13	4.50 – 7.00	6.16	0.57	-1.40	1.13

Correction of data that violates normality using square root, log, or inverse transformations based on the degree of skew or kurtosis is often recommended (Tabachnick & Fidell, 2007). However, the field lacks uniform agreement regarding this process (Shackman, 2008). Osborne (2002) suggests that data be carefully examined for violations of normality, but that data transformations be used cautiously and with clear intent, as transformations may change rating scales from interval or ratio to ordinal and may create curvilinear relationships, impairing ability to substantively interpret findings. In order to take into account the moderate skew of the current data as well as ability to meaningfully interpret findings, several steps were taken. (1) Recent publications examining change of alliance across time were reviewed for handling of non-normal data; although range and mean of alliance ratings suggest that alliance tends to be high overall and thus data are negatively skewed, evidence of transformation to normalize data was not widely found in the literature. (2) In order to be conservative in considering the current skewed data, however, transformations were performed in an attempt to improve normality of the distribution. The ability to make meaningful comparisons across treatment phase, treatment type, and rater was considered essential to testing the primary hypotheses, thus, transformations were performed on all WAI-S ratings, rather than only those with a skew or kurtosis outside the range of -1 to +1. Log transformations were selected as being appropriate for moderate skew and as the most commonly used method of transformation (Tabachnick & Fidell, 2007). Descriptive statistics following this transformation are provided in Table 6.

Table 6: WAI-S and Client-Rated Subscale Descriptives After log-10 Transformation

Scale	Range	Mean	Standard Deviation	Z-Skew	Z-Kurtosis
Client Total WAI-S CBT, Session 3	0.68 – 0.85	0.77	0.04	-0.27	-0.62
Client Total WAI-S CBT, Session 8	0.68 – 0.85	0.78	0.04	-0.42	0.47
Client Total WAI-S CBT, Session 13	0.66 – 0.85	0.78	0.04	-2.13	1.54
Client Total WAI-S IEP, Session 3	0.53 – 0.85	0.76	0.06	-3.85	6.22
Client Total WAI-S IEP, Session 8	0.64 – 0.85	0.78	0.05	-2.48	1.50
Client Total WAI-S IEP, Session 13	0.65 – 0.85	0.78	0.04	-2.23	2.13
Therapist Total WAI-S CBT, Session 3	0.59 – 0.79	0.71	0.06	-1.29	-1.13
Therapist Total WAI-S CBT, Session 8	0.61 – 0.83	0.72	0.06	-0.65	-0.90
Therapist Total WAI-S CBT, Session 13	0.62 – 0.83	0.74	0.06	-1.99	-0.67
Therapist Total WAI-S IEP, Session 3	0.56 – 0.77	0.69	0.06	-1.17	-1.07
Therapist Total WAI-S IEP, Session 8	0.56 – 0.81	0.70	0.06	-0.84	-0.33
Therapist Total WAI-S IEP, Session 13	0.54 – 0.85	0.73	0.07	-1.51	-0.43
Client Bond CBT, Session 3	0.57 – 0.85	0.74	0.07	-0.37	-0.74
Client Goal CBT, Session 3	0.65 – 0.85	0.78	0.05	-2.08	0.47
Client Task CBT, Session 3	0.70 – 0.85	0.79	0.04	-0.82	-0.86
Client Bond IEP, Session 3	0.35 – 0.85	0.74	0.10	-4.79	7.83
Client Goal IEP, Session 3	0.54 – 0.85	0.77	0.07	-3.70	3.78
Client Task IEP, Session 3	0.65 – 0.85	0.78	0.05	-1.61	0.63
Client Bond CBT, Session 8	0.58 – 0.85	0.76	0.06	-1.39	0.79
Client Goal CBT, Session 8	0.72 – 0.85	0.79	0.04	-1.02	-0.71
Client Task CBT, Session 8	0.72 – 0.85	0.79	0.03	-0.25	-0.43
Client Bond IEP, Session 8	0.56 – 0.85	0.76	0.07	-2.53	1.57
Client Goal IEP, Session 8	0.63 – 0.85	0.78	0.05	-2.33	1.81
Client Task IEP, Session 8	0.57 – 0.85	0.78	0.05	-4.29	6.57
Client Bond CBT, Session 13	0.50 – 0.85	0.76	0.07	-3.72	4.14
Client Goal CBT, Session 13	0.65 – 0.85	0.78	0.05	-2.36	1.00
Client Task CBT, Session 13	0.72 – 0.85	0.79	0.03	-0.02	-0.36
Client Bond IEP, Session 13	0.51 – 0.85	0.76	0.07	-4.54	5.32
Client Goal IEP, Session 13	0.70 – 0.85	0.79	0.04	-0.57	-0.81
Client Task IEP, Session 13	0.65 – 0.85	0.79	0.04	-2.33	2.54

Visual inspection of the resulting distributions indicated that for the data set as a whole, skew and kurtosis were not improved by the transformation, but were, in fact, made worse. Because untransformed data (a) conforms to the standard among most published research involving alliance and (b) allows more meaningful comparison of means in post-hoc contrast analyses due to the standard nature of the alliance as constituting a seven-point scale, the untransformed data were used in all analyses. Primary research questions were tested using ANOVA conducted via General Linear Model, an approach that tolerates non-normal distributions.

Demographic variables (i.e., age, gender, ethnicity, marital status, and educational level) were not expected to correlate significantly with alliance (Clarkin & Levy, 2004; Constantino et al., 2002). Nevertheless, as standard practice they were considered as potential covariates. Pearson zero-order correlations indicated that age was unrelated to alliance in the current sample with one exception. There was a moderate positive correlation of age with therapist-rated alliance in IEP at Session 13, $r = .35$, $p = .04$. ANOVA indicated no association between WAI-S ratings and ethnicity, marital status, education, or gender with a single exception; education was significantly associated with therapist-rated alliance at Session 13 in the CBT condition, with high school status predicting poorer alliance relative to advanced degrees. F-ratios and correlations are presented in Tables 7 through 11 for demographic variables.

Table 7: Analysis of Variance for Gender

Source	df	F	η	p
Client, CBT Session 3	1, 32	0.39	.01	.54
Client, CBT Session 8	1, 32	0.08	.00	.78
Client, CBT Session 13	1, 32	0.12	.00	.73
Client, IEP Session 3	1, 32	0.69	.02	.41
Client, IEP Session 8	1, 32	0.06	.00	.80
Client, IEP Session 13	1, 32	0.20	.01	.65
Therapist, CBT Session 3	1, 32	0.06	.00	.82
Therapist, CBT Session 8	1, 32	0.81	.03	.37
Therapist, CBT Session 13	1, 32	0.18	.01	.67
Therapist, IEP Session 3	1, 32	0.23	.01	.63
Therapist, IEP Session 8	1, 32	0.00	.00	.96
Therapist, IEP Session 13	1, 32	0.27	.01	.61

Table 8: Analysis of Variance for Ethnicity

Source	df	F	η	p
Client, CBT Session 3	2, 31	0.41	.03	.67
Client, CBT Session 8	2, 31	2.51	.12	.14
Client, CBT Session 13	2, 31	1.53	.09	.23
Client, IEP Session 3	2, 31	0.52	.03	.60
Client, IEP Session 8	2, 31	1.31	.08	.28
Client, IEP Session 13	2, 31	1.58	.02	.22
Therapist, CBT Session 3	2, 31	0.07	.00	.93
Therapist, CBT Session 8	2, 31	0.51	.03	.61
Therapist, CBT Session 13	2, 31	0.34	.02	.71
Therapist, IEP Session 3	2, 31	0.40	.03	.67
Therapist, IEP Session 8	2, 31	0.18	.01	.84
Therapist, IEP Session 13	2, 31	0.21	.01	.81

Table 9: Analysis of Variance for Marital Status

Source	df	F	η	p
Client, CBT Session 3	3, 30	0.56	.05	.65
Client, CBT Session 8	3, 30	0.49	.05	.70
Client, CBT Session 13	3, 30	1.07	.10	.38
Client, IEP Session 3	3, 30	0.60	.06	.62
Client, IEP Session 8	3, 30	0.64	.06	.60
Client, IEP Session 13	3, 30	0.48	.05	.70
Therapist, CBT Session 3	3, 30	0.95	.09	.43
Therapist, CBT Session 8	3, 30	2.72	.21	.06
Therapist, CBT Session 13	3, 30	1.37	.12	.27
Therapist, IEP Session 3	3, 30	0.62	.06	.61
Therapist, IEP Session 8	3, 30	2.00	.17	.14
Therapist, IEP Session 13	3, 30	2.37	.19	.09

Table 10: Analysis of Variance for Education

Source	df	F	η	p
Client, CBT Session 3	6, 27	0.95	.17	.48
Client, CBT Session 8	6, 27	0.66	.13	.68
Client, CBT Session 13	6, 27	0.55	.11	.76
Client, IEP Session 3	6, 27	0.32	.07	.92
Client, IEP Session 8	6, 27	0.66	.13	.68
Client, IEP Session 13	6, 27	1.02	.18	.43
Therapist, CBT Session 3	6, 27	1.26	.22	.31
Therapist, CBT Session 8	6, 27	1.11	.20	.38
Therapist, CBT Session 13	6, 27	2.97	.40	.02
Therapist, IEP Session 3	6, 27	0.83	.16	.56
Therapist, IEP Session 8	6, 27	0.94	.17	.48
Therapist, IEP Session 13	6, 27	1.57	.26	.19

Table 11: Correlations for Age

Source	r	p
Client, CBT Session 3	-.08	.66
Client, CBT Session 8	-.20	.26
Client, CBT Session 13	-.09	.61
Client, IEP Session 3	-.22	.21
Client, IEP Session 8	-.27	.18
Client, IEP Session 13	-.14	.44
Therapist, CBT Session 3	.01	.97
Therapist, CBT Session 8	.21	.23
Therapist, CBT Session 13	.26	.14
Therapist, IEP Session 3	-.06	.73
Therapist, IEP Session 8	.04	.83
Therapist, IEP Session 13	.35	.04

Thus, of the demographic variables examined, age and education could be considered as possible meaningful covariates in this sample. However, due to the fact that each was significantly associated with alliance for only one rater, in one treatment, at one point in time, it was deemed unlikely that this represented a meaningful association and more likely that it was a result of Type I error resulting from the examination of 60 pairings across ANOVA and Pearson correlation (57% probability of a significant finding by chance). In addition, the inclusion of covariates would be likely to limit ability to detect significant alliance patterns across treatment type and phase due to a loss of degrees of freedom resulting from the need to utilize analysis of covariance (ANCOVA). Given the within-subjects design, the need to statistically control potential effects of personhood characteristics was not deemed essential, and the ability to detect effects was prioritized over the consideration of potential covariates. Based on these conceptual reasons, covariates were not included in the following analyses.

Research Questions

Within Subjects Repeated Measures Analysis of Variance Via General Linear Model:

The effect of treatment type on the level of alliance over time was assessed in a 2 (CBT and IEP) X 3 (early, middle, and late treatment phase) Within Subjects Repeated Measures design using SPSS 11.5. Early, Middle, and Late treatment phases were operationalized as Sessions 3, 8, and 13. Predictor 1 was defined as treatment type, with the two levels being CBT and IEP. Predictor 2 was defined as treatment phase, with three levels, Sessions 3, 8, and 13. Therapist-rated and client-rated mean session alliances were examined as the criterion variables of interest in two separate analyses. In addition, due to the possible multidimensionality of the WAI-S for clients, a third set of analyses was conducted to examine each of the three WAI-S subscales (Bond, Task, Goal). Specifically, the prediction that both CBT and IEP would have equally high mean alliances (commonality hypothesis) was tested by examining the main effect of treatment type for client and therapist-rated alliance in this ANOVA via GLM. The prediction that Session 13 alliance would be significantly higher than Session 3 or Session 8 alliance was tested by examining the main effect of treatment phase. The prediction that CBT would remain relatively stable with a small linear increase while IEP would show a quadratic effect was tested by examining the interaction term for this ANOVA as well as testing the Trends through GLM.

Client-Rated Alliance:

Mauchley's Test of Sphericity was conducted for the main effects of Treatment Phase and Treatment Type, and for the interaction of Treatment Phase by Treatment Type for Client-Rated Alliance. All tests were nonsignificant, indicating that sphericity could be assumed. As predicted, the main effect of treatment type was not significant, $F(1, 33) = 0.92$, $p = .35$, partial $\eta^2 = .03$, supporting the common factors hypothesis. However, contrary to prediction, the main effect of treatment phase was also not significant, $F(2, 66) = 2.67$, $p = .08$, partial $\eta^2 = .08$. There was a linear trend for treatment phase in the predicted direction that approached but did not reach significance, $F(1, 33) = 3.86$, $p = .06$, partial $\eta^2 = .11$. The interaction between treatment type and treatment phase was not significant, $F(2, 66) = 0.93$, $p = 0.47$, partial $\eta^2 = .02$, failing to support the hypothesis of differential treatment by phase effects.

Therapist-Rated Alliance:

Mauchley's Test of Sphericity was conducted for the effects of Treatment Phase, Treatment Type, and Treatment Phase by Treatment Type Interaction for Therapist-Rated Alliance. The within subjects effect for treatment phase was significant, $p < .01$. The Huynh-Feldt correction was therefore made for tests of treatment phase.

There was a statistically significant main effect of treatment type, $F(1, 33) = 12.02$, $p = .001$, partial $\eta^2 = .27$, such that CBT showed an overall higher mean therapist-rated alliance ($M = 5.36$) than IEP ($M = 5.18$). This was in opposition to the

predicted equivalence of alliance across treatment which was hypothesized based on common factors theory. Supporting the hypothesized change in alliance over time, there was a statistically significant main effect of treatment phase, F (1.65, 54.48) = 12.52, $p < .001$, partial $\eta^2 = .28$, such that Session 13 alliance ($M = 5.54$) was higher than Session 3 alliance ($M = 5.06$) and Session 8 alliance ($M = 5.21$). There was no statistically significant difference between therapist-rated alliance at Sessions 3 and 8, as predicted. The interaction between treatment type and treatment phase was not significant, F (2, 66) = 0.61, $p = 0.58$, partial $\eta^2 = .02$, again failing to support the hypothesized relationship between treatment type and patterns of alliance over time. Visual inspection of the interaction suggests that IEP and CBT alliance ratings diverged at mid-treatment (Session 8) as predicted, however. A graph of the treatment type by treatment phase interaction is depicted in Figure 1.Tests of within subjects polynomial contrasts showed a significant positive linear trend for treatment phase, F (1, 33) = 16.64, $p < .001$, partial $\eta^2 = .34$. This was predicted for CBT but was found to be the case across both treatments. The quadratic trend, predicted for the IEP condition, was nonsignificant for both treatment types, F (1, 33) = 2.12, $p = 0.16$, $p = 0.16$, partial $\eta^2 = .06$.

Figure 1: Therapist-Rated Treatment Type by Treatment Phase Interaction
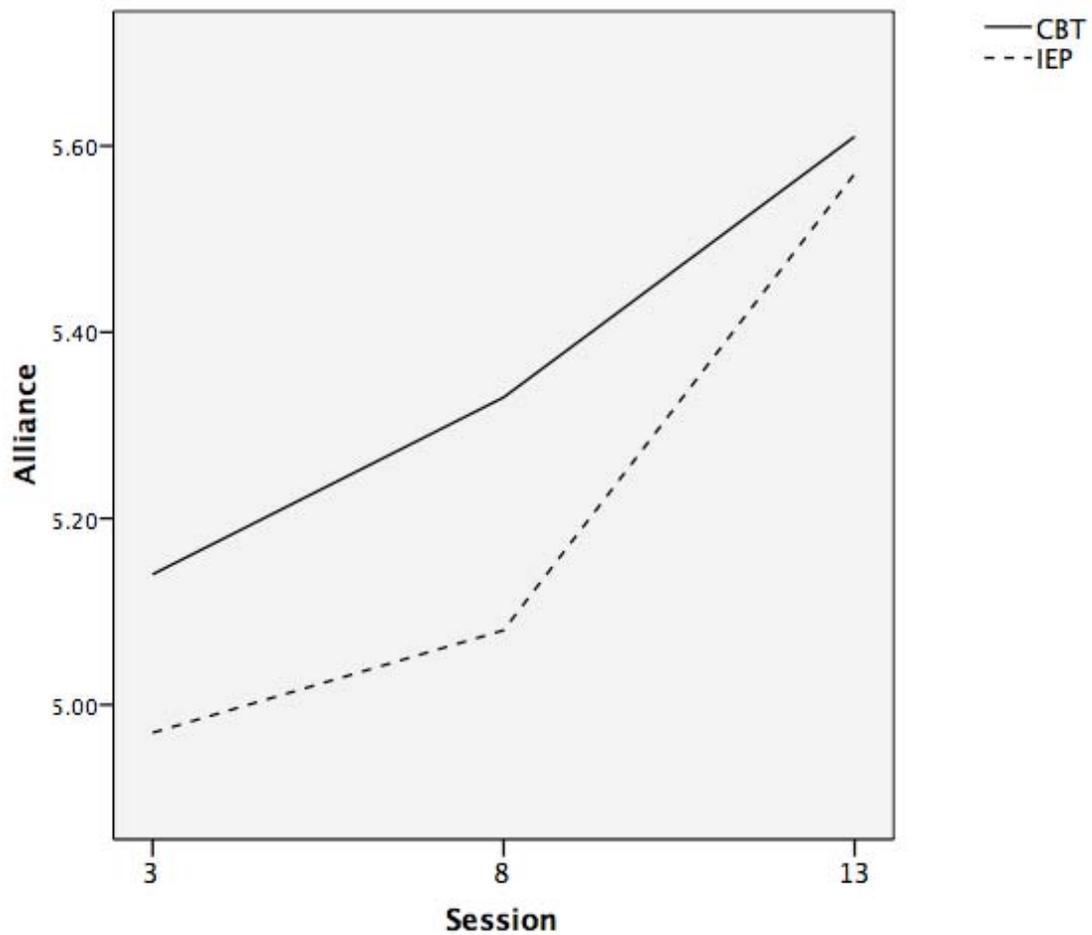
Client-Rated Alliance Subscales:

Due to the non-unitary nature of the WAI-S for client-report within this sample, within-subjects repeated measures analyses of variance via GLM were conducted with each of the WAI-S subscales used as criterion variables. There were no significant main effects of treatment type or treatment phase for Goal or Task subscales, nor was there an interaction effect. There was, however, a trend toward a main effect of treatment type for Goal, $F(1,33) = 3.03$, $p = .09$, with CBT showing a marginally higher mean alliance than IEP ($M = 6.15$ vs. $M = 6.06$). There was a

significant main effect of treatment phase for Bond, F (2, 66) = 4.78, p = .01, partial

η^2 = .13, with a significant positive linear trend, F (1,33) = 7.90, p = .01, partial η^2 =

.19. Polynomial contrasts indicated that sessions 3 and 13 were significantly different

(M = 5.54 vs. M = 5.84, p = .03), though neither differed significantly from Session 8

(M = 5.81). Because alliance was expected to be a unitary construct, no subscale-

specific predictions were made a priori; findings were generally expected to mirror

findings for the global alliance scale. The finding of a phase effect for the bond

subscale is in keeping with the global hypotheses, whereas goal and task subscales

failed to show the predicted pattern. The absence of treatment effects supports the

predicted hypotheses, with an unpredicted trend toward a treatment effect for the

Goal subscale. Predictions of treatment condition by treatment phase interaction were

unsupported.

Discussion

This study explored alliance as a common factor by examining patterns of alliance change across time in two theoretically different treatment approaches to generalized anxiety disorder (GAD) delivered concurrently to the same patients by the same therapists in an additive research design. Specifically, the goal of the study was to test the prediction that both cognitive-behavioral therapy (CBT) and interpersonal and emotional processing (IEP) approaches to treating GAD would show high alliance (common factors hypothesis), but the pattern of alliance across treatment phases would differ for the two approaches. CBT was predicted to show either a stable alliance or small linear increase, whereas a quadratic pattern was predicted for IEP, with high initial alliance dropping in the middle phase of treatment and then returning to previously high levels late in treatment. Results largely failed to support these hypotheses, instead showing overall higher therapist-rated alliance for CBT than IEP and a global linear increase in alliance across time for both approaches with no treatment type interaction. No significant effects of treatment type, phase, or type by phase interaction were found for client report, providing some support to the common factors hypothesis but failing to support differential alliance patterns. Client-reported bond, however, showed a global linear increase over time in both approaches.

Historically, client and therapist ratings of alliance have been weakly correlated (Constantino et al., 2002), suggesting that treatment provider and patient have somewhat disparate views of the collaborative and affective relationship. Thus, although rater-specific predictions were not made, it is not surprising that in the

current study client and therapist ratings showed different patterns of alliance across treatment type and phase.

From a client perspective, the common factors hypothesis was supported: there were no differences in level or pattern of the alliance between treatments. This is in keeping with findings to date from meta-analytic and comparative outcome studies, which have found no differences in overall level of alliance among treatment approaches (Constantino et al., 2002; Horvath & Symonds, 1991; Krupnick et al., 1996; Martin et al., 2000). However, to this author's knowledge this was the first study to examine alliance in an additive design which is likely to offer a more valid test of the common factors hypothesis than traditional comparative outcome studies by controlling for therapist effects. Thus, findings in line with the null or common factors hypothesis under this condition provide further support for the common factors theory. Although specific causal mechanisms cannot be identified in the current design, lack of differential patterns across the two treatment approaches further supports the theory that alliance may operate in a universal way rather than in a treatment-specific manner.

In contrast to the null findings for working alliance as a global variable, clients reported a general linear increase in one subscale of the alliance, affective Bond, suggesting a common experience of increased attachment to and liking for the therapist over time in both treatments. Clients' collaborative agreement with the treatment goals (Goal subscale of the WAI) and the tasks of therapy (Task), however, appear to be strong early in treatment and did not vary over time. These findings make intuitive sense from an interpersonal perspective. In as much as therapeutic

bond reflects an affective relationship like any other, a positive relationship might be expected to begin with above average liking and gradually strengthen across time as the relationship grows. Although the high inter-correlations of the three subscales of the Working Alliance Inventory (Bond, Goal, Task) have led to a common practice of collapsing across the three scales to form a single mean alliance rating as was done in the current study (Busseri & Tyler, 2003; Horvath & Greenberg, 1989; Horvath et al., 1993), the measure is still thought to effectively capture three separate subcomponents with some findings of differential prediction to outcome (Horvath & Greenberg, 1989). The authors of the original WAI hypothesize that the subcomponents may be differentially important across treatment phases, with a strong bond being most important later in treatment when the work of the therapy is more challenging (Horvath & Greenberg, 1989). Although importance vis-à-vis outcome was not evaluated in the current study, the observed pattern of increasing client-rated bond over time adds further reason to suspect that this may be the case and warrants further investigation.

In contrast to client-ratings, therapist-rated alliance showed greater variability across treatment type and phase. Therapists rated alliance as higher in CBT than IEP, a finding of specificity that contradicts the common factors hypothesis. With mean ratings for both treatments above 5 (on a 1-7 Likert scale), it is important to temper interpretation of this finding, as both treatments showed strong overall alliance. Nevertheless, the difference was significant, and the effect size was large, explaining 27% of the variance in alliance scores. Several explanations for this therapist-rated treatment difference are possible. Researcher allegiance effects have been well

demonstrated, illustrating that treatments preferred by researchers show better outcome than less preferred treatments (Lambert, 2005; Luborsky et al, 1999). Similarly, it has been suggested that strong theoretical knowledge about treatment may alter how therapists rate alliance across treatments (Horvath, 1994). As such, it is possible that higher alliance ratings for the CBT portion may reflect greater therapist comfort with or allegiance to CBT as opposed to IEP. Given IEP is more recently developed treatment (Newman et al., 2008) and CBT reflects an historical gold standard for treatment of GAD (Borkovec & Ruscio, 2001) this interpretation deserves consideration. However, two of the three therapists were long-practicing psychodynamic clinicians, making CBT allegiance a less plausible explanation. A second possibility is that therapists may have experienced themselves as working harder or encountering greater client resistance in IEP approaches. This is in keeping with findings that GAD clients have deficits in emotional processing (Mennin et al., 2005) and interpersonal functioning (Erickson & Newman, 2007; Newman et al., 2008) and thus may experience greater difficulty with the IEP approach that focuses on these areas of weakness. This is also consistent with case examples and therapist report that patients found the IEP component more challenging (T. D. Borkovec, personal communication, 2004). However, these reports are incidental and were not systematically evaluated; whether they reflect actual in-treatment therapist experience of clients or a priori expectations that GAD clients would have difficulty with the IEP approach is also unknown. Future research examining pretreatment expectations and client and therapist beliefs could help to clarify this question.

In addition to between treatment differences in overall alliance, therapist ratings showed a global linear increase in alliance over time. This is in line with findings from four prior studies of the alliance pattern (Kivlighan & Shaughnessy, 1995; Kivlighan & Shaughnessy, 2000; Patton et al., 1997; Stiles et al., 2004), all of which found a pattern of linear improvement for a subset of clients and two of which found this pattern for the sample as a whole. In addition to replicating a pattern found in prior studies, this finding also parallels, at least to some extent, client findings in the current study. Although clients evidenced no global working alliance change across time, client-rated Bond showed the same linear increase as therapist-rated working alliance. Because therapist subscale correlations were very high ($r \geq 0.78$) whereas client subscales were more variable ($r \geq .50$), the therapist effect may reflect or include the underlying affective attachment increase that was more specifically captured for clients.

Contrary to predictions, no quadratic pattern was found for either treatment. Although this result is consistent with findings from Kivlighan and Shaughnessy (1995) and Stiles and colleagues (2004), it contradicts two studies that reported a quadratic pattern for counseling center clients (Kivlighan & Shaughnessy, 2000; Patton et al., 1997). One possible explanation for the failure to detect a quadratic pattern in the current study is that quadratic changes in alliance are more effectively captured in session by session or moment by moment measurements of alliance (Safran & Muran, 2000; Stiles et al., 2004) rather than by examination of phase patterns. Several research groups have described alliance as constituting a continual pattern of "tear and repair" occurring across treatment and not just at midphase.

Preliminary evidence suggests that in at least one study primary analyses failed to find a quadratic phase pattern, but post-hoc examinations showed multiple brief v-shaped deflections in alliance occurring across treatment (Stiles et al., 2004). Another possible explanation is that quadratic patterns represent client-specific effects that match patterns for some clients and not others. Preliminary support for this hypothesis has also been found (Kivlighan & Shaughnessy, 1995; Patton et al., 1997). Because the present study examined group-level patterns rather than individual patterns, such a finding could not be detected; these issues are discussed in greater detail in the future directions section. Finally, it is possible that failure to detect quadratic effects reflects an issue of power. Although power to detect main effects of treatment type and phase in the current study was quite good (e.g., 92 to 100% power for therapist-rated main effects), the power to detect an interaction was significantly poorer (15% for therapist ratings). However, examination of means suggests only one instance (CBT, client-rated Goal subscale) in which a larger sample might have permitted detection of a quadratic effect, and this was a small difference in the opposite direction predicted, with an *increase* in alliance at midphase. Clearly in the current sample the linear pattern was a stronger match for the findings.

Two marginal effects also bear note. There were two client-rated trends, with CBT showing a slightly higher mean Goal rating than IEP ($p = .09$) and global alliance ratings across both treatments showing an increase over time ($p = .08$); however, due to nonsignificance, contrasts could not be examined to better understand this pattern. Nevertheless, the findings suggest that with a larger sample small client-rated effects might, in fact, be found.

Limitations

The current study is limited by a small sample size. With a sample size of 34, generalizability of findings and ability to detect small effects are a concern. However, although replication and extension with a larger sample would be beneficial, several factors suggest that the present sample size was adequate to draw initial conclusions. First, among psychotherapy studies, a sample size of 34 might be considered typical to above average. For instance, among the four reviewed studies specifically examining alliance patterns over time, two had a smaller sample size ($N =$ 16; Patton et al., 1997; $N = 21$; Kivlighan & Shaughnessy, 1995) and two larger ($N =$ 38; $N = 41$; Kivlighan & Shaughnessy, 2000; $N = 79$; Stiles et al., 2004). Additionally, the repeated measures nature of the present design increased power to detect effects. Calculations of power indicate that power to detect effects in this study ranged from 15% to 100%. Thus, large effects were detectable, whereas small effects, such as interactions that might have explained less than two percent of the variance, were not significant. A larger sample would certainly be beneficial, though the current sample size appears to have been adequate to contribute preliminary findings.

A second important limitation of this study concerns external validity. For purposes of internal validity and control, CBT and IEP portions of treatment were delivered consecutively, with rigorous control and adherence checks to ensure that core elements of each treatment (e.g., examination of cognitions for CBT and processing of emotional experience for IEP) were delivered only during the ascribed

treatment portion without any cross-over. This formal divide between different intervention methods is less likely to occur in naturalistic treatment, in which there is often a more flexible blending or seamless integration of various approaches. Thus, the current study evidences weaknesses with regard to external validity; however, the decision to sacrifice some measure of external validity was made with full knowledge and to the benefit of internal validity. It was felt that in order to effectively begin to establish whether differences in alliance patterns or strength existed across treatments when therapist effects were controlled, rigorously controlled treatment conditions were called for (e.g., Behar & Borkovec, 2003). Extension to designs that are more externally valid will be an important step in future research.

Two other areas of limitation are worth noting. Although ethnic distribution in the current study reflected the population from which the sample was drawn, the sample under-represented ethnic minority groups relative to their national distribution; moreover, some have suggested that oversampling of minority groups should be practiced (APA, 2002). Although there are no a priori reasons to assume different alliance by treatment patterns across ethnic groups, this possibility cannot be ruled out. Findings to date show that although there are no differences in psychotherapy outcome for minority and majority groups, meta-analysis has found effects of drop-out and utilization for ethnically matched client-therapist dyads (Maramba & Hall, 2002), suggesting that the relationship between therapist and client may be affected at some level by ethnic match. However, a much larger and more ethnically diverse client and therapist sample would be required to adequately test related hypotheses.

Finally, alliance in this design was measured at three phases – early, middle, and late in treatment. Although this allowed consideration of change over time, it was not sufficiently frequent to consider more fine-grained analyses such as would be necessary to capture v-shaped deflections.   When alliance is studied session by session or observer-coded moment by moment, there is an opportunity to examine ongoing rupture and repair. Such fine-grained analysis in an additive design would be informative, and is   taken up in further detail in the following section on future directions.

Future Directions

Findings from the present study raise several intriguing questions for future study. These include: (1) links to outcome; (2) v-shaped deflections; (3) consideration of other DSM disorders; and (4) analysis from an individual differences perspective. Given the unique design of the current study, several of these questions could be examined in further analysis of the current sample, whereas others would require an alternative research design.

The current study addressed patterns in alliance change across time, but did not place this within the context of treatment outcome. In this study the immediate goal was to examine the nuances of alliance patterns. However, ultimately our interest in alliance fluctuation and its standing as a common factor is directly related to the status of alliance as a predictor of treatment outcome. Based on meta-analytic findings to date (Horvath & Symonds, 1991; Martin et al., 2000), it is predicted that alliance will be linked to outcome with an effect size of roughly .22, with alliance explaining approximately 5% of the variance in outcome. Moreover, it is expected

that the linear increase found in the current examination of the data may predict

positive outcome (Kivlighan & Shaughnessy, 1995; Patton et al., 1997). Because the

current data were collected within a research design that also measured outcome (i.e.,

Penn State Worry Questionnaire, Stait/Trait Anxiety, Response to Relaxation

Questionnaire, Hamilton Anxiety Rating Scale, ADIS severity rating, and Client

Daily Diary), there is the opportunity to directly test this question for the current

sample. Should links to outcome be uniform across both CBT and IEP treatments,

this would further strengthen support for the common factors hypothesis.

The current research design also affords the opportunity for follow-up

analyses examining patterns of alliance from an individual difference perspective.

The current study focused on the sample as a whole in order to infer to population-

wide patterns, with the goal of testing the common factors hypothesis. However, an

intriguing next step would be to use individual data analytic methods such as

Hierarchical Linear Modeling (HLM) or Cluster Analysis to examine individual and

subgroup alliance patterns. Recent studies have demonstrated considerable between

subject variation in alliance pattern (Kivlighan & Shaughnessy, 2000; Stiles et al.,

2004), and some have suggested that examination of group-wide patterns loses the

meaning of alliance shifts by flattening out curves in the process of aggregating them

(J. C. Muran, personal communication, July 2008). Data from the current sample

could be used not only to examine individual difference patterns, but to further

consider what client personality characteristics or other client variables may define

subgroups sharing common alliance patterns. For example, past research on GAD

has indicated that those with a hostile-dominant personality profile on SASB

measures demonstrate poorer outcome in cognitive-behavioral therapy (Pincus & Borkovec, 1994). Treatment implications would be meaningful if this subgroup was also found to have a specific and unique alliance pattern.

As previously noted, the phase measurement approach (early, middle, late treatment alliance measures) utilized in the current study limits ability to examine alliance in a more nuanced or fine-grained manner. Although the phase approach is a more pragmatic approach that substantially reduces client and therapist burden, there are significant investigative gains for measuring alliance session by session or even with moment to moment observer ratings of videotaped sessions. These latter designs offer the opportunity to consider v-shaped deflections that are thought to reflect the process of alliance rupture and repair. Whether this process occurs consistently throughout treatment or shows phase-specific patterns continues to be open to empirical investigation. Moreover, there have been no studies to date examining rupture-repair in a pure GAD sample of an RCT.

Finally, evidence is slowly emerging to support growing conceptual emphasis on treatment by aptitude interactions (e.g., Castonguay & Beutler, 2006; Clarkin & Levy, 2004), and future research should extend the current findings to other DSM disorders. Whether the current pattern of commonality for client-rated alliance and higher alliance for therapist-rated alliance in CBT as opposed to IEP is unique to individuals with GAD is an open question. However, the issue is more than a matter of mere generalizability. IEP was a treatment developed specifically with the strengths and weaknesses of individuals with GAD in mind. Thus, research examining whether such an approach shows differential agreement on goal, task, and

bond for this population as compared to others would be of interest. Depression

samples seem an ideal extension, given important conceptual similarities and high

comorbidity as well as clearly distinct profiles of strength and weakness.

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