Review

The therapeutic alliance in exposure therapy for anxiety-related disorders: A critical review

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ABSTRACT

The therapeutic alliance has been the subject of a great deal of psychotherapy research, and evidence from numerous empirical studies suggests that a strong patient-therapist relationship predicts favorable treatment outcomes. Despite the consistency of the alliance outcome relationship across treatment modalities and diagnoses, little attention has been given to this potential prognostic indicator in exposure therapy for anxiety-related disorders. Given that exposure therapy requires patients to engage in challenging and distressing activities (e.g., confrontation with feared stimuli), a strong alliance between patient and therapist is conceptually relevant to treatment. Relatively few published exposure therapy trials have included the therapeutic alliance as a process variable, and no single review summarizes findings from this body of literature. Accordingly, the purpose of this review is to provide an overview and synthesis of existing research on the alliance-outcome relationship in exposure therapy. Methodological and conceptual considerations will be discussed, and future research priorities will be identified.

1. Introduction

Anxiety-related disorders have a lifetime prevalence of 31.1 % and affect 40 million adults in the United States each year (Kessler et al., 2005). Although anxiety is fundamentally an adaptive response to danger, anxiety-related disorders, operationalized in this review as comprising generalized anxiety disorder (GAD), social anxiety disorder (SAD), obsessive-compulsive disorder (ODC), posttraumatic stress disorder (PTSD), panic disorder, agoraphobia, health anxiety, and specific phobia (see Asmundson, 2019 for an editorial recommending use of this terminology), are associated with significant disability, reduced quality of life, and functional impairment in educational, social, and occupational domains (American Psychiatric Association, 2013; Rapaport, Clary, Fayyad, & Endicott, 2005). Despite considerable heterogeneity in presentation, cognitive and behavioral phenomena (i.e., threat over-estimation and avoidance, respectively) are consistent across diagnostic categories (Abramowitz, Deacon, & Whiteside, 2019). Thus, cognitive-behavioral therapy (CBT), which targets dysfunctional cognitions and behaviors, is the first-line treatment for anxiety-related disorders (Arch & Craske, 2009). Meta-analytic findings suggest that repeated systematic engagement with feared stimuli (e.g., situations, objects, thoughts) is an essential element of CBT for anxiety (Kaczkurkin & Foa, 2015), and evidence from numerous clinical trials supports the efficacy

and effectiveness of exposure therapy (Abramowitz et al., 2019). Despite strong empirical support for the intervention, however, approximately 50 % of individuals who complete a full course of exposure therapy continue to experience anxiety-related disorders and significant functional impairment (Loerinc et al., 2015; Simpson, Huppert, Petkova, Foa, & Liebowitz, 2006). This limitation has motivated researchers to explore predictors of exposure therapy outcome to identify processes underlying therapeutic change.

One variable that has been hypothesized to predict treatment outcome is the quality of the relationship between the patient and therapist, or the *therapeutic alliance* (e.g., Keeley, Storch, Merlo, & Geffken, 2008). Therapeutic alliance can be conceptualized as the coalition built from the patient's motivation and therapist's provision of appropriate therapeutic techniques (Kazantzis, Dattilio, & Dobson, 2017). According to the widely accepted tripartite model of therapeutic alliance proposed by Bordin (1979), this is a multidimensional construct comprised of the degree to which: (a) the therapist and patient connect in a mutually supportive and respectful way (bond alliance), (b) the patient and therapist agree on treatment goals (goal alliance), and (c) the patient and therapist agree on the tasks implemented to reach such goals (task alliance).

The relationship between therapist and patient is an element of psychotherapy common across treatment modalities. In recognition of

this fact, the Third Interdivisional APA Task Force on Evidence-Based Relationships and Responsiveness concluded that the therapeutic relationship makes substantial and consistent contributions to treatment outcome independent of treatment modality (Norcross & Lambert, 2018). Moreover, meta-analyses and literature reviews suggest that the alliance is moderately associated with treatment outcome across psychological diagnoses (Browne, Nagendra, Kurtz, Berry, & Penn, 2019; Flückiger, Del Re, Wampold, & Horvath, 2018; Horvath, Del Re, Flückiger, & Symonds, 2011; Martin, Garske, & Davis, 2000).

Exposure therapy requires engagement with feared stimuli that the patient generally tries to avoid. For example, an individual with social anxiety may be instructed to strike up conversations with strangers in a shopping mall, a child with contamination fears (i.e., OCD) may be asked to repeatedly touch surfaces she considers to be "germy," such as toilets and doorknobs. An adult with panic disorder can be encouraged to engage in physical exertion to create feared physiological sensations. Thus, it seems obvious that a strong collaborative relationship between patient and therapist is necessary for successful treatment, especially given the need for cooperation and trust that the therapist is acting in the best interest of the patient (Langhoff, Baer, Zubraegel, & Linden, 2008).

Yet despite the conceptual plausibility of a significant alliance-outcome relationship, relatively few empirical studies of exposure therapy have investigated the alliance as a hypothesized predictor of outcome. This may be a result of the emphasis on *specific*, as opposed to *common* factors in exposure therapy research. Indeed, within the field of CBT more broadly, specific therapeutic procedures derived from empirically-supported models of psychopathology are regarded as the primary mechanisms of change (e.g., Abramowitz & Blakey, 2020; Kazantzis et al., 2017). Randomized controlled trials that compare exposure therapy to other credible treatments have found significant outcome differences, even when therapeutic alliance ratings are consistent across conditions (e.g., Strauss, Huppert, Simpson, & Foa, 2018). These findings do not, however, imply that a strong therapeutic alliance has *no* bearing on exposure therapy outcome. That is, although the strength of the alliance does not account for the superiority of exposure therapy relative to other interventions, it may help explain variability in treatment outcome among individuals who receive exposure therapy.

Because the focus of exposure therapy is on helping the individual engage with feared stimuli to test out fear predictions, as opposed to building insight into symptoms, the relative contributions of the three therapeutic alliance components described earlier may be unique in exposure relative to other treatments. Specifically, some research suggests that *task alliance* (in comparison with bond and goal alliance) has the most profound effect on anxiety symptom reduction given the exposure's emphasis on behavioral change (Hagen et al., 2016; Hoffart, Øktedalen, Langkaas, & Wampold, 2013; Wheaton, Huppert, Foa, & Simpson, 2016). Yet, there's been no comprehensive synthesis or evaluation of this body of research to examine the individual effects of bond, goal, and task alliance. This is one goal of the present review.

The *process* by which alliance might contribute to symptom reduction in exposure therapy is also important to consider, as the identification of mechanisms of change during exposure therapy can lead to the development of more targeted therapeutic techniques. *Treatment adherence*, which operationalizes the extent to which a patient takes action consistent with the treatment approach and recommendations by the therapist (e.g., confronting feared stimuli both within and between sessions), has been hypothesized to explain the relationship between alliance and outcome. A strong therapeutic alliance may encourage patients to engage with evidence-based therapeutic techniques for anxiety-related disorders (i.e., specific factors), which in turn leads to symptom reduction. Research findings suggest a relationship between treatment adherence and both alliance and symptom reduction among clinically anxious individuals (Abramowitz, Franklin, Zoellner, & Dibernardo, 2002; De Araujo, Ito, & Marks, 1996; Simpson et al., 2011), but few studies have empirically tested models by which treatment

adherence might account for change in symptom severity associated with therapeutic alliance. Conceptual frameworks that disentangle the therapeutic alliance from the processes it facilitates (e.g., treatment adherence) are needed to inform hypotheses and research aims. With this in mind, the present review critically examines the existing literature on the alliance-outcome relationship in exposure therapy and synthesizes findings to guide future research.

2. Measurement of the therapeutic alliance

Reviews of alliance research have identified more than 70 instruments that measure the strength of the relationship between therapist and patient (Flückiger, Del Re, Wampold, & Horvath, 2018; Horvath et al., 2011). Many of these instruments measure alliance from multiple perspectives including that of the patient, therapist, and independent observer. Specifically, studies of exposure therapy outcome that have measured therapeutic alliance have used versions of the Working Alliance Inventory (WAI; Horvath & Greenberg, 1989), the Helping Alliance Questionnaire (HAq; Luborsky, 1984), and the California Psychotherapy Alliance Scale (CALPAS; Marmar, Weiss, & Gaston, 1989).

The original 36-item WAI was based on Bordin's (1979) conceptualization of the therapeutic alliance which includes *bond alliance* (e.g., "I feel comfortable with ___"), *goal alliance* (e.g., "I wish ___ and I could clarify the goals of our sessions"), and *task alliance* (e.g., "We agree on what is important for me to work on"). The 12-item shortened version of the WAI (WAI-S; Tracey & Kokotovic, 1989) maintained the same three factors, as did the revised short version (WAI-SR; Hatcher & Gillaspy, 2006). Relative to the original WAI and the WAI-S, the WAI-SR has demonstrated a clearer representation of the alliance dimensions and an improved model fit in confirmatory factor analyses (Munder, Wilmers, Leonhart, Linster, & Barth, 2009). Elvins and Green (2008) suggested that this measure accurately reflects therapist contributions to the personal relationship but is limited in its ability to capture concepts of patient working capacity and motivation.

The HAq, by contrast, has two subscales: Helping Alliance and Collaboration. Items reflect the extent to which (a) the patient perceives the therapist as providing needed help (e.g., "I believe that my therapist is helping me") or (b) the patient experiences therapy as a collaborative effort (e.g., "I feel that I am working together with the therapist in a joint effort; we are on the same team"). The HAq-II was developed as a revision that addressed concerns that the original measure was explicitly assessing symptomatic improvement in addition to the alliance by only including positively worded items. Hatcher and Barends (1996) consider the HAq to be too general to distinguish unique aspects of the alliance.

The CALPAS reflects psychodynamic theory and contains four scales: (a) Patient Working Capacity (e.g., "When your therapist commented on one situation, did it bring to mind other related situations in your life?"), (b) Patient Commitment (e.g., "Did you feel that even if you might have moments of doubt, confusion, or mistrust, overall therapy was worthwhile?"), (c) Working Strategy Consensus (e.g., "Did you feel that you disagreed with your therapist about changes you would like to make in your therapy?"), and (d) Therapist Understanding and Involvement (e.g., "Did you feel pressured by your therapist to make changes before you were ready?"). Subscales were designed to address the separate contributions of the client and therapist to the alliance and mutual agreement on strategies and goals, although it has been argued that the questions most consistently reflect their overlap (Elvins & Green, 2008). The CALPAS captures the affective and interpersonal aspects of the alliance bond (Hatcher & Barends, 1996).

All versions of the WAI, HAq, and CALPAS have three parallel forms created for perceived alliance by patients, therapists, and independent observers, and they have all demonstrated good reliability and convergent validity (Munder et al., 2009). Despite their differences, all three instruments and their variants have acceptable psychometric

properties, and have consistently predicted outcome across treatment modalities, diagnoses, and methodological designs (Martin et al., 2000).

3. Literature search strategy and inclusion criteria

Studies included in the present review were identified through an electronic literature search (via PsycINFO and PubMed databases) using the search terms ("anxiety" OR "anxiety disorder" OR "OCD" OR "PTSD" OR "exposure" OR "exposure therapy") AND ("alliance" OR "therapeutic relationship" OR "working relationship" OR "therapist factors"). Articles were included if they (a) were published or in press before or during August 2019, (b) were written in English, (c) examined an anxiety-related condition in an adult sample, (d) were empirical and included quantitative data (i.e., reviews, case studies, and qualitative papers were excluded), (e) used a validated therapeutic alliance scale with adequate psychometric properties, (f) measured the relationship between therapeutic alliance and at least one systematic outcome measure in the context of individual anxiety treatment. The majority of clinical trials for anxiety-related disorders include treatment packages that incorporate multiple techniques (e.g., cognitive restructuring in addition to exposure). This precludes a reliable disentangling of treatment elements when measuring therapeutic alliance in such studies. Thus, all studies included in the present review examined interventions with exposure therapy as the primary treatment component.

The literature search strategy and inclusion criteria yielded 14 studies that measured the relationship between therapeutic alliance and exposure therapy outcome. As shown in Table 1, the diagnoses represented across studies were as follows: OCD (6 studies), PTSD (4 studies), specific phobia (1 study), health anxiety (1 study), generalized anxiety disorder (1 study), and panic with agoraphobia (1 study). The study sample sizes ranged from 24 to 116, and exposure treatment programs varied in length from one session to 18 sessions. One study was conducted in a residential treatment facility, whereas the rest utilized outpatient samples. All studies defined and measured outcome as symptom reduction in the target diagnostic category (e.g., frequency and intensity of obsessions and compulsions in OCD). Overall, ten studies found evidence for a relationship between outcome and at least one component of the therapeutic alliance, whereas four studies did not find a significant alliance-outcome relationship.

4. Review of published research findings

4.1. Alliance and outcome

4.1.1. Global alliance predicting outcome

Seven of the reviewed studies found the overall therapeutic alliance to predict outcome. Four studies of exposure with response prevention (ERP) for OCD reported a link between a strong alliance and OCD symptom reduction at posttreatment (Maher et al., 2012; Simpson et al., 2011; Strauss et al., 2018; Vogel, Hansen, Stiles, & Götestam, 2006). In a study of imaginal exposure for PTSD, the strength of the therapeutic alliance established early in treatment reliably predicted improvement in PTSD symptoms at posttreatment (Cloitre, Stovall-McClough, de Miranda, & Chemtob, 2004). McLaughlin, Keller, Feeny, Youngstrom, and Zoellner (2014) found a similar relationship during prolonged exposure (PE) for PTSD, such that a stronger alliance throughout treatment was predictive of better treatment outcome. Therapeutic alliance was also associated with treatment outcome in a one-session exposure for specific phobia (Pan, Huey, & Hernandez, 2011) and in exposure therapy for health anxiety (Weck, Richtberg, Jakob, Neng, & Höfling, 2015).

By comparison, four studies of the therapeutic alliance in exposure therapy failed to find a significant alliance-outcome relationship. In one investigation of worry exposure for GAD, Hoyer et al. (2009) found that therapeutic alliance did not significantly influence treatment outcome. In CBT for health anxiety, the correlation between alliance and health anxiety symptom reduction was similarly nonsignificant (Weck et al., 2015). Finally, Theodore (2016) failed to replicate the significant associations between therapeutic alliance and treatment outcome in PE for PTSD found in previous studies, and therapeutic alliance was not significantly associated with treatment outcome in exposure therapy for panic with agoraphobia (Maiwald et al., 2019).

4.1.2. Components of alliance predicting outcome

As previously mentioned, the relative contributions of bond, goal, and task alliance to exposure therapy outcome have not yet been established. Although many years of alliance research supports the significant, individual contributions of each alliance component, Horvath (2018) referred to the state of research comparing the predictive ability of each alliance component as a "practical vacuum in the literature." Some researchers have hypothesized that in exposure therapy, shared decision making on tasks (e.g., task alliance) between the therapist and patient is the most important component of the therapeutic relationship. Conceptually, the emphasis on behavioral challenges in exposure therapy may require increased attention to agreement on therapeutic

Table 1
Summary of Study Characteristics and Alliance-Outcome Findings.

Study	N	Diagnosis	Intervention	Alliance Measure	Alliance Rater(s)	Significant Alliance-Outcome Relationship?
Cloitre et al. (2004)	49	PTSD	Imaginal exposure	WAI-S	Patient	Yes
Hagen et al. (2016)	44	OCD	ERP	WAI-SR	Patient, therapist	Yes
Hoffart et al. (2013)	66	PTSD	PE	WAI-SR	Patient	Yes
Hoyer et al. (2009)	24	GAD	Worry exposure	HAq-II	Patient	No
Maher et al. (2012)	28	OCD	ERP	WAI-SR	Patient	Yes
Maiwald et al. (2019)	26	Panic w/ Agoraphobia	Exposure	WAI-SR	Independent rater	No
McLaughlin et al. (2014)	116	PTSD	PE	CALPAS	Patient	Yes
Pan et al. (2011)	30	Specific Phobia	Exposure	WAI-S	Patient, therapist, observer	Yes
Simpson et al. (2011)	30	OCD	ERP	WAI-SR	Patient	Yes
Strauss et al. (2018)	54	OCD	ERP	WAI-S	Patient, therapist	Yes
Theodore (2016)	50	PTSD	PE	WAI-SR	Patient	No
Vogel et al. (2006)	39	OCD	ERP	HAq	Patient	Yes
Weck et al. (2015)	33	Health Anxiety	Exposure	HAq	Patient, therapist, observer	No
Wheaton et al. (2016)	37	OCD	ERP	WAI-SR	Patient	Yes

Note. N = number of participants who received exposure therapy. PTSD = posttraumatic stress disorder, OCD = obsessive-compulsive disorder, GAD = generalized anxiety disorder, ERP = exposure with response prevention, PE = prolonged exposure, WAI-S = Working Alliance Inventory-Short, WAI-SR = Working Alliance Inventory-Short Revised, HAq = Helping Alliance Questionnaire, CALPAS = California Psychotherapy Alliance Scale.

tasks. Wolitzky-Taylor, Viar-Paxton, and Olatunji (2012), for example, discuss the value of collaboratively designing exposure tasks to enhance the therapeutic relationship and provide the patient with a sense of control over the therapeutic process. Kazantzis et al. (2017) suggest reviewing the treatment rationale on several occasions throughout treatment to ensure that the patient agrees with the tasks chosen to meet personalized goals. However, despite the assumed clinical utility of maximizing task agreement before beginning challenging exposure exercises, only three studies have tested the hypothesis that task alliance is the most influential component of the therapeutic relationship.

Hoffart et al. (2013) found that stronger *task* and *bond* alliance were both associated with larger decreases in PTSD symptoms over the course of treatment, yet *goal* alliance had no such effect. On the other hand, findings from two studies of ERP for OCD suggested that *task* and *goal* alliance may be more important than *bond* alliance. Wheaton et al. (2016) found that although overall ratings of the quality of the therapeutic alliance were not related to outcome in ERP for OCD, the degree to which patients and therapists agreed on therapeutic tasks predicted outcomes. Hagen et al. (2016) found that *task* and *goal* dimensions of the alliance predicted outcome in ERP for OCD, whereas *bond* alliance was not related to outcome.

Taken together, results from these three studies suggest that agreement on tasks is relevant to exposure therapy outcomes, but findings do not consistently reveal the unique importance of task alliance relative to bond and goal alliance. Specifically, results from Hoffart et al. (2013) suggest that bond alliance is also associated with symptom reduction, and results from Hagen et al. (2016) suggest that goal alliance is important to treatment outcome as well. Task and goal agreement are conceptually important in exposure therapy because the patient must be willing to engage with the exposure tasks, and the patient's bond with the therapist may facilitate safety learning and promote willingness to proceed with difficult tasks. Task and goal alliance may be characterized as cognitive factors, whereas bond alliance may be a more emotional construct. Both cognitive and emotional factors play a role as patients engage in difficult confrontations to overcome their fears. Further research is needed to distill the alliance construct into the components most relevant to exposure therapy.

4.2. Treatment adherence and the alliance-outcome relationship

Although the alliance is a common factor of all therapeutic interventions, study findings have been inconsistent with respect to the extent to which it relates to exposure therapy outcome. Further, the processes underlying the alliance-outcome relationship (e.g., treatment adherence) may be unique in exposure therapy relative to other treatment modalities. Horvath (2018) called for research that accounts for contextual factors that influence the alliance-outcome relationship in different circumstances, rather than attempting to generate one theory that explains the role of the alliance across all interventions. Thus, a theoretical framework for understanding the alliance-outcome relationship in exposure therapy is needed to account for these inconsistencies and guide future research efforts.

Treatment adherence has emerged as both a correlate of therapeutic alliance and a strong predictor of exposure therapy outcome. Decades of peer-reviewed articles document the efficacy of exposure techniques in treating anxiety (Abramowitz et al., 2019), and several studies have established a link between treatment adherence and outcome (Abramowitz et al., 2002; De Araujo et al., 1996; Simpson et al., 2011). Related research also suggests that a patient's agreement with the treatment plan predicts treatment adherence, which can be interpreted as a relationship between task alliance and adherence (Abramowitz et al., 2002). Although certain elements of adherence (e.g., session attendance) are central to all psychological treatments, adherence may be especially challenging and variable in exposure therapy given the structured and active treatment approach. It is theoretically plausible that a strong therapeutic alliance motivates patients to complete

exposure exercises as recommended by the therapist, which in turn promotes symptom reduction.

Consistent with this idea, (Bjorgvinsson, Hart, & Heffelfinger, 2007) assert that a strong alliance is necessary for patients to engage in challenging exposure exercises. Conversely, a tenuous interpersonal bond and weak collaboration on treatment goals and tasks may discourage patients from engaging fully with in-session exposure exercises and homework assignments. Outside the context of exposure therapy, researchers have suggested that a therapist can motivate patients to participate in therapeutic tasks that facilitate a sense of competence, mastery, and control over psychological symptoms (Keijsers, Schaap, & Hoogduin, 2000). These perspectives align with the conceptualization of the therapeutic alliance as a tool to increase treatment adherence.

Further, the potential mediating effect of treatment adherence may help explain the inconsistent effects of therapeutic alliance on treatment outcome across the studies reviewed. Patient variables such as treatment history, psychiatric comorbidities, socioeconomic status, and transportation access have been associated with treatment adherence (Santana & Fontenelle, 2011), and study samples likely vary with regard to these characteristics. Given that treatment adherence is strongly associated with outcome, variables that interfere with adherence may also limit the impact of the therapeutic alliance on outcome.

Four studies over the past decade—three on OCD and one on PTSD—have empirically tested the hypothesis that treatment adherence helps explain the alliance-outcome relationship. Simpson et al. (2011) found that adherence fully mediated the alliance-outcome relationship in ERP for OCD. Maher et al. (2012) similarly found that therapeutic alliance had a significant independent effect on patient adherence, which in turn had a significant direct effect on outcome. Finally, Wheaton et al. (2016) found that task agreement in particular was associated with stronger treatment adherence, which mediated the linear relationship between task agreement and outcome. In the one trial of PE for PTSD, alliance was associated with both treatment adherence and overall treatment completion (Keller, Zoellner, & Feeny, 2010).

Of the studies that examined treatment adherence as a mediator of the alliance-outcome relationship, the majority were conducted with samples of individuals receiving ERP for OCD. It may be the case that the process by which therapeutic alliance promotes symptom reduction differs by diagnosis. Whereas adherence may be one of the strongest predictors of outcome in ERP for OCD (Simpson et al., 2011), symptom reduction in other diagnostic categories may be more closely linked to different therapeutic processes. For example, although Keller, Zoellner, and Feeny (2010) found that alliance was associated with adherence and overall PE treatment completion, the therapeutic alliance may foster clinical improvement via alternative pathways during PE (e.g., building interpersonal trust). Similarly, for individuals with social anxiety, the development of the therapeutic alliance may function as an exposure exercise as the patient learns that interpersonal interactions are less threatening than previously believed. This is consistent with a conceptualization of the relationship between patient and therapist as a factor that has a direct effect on outcome (Goldfried & Davila, 2005). Along similar lines, Krasner's (1962) discussion of the therapist as a "reinforcement machine" can be applied to exposure therapy in that approach behaviors by the patient are reinforced by the therapist.

It is important to note that the direction of the causal arrow between therapeutic alliance and treatment adherence remains ambiguous. It may be the case that the relationship between these variables is bidirectional, or that good treatment adherence leads to a strong alliance. Therapists may be more engaged with patients who complete exposure exercises as recommended, leading to greater investment from both therapist and patient and a stronger perceived alliance. Patients who adhere to exposure treatment may also be more likely to endorse goal concurrence and task agreement and therapists may report that adherent patients are more closely aligned with them on goals and tasks. Finally, it may be that the constructs of alliance and adherence are too overlapping to fully isolate and sequence. Consistent with this notion,

Kazantzis et al. (2017) suggested that despite efforts to differentiate therapeutic techniques and patient factors from the therapeutic alliance itself, exposure techniques may be inextricably linked to the therapeutic relationship.

4.3. Conceptual and methodological considerations

As reviewed above, the majority of studies suggest that alliance serves as a prognostic indicator of exposure therapy outcome. However, given the variability in conceptual approaches to understanding adherence and in individual study methodology, it is likely that such characteristics moderate study results. Therefore, careful consideration of conceptual and methodological challenges is warranted so that future research can address important limitations.

4.4. Directional and causal ambiguity

One of the most conspicuous limitations of research examining therapeutic alliance as a prognostic indicator is the dilemma that therapeutic alliance is just as likely to be a *consequence* of symptom change as it is to be a *predictor* (Strauss et al., 2018). As noted above, measuring alliance early in treatment and controlling for symptom change can help to mitigate this potential confound (Elvins & Green, 2008). Relatedly, demand characteristics are likely to play a particularly central role when research participants are rating their relationship with a therapist. This experimental artifact is often a concern in studies and may be particularly pertinent to alliance research because of the interpersonal nature of questions that assess the therapeutic alliance. Even if participants are unaware of explicit hypotheses regarding the alliance-outcome relationship, pressure to rate the therapist positively may artificially inflate patient-rated alliance scores.

4.5. Measurement issues

Five different instruments that measure the therapeutic alliance were used in the reviewed studies. Three studies used the 12-item WAI-S (Tracey & Kokotovic, 1989), whereas seven studies used the revised short WAI-SR (Hatcher & Gillaspy, 2006). As previously noted, the WAI-SR has shown a clearer representation of the alliance dimensions and an improved model fit compared to the WAI-S (Munder et al., 2009). Two studies used the original HAq (Luborsky, 1984) and one used the revised HAq-II (Luborsky et al., 1996). One study used the CALPAS (Marmar et al., 1989). Importantly, only the WAI and its derivative versions measure bond, goal, and task alliance as different factors, so any inferences about alliance components are limited to the ten studies that included the measure. The distribution of measures across studies is represented in Table 1.

Although all instruments used in the reviewed studies have demonstrated acceptable psychometric properties and have consistently predicted outcome in studies of treatments other than exposure therapy, they are each derived from different conceptualizations of the therapeutic alliance. Because of this, measurement differences across the reviewed studies can be viewed as both a strength and a limitation. It is not unusual for psychological constructs to be assessed in various ways, and the emergence of the therapeutic alliance as a significant predictor of outcome in the majority of studies in spite of methodological inconsistencies may be suggestive of a true alliance-outcome relationship. However, these inconsistencies also make it difficult to draw conclusions about the essential components of the alliance construct. Further, as Horvath (2018) argues, the alliance concept is "at risk" due to variability across measures and sources of information that operationalize the concept.

4.6. Who is rating alliance?

In addition to variability in measurement instruments, raters of the therapeutic alliance differed between studies. Nine studies included alliance ratings by patients only, whereas two included ratings by patients and therapists, and two included ratings by patients, therapists, and independent raters alike. One study included alliance ratings by independent raters exclusively. Previous alliance research suggests a strong correlation between therapist and patient alliance ratings, and patients' report of therapeutic alliance has been found to be the most reliable predictor of treatment outcome (Martin et al., 2000). Additionally, no moderating effect of rater perspective on the association between alliance and outcome has been previously found (Horvath, 2011). However, in the present review, rater variability across exposure therapy trials contributed to important differences between studies. In the study published by Hagen et al. (2016), for example, therapist ratings of the alliance predicted treatment outcome, whereas patient ratings of the alliance did not. Conversely, Strauss et al. (2018) found that patient-rated alliance significantly covaried with OCD symptoms, whereas therapist-rated alliance did not.

Although a strong correlation between patient and therapist reports suggest that variability in raters does not constitute a serious methodological concern across studies (Martin et al., 2000), the common practice of exclusively using patient report measures can be seen as inconsistent with the definition of therapeutic alliance. The therapeutic alliance is fundamentally a dyadic construct shaped and perceived by both patient and therapist. Task and goal agreement, as well as the strength of the bond, requires integrating the subjective experience of both patient and therapist. Instruments administered to only one rater therefore capture the nature of a dyadic as perceived by that particular rater, which although clinically valuable, doesn't capture a mutually experienced alliance. Patient-rated measures were most common in the reviewed studies, so perceptions about the nature of the relationship which influence outcome are most often those that belong to the patient and not the therapist. This is important to note because the divergent roles of therapists and patients may create differences in how they each interpret the alliance construct, and discrepant ratings may reflect the power differential inherent in individual psychotherapy (Browne et al., 2019). For example, patients may perceive therapists to be competent and effective given their position of power rather than their demonstrated skills. Patients may also be influenced by their knowledge and beliefs about what therapeutic approaches are most helpful, whereas therapists may consider previous experiences with patients to appraise the alliance in their present therapeutic relationship (Zilcha-Mano et al., 2015). Patients and therapists may also hold different beliefs about characteristics of a strong and positive relationship, or what it means to improve over the course of therapy.

This limitation is not unique to exposure therapy outcome research—a meta-analysis found that 112 of 175 studies assessing the therapeutic alliance were based on the patient's perspective alone (Horvath et al., 2011). Utilizing alliance ratings from an independent observer is an option to remove the potential biases of having patients and/or therapists rate the alliance and may be more reliable for tracking changes over time (Browne et al., 2019). However, that which is gained in objectivity may compromise the more therapy-relevant perspectives of therapist and patient. That is, it may be the case that the subjective experience of therapeutic alliance is at the core of the construct, and observable behaviors cannot fully capture the bond felt by both therapist and patient. Consequently, studies that include patient, therapist, and observer versions of the alliance measure most comprehensively capture the construct. As suggested by Horvath (2018), differences in alliance ratings when assessed from different sources may be considered a method problem (i.e., inadequate translation of instruments), but may also serve as important information distinguishing meaningful underlying variables. Overall, differences in raters between studies highlight the challenge of interpreting the nature and direction of the alliance-outcome relationship when multiple perspectives of the alliance are included in analyses.

4.7. Assessment timing

The optimal timing for measuring the therapeutic alliance has been debated in the literature for many years. Although meta-analytic findings suggest that alliance is related to outcome whether it is measured at early, middle, or late stages of therapy (Horvath et al., 2011), therapeutic alliance measured before the fifth treatment session (i.e., "early alliance") is the most robust prognostic indicator (Browne et al., 2019; Elvins & Green, 2008). Exposure therapists most typically introduce exposure exercises after the third session (using introductory sessions to focus on assessment, psychoeducation, and treatment rationale e.g., Abramowitz & Jacoby, 2014), so the third session may be optimal for measuring alliance before change-oriented techniques are implemented. This suggestion is consistent with research measuring alliance in non-exposure-based treatments (Browne et al., 2019; Elvins & Green, 2008), and allows for a relationship to build between therapist and patient before alliance is assessed.

Moreover, assessing alliance before the introduction of exposure exercises limits the likelihood that therapeutic techniques will confound the effects of the alliance on outcome. Indeed, as treatment progresses, the confounding impact of symptom improvement on the alliance construct increases (Browne et al., 2019). An alternative viewpoint is that the development of the therapeutic alliance over time, as opposed to at a single point in time, is more valuable to researchers interested in predicting outcome. If the process variable under examination is *change* in alliance, rather than early alliance, the study design and data analytic plan must accommodate multiple assessments.

The lack of consensus regarding when to assess alliance may explain the considerable variability in methodology across the studies reviewed. For example, two studies measured alliance during the first session, three during the second or third session, one during the fifth session, one during the sixth session, and one during the eighth session. In addition, three studies measured alliance multiple times throughout treatment, and two measured alliance during every treatment session.

Vogel et al. (2006) highlighted that their decision to measure alliance at mid-treatment, after participants experienced a reduction in OCD symptom severity, made it impossible to determine if the alliance scores were independent of the effects of the several sessions of exposure that had already occurred. Theodore (2016) measured alliance at the eighth treatment session for PTSD, so the strength of alliance was likely confounded by treatment response during the first several sessions. Indeed, by the eighth session, patients had already received psychoeducation, breathing retraining, and two exposure sessions from the therapist. This extended contact prior to alliance measurement may have created ceiling effects, such that the alliance was at its peak with limited variability to explain differential treatment outcomes. Maiwald et al. (2019) measured alliance at the fifth session, which is also later in treatment than recommended due to redundancies between alliance and outcome. On the other end of the timing spectrum, Hoyer et al. (2009) measured alliance after the first session, which may be too early for a meaningful relationship to form between therapist and patient. This considerable variability must be considered when drawing conclusions about the alliance-outcome relationship in exposure therapy.

4.8. Diagnosis

Another important factor to consider is the diagnostic heterogeneity across studies represented in the current review. All studies that examined the therapeutic alliance in OCD treatment suggest a relationship between the strength of the alliance and ERP outcomes, and this relationship may be specific to alliance components related to task and goal agreement. The majority of studies examining the alliance in PTSD treatment also found a significant alliance outcome relationship. Conversely, alliance did *not* predict outcome in a study examining exposure therapy for health anxiety as well as a study examining exposure-based treatment for panic disorder with agoraphobia.

Nevertheless, given that only a single study investigated the alliance-outcome relationship for each of the latter diagnoses, it may be inappropriate to generalize. Nonetheless, it is conceptually plausible that the relationship between alliance and outcome is dependent on the specific diagnoses of the individuals being treated.

Why might this be case? Effective OCD treatment, for example, may require a stronger therapeutic alliance relative to other fear-based disorders given a proneness to guilt and shame among individuals with obsessional thinking patterns and compulsive behaviors (Valentiner & Smith, 2008). Successful PTSD treatment may also require a stronger therapeutic alliance due to the heightened importance of building interpersonal trust with individuals who have experienced a traumatic event (Cloitre, Scarvalone, & Difede, 1997). Traumatic experiences are often followed by interpersonal apprehension and feelings of helplessness, shame, guilt, and anger, so disclosure of difficult emotions may require a development of a strong bond between patient and therapist.

The therapeutic alliance may also be especially important for individuals with SAD because positive reactions from others (including therapists) can serve to undermine negative beliefs about the self and others. Given that all in-person therapies involve an element of social exchange, developing a strong therapeutic alliance may be particularly important for persons with SAD as it likely exemplifies treatment goals of increased social interaction and decreased social avoidance. It is important to note that although alliance may have increased importance in this population, research suggests that therapeutic alliance is not necessarily difficult to build and maintain for individuals with SAD (Ngai, Tully, & Anderson, 2015). Still, as of this writing, no studies have examined the alliance-outcome relationship in exposure therapy for social anxiety.

4.9. Outcome measurement

The studies reviewed relied on symptom change as the dependent variable, yet the alliance may also be integral to therapy processes that are not captured by outcome analyses. Although undoubtedly useful for research and treatment, symptom severity does not necessarily represent current functioning and quality of life of an individual. This limitation may be especially important to acknowledge in the context of anxiety treatment, given that anxiety itself is adaptive and not inherently dangerous or impairing. An individual's functioning, therefore, may depend less on symptom severity and more on anxiety management. Perhaps therapeutic alliance is more integral to improving functioning and quality of life relative to symptom reduction.

Another dependent variable to consider is dropout, given that approximately 16 % of individuals drop out of exposure-based anxiety treatment before completing a full course (Taylor, Abramowitz, & McKay, 2012). Meta-analytic findings show a moderately strong relationship in the negative direction between therapeutic alliance and psychotherapy (both exposure and non-exposure treatment) dropout (Sharf, Primavera, & Diener, 2010). Although the studies reviewed lacked the statistical power to assess this relationship, the alliance may be a powerful tool in exposure therapy to buffer against premature therapy termination.

5. Conclusions and future directions

The purpose of this review was to provide an overview and synthesis of existing research on the relationship between therapeutic alliance and exposure therapy outcome. Decades of psychotherapy research suggest that the strength of the relationship between patient and therapist is a common factor that is associated with treatment response. In the context of exposure therapy specifically, most of the studies reviewed found evidence for a significant alliance-outcome relationship. This relationship may be stronger for some components of the alliance (e.g., goal and task agreement); and some research suggests that

treatment adherence explains the relationship between alliance and outcome. These findings imply that the therapeutic relationship is an essential tool for promoting treatment adherence in exposure therapy, which in turn supports positive therapeutic change. Given the inconsistent findings and methodological and conceptual limitations, however, the relationship between alliance and exposure therapy outcome needs further investigation. Surprisingly few published exposure therapy outcome studies include an alliance measure, so routinely including a reliable instrument in assessment batteries would eventually allow for meta-analyses that examine the outcome-alliance relationship across a large number of research studies.

Additional research on the relevance of treatment adherence to therapeutic alliance and outcome would help advance the exposure therapy research field. Specifically, future studies should examine whether certain components of the alliance are more closely related to patient adherence than others. To that end, treatment outcome researchers may consider routinely including an adherence measure along with an alliance measure in assessment batteries of randomized controlled clinical trials. The development of an adherence measure specific to exposure therapy tasks would help promote the inclusion of this variable in treatment outcome research. For example, the Patient EX/RP Adherence Scale (PEAS; Simpson, Maher et al., 2010) for

OCD has good psychometric properties and focuses on compliance with key procedures of ERP. The development of a parallel measure for exposure therapy delivered across anxiety-related disorders would represent an important contribution to the field.

As previously noted, treatment adherence is just one hypothesized mediator of the alliance-outcome relationship. Future research should consider additional constructs that may help explain the processes by which therapeutic alliance fosters clinical change. For example, treatment credibility, outcome expectancy, and therapist competence may be alternative mechanisms by which alliance produces changes in symptom severity. Another construct that has not yet been explored in exposure therapy research is self-efficacy or *autonomy support*. Research guided by self-determination theory has found that autonomy promotes self-motivation and psychological health (Ryan & Deci, 2000). Therapists can support their patients' autonomy by taking their perspective, providing a meaningful rationale for suggestions, and supporting an individual's choices without attempting to exert control (Browne et al., 2017). Autonomy support has been associated with engagement in psychological treatment (Ryan & Deci, 2000; Zuroff et al., 2007; Zuroff, Koestner, Moskowitz, McBride, & Bagby, 2012), suggesting that it may play a role in explaining the alliance outcome relationship. A common misconception about exposure therapy is that it reduces patient autonomy by "forcing" patients to confront feared stimuli. This view is inconsistent with best practices in exposure therapy, which encourage patients to address their own avoidance, build confidence in their fear tolerance, and develop independence in guiding their own treatment (Rothbaum & Schwartz, 2002). Autonomy support has been referenced in research on augmenting exposure therapy with motivational interviewing (e.g., Simpson et al., 2010). Yet, to date, no studies have examined autonomy support as a strategy for promoting clinical change in exposure therapy.

Methodological advances would help address challenges associated with alliance research. Regarding measurement of the alliance, an exposure-specific assessment of the therapeutic alliance would be useful for more precisely operationalizing the construct for anxiety treatment. Bordin (1979) referenced the importance of therapeutic context when he introduced the concept of the therapeutic alliance, noting that different forms of therapy demand different kinds of bonds, goals, and tasks specific to the type of therapy (Horvath, 2018). Although the idea of modality-specific alliance constructs has not gained much traction in alliance research, there is some empirical evidence that clients' relational needs differ depending on treatment modality and style (Horvath, 2018). Given previously discussed limitations of existing alliance measures, the development of a more sensitive instrument would

help researchers isolate the effects of the alliance on exposure therapy outcome.

Additionally, creating standards for the treatment session at which alliance is measured (e.g., by including recommended timing on the assessment instrument) would help researchers compare findings across studies. Existing research suggests that the third session is the most appropriate time to measure the alliance if it is not feasible to collect alliance data at multiple moments throughout therapy. More frequent data collection and more precise analytical strategies could also reduce the confounding impact of symptom reduction on perceived alliance (Elvins & Green, 2008) and reveal sequential effects (Strauss et al., 2018). For exposure therapy studies in which repeated alliance assessment is feasible, it is important to consider ways in which the critical components of the alliance that promote behavior change may shift over time. It may be the case that building a strong therapeutic bond is most important in the first few sessions to promote interpersonal trust and ensure that the patient feels understood and emotionally validated. Over time, however, the balance might shift to the importance of task and goal agreement as the therapist and client develop a list of exposure exercises and the patient begins confronting fears. This reasoning parallels empirical findings suggesting that precipitants and agents of change differ between stages of anxiety treatment (Gloster et al., 2014).

Analytical techniques that account for multiple time points and perspectives would also help uncover nuances in the therapeutic process of exposure therapy. For example, time series analyses that capture the dynamics of psychological change over time would allow researchers to map trajectories of change in therapeutic alliance, treatment adherence, and symptoms to help disentangle the temporal relationships between each variable. Researchers may also consider applying the actor–partner interdependence model of dyadic relationships (e.g., Cook & Kenny, 2005) to alliance research to account for bidirectional effects between patients and therapists. Further, innovative data collection strategies such as ecological momentary assessment create opportunities to gather real-time alliance, symptom, and adherence ratings at multiple time points to more precisely observe variation throughout the therapeutic process.

Finally, there is little empirical research that examines therapist behaviors that promote a strong alliance and therapeutic change in exposure therapy. Studies that have investigated the alliance outside the context of exposure therapy support the hypothesis that therapist characteristics are correlated with the alliance (Ackerman & Hilsenroth, 2003), and therapist variability in the alliance has been shown to affect clinical outcomes (Baldwin, Wampold, & Imel, 2007; Del Re, Flückiger, Horvath, Symonds, & Wampold, 2012). Although treatment manuals consistently recommend that therapists develop competence in both technical and interpersonal skills such as empathy, warmth, cooperation, transparency, and structure (Baldwin et al., 2007; Del Re et al., 2012), the relationship between these factors and treatment outcome has not been quantified. The alliance construct is fundamentally subjective and can be developed through many different processes and styles, so identifying specific therapist behaviors that optimize treatment outcome may be even more useful than examining the alliance as a multidimensional construct. Moreover, an alternative or adjunct to using a standardized alliance measure might be to identify and independently code specific therapist behaviors (e.g., eliciting SUDs ratings and affect labeling) that promote symptom reduction and improved functioning. This approach could help mitigate the reductionist tendencies of therapeutic alliance research and concerns about the ambiguous meaning of alliance construct (Horvath, 2018). The development of a thorough and consistent coding system, implemented across settings and diagnoses, would help researchers more precisely identify effective therapeutic behaviors that promote good clinical outcomes.

Overall, the therapeutic alliance has shown promise as a predictor of favorable exposure therapy outcomes, and future research that

empirically examines mediators and moderators of the alliance-outcome relationship will lead to a better understanding of the therapeutic process. The limitations of the existing literature have created opportunities for theoretical and empirical work that identifies alliance components and therapist behaviors that are most related to positive and stable change. Continued integration of process and outcome research can shape treatment development and improve outcomes for individuals with anxiety-related disorders.

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