

# Session-to-Session Effects of Alliance Ruptures in Outpatient CBT: Within- and Between-Patient Associations

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**Objective:** The concept of alliance ruptures has had a large impact on contemporary studies of the alliance. Although this debate mainly focuses on the effect of ruptures and repairs on subsequent alliance and outcome levels within patients, to date no study has actually examined these within-patient effects. The present study fills this lacuna by examining the effect of alliance ruptures and in-session repairs on alliance ratings and symptom impairment in the subsequent session, accounting for the temporal sequence of ruptures and symptom impairment. **Method:** Ruptures and in-session repairs were rated by 1,210 patients and 147 therapists using a postsession questionnaire (PSQ-P/-T). Alliance was assessed with the Bern postsession reports and symptomatic impairment with the Hopkins symptom checklist, short form. **Results:** Patient- and therapist-reported ruptures were significant predictors of subsequent alliance and symptom impairment. While sessions in which both patient and therapist perceived a rupture were especially detrimental for next session symptom distress, they were less damaging to next session alliance levels than sessions in which either only the patient or the therapist experienced the rupture. Neither the intensity of the rupture nor the perceived level of in-session repair were associated with next-session fluctuations in symptom or alliance levels within-patient. **Conclusion:** The findings demonstrate the importance of disentangling between- and within-patient rupture and in-session repair processes to better understand the roles of rupture and repair in treatment.

### *What is the public health significance of this article?*

This study found that sessions in which patients perceive ruptures in the therapeutic alliance are associated with higher next-session symptom impairment and lower therapeutic relationship quality. Ruptures perceived by both patients and therapists were followed by even more severe next session symptom distress. However, given therapists' recognition of ruptures, next session alliance ratings declined less compared with sessions in which only patients reported a rupture.

**Keywords:** therapeutic alliance, alliance ruptures, within- and between-patient associations, process-outcome research

Therapeutic alliance, commonly defined as the agreement between patients and therapists on the tasks and goals of treatment, and the emotional bond between them, is conceived as an important element of the therapeutic process (Bordin, 1979). The relation between therapeutic alliance and treatment outcome is one of the most extensively studied associations in psychotherapy process-outcome research (e.g.,

Crits-Christoph, Gibbons, & Mukherjee, 2013). Several original studies and meta-analyses have established the widely recognized finding that patients who report a stronger alliance with their therapists show better outcomes (e.g., Flückiger, Del Re, Wampold, Symonds, & Horvath, 2012; Horvath, Del Re, Flückiger, & Symonds, 2011), even when accounting for the temporal relationship between alliance and outcome (e.g., Tasca & Lampard, 2012).

While most of these approaches assume a linear association between alliance and outcome, at the individual patient level, the alliance–outcome association may demonstrate more complex dynamics. Research on patterns of change over the course of treatment has shown that change does not evolve linearly for all patients (e.g., Hayes, Laurenceau, Feldman, Strauss, & Cardaciotto, 2007; Howard, Moras, Brill, Martinovich, & Lutz, 1996). Rather, many patients perceive sudden positive or negative shifts in their symptom distress (e.g., Lutz et al., 2013; Tang & De

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Rubeis, 1999). Similarly, it has been shown that during the course of treatment, the alliance is characterized by rupture-repair episodes for some patients and that such processes can influence treatment outcome (Safran & Muran, 2000). Ruptures in the therapeutic alliance are commonly defined as tensions or breakdowns in the collaborative relationship between patient and therapist (Safran, Muran, & Eubanks-Carter, 2011). When resolved appropriately, ruptures can positively influence the therapeutic process and are hypothesized to result in the subsequent improvement of alliance and symptom levels (Eubanks-Carter, Gorman, & Muran, 2012). Alliance ruptures are therefore ambiguous phenomena: without proper resolution, they can have damaging effects, but if appropriately repaired, they offer chances for therapeutic change. When the rupture is successfully resolved, the alliance may regain its pre-rupture level at the subsequent session or even show an increase above the pre-rupture level (Safran & Muran, 2000).

Accumulating studies focused on the rupture-resolution process have yielded promising findings, supporting the importance of such processes. First, studies reveal that rupture-repair episodes are evident in the course of treatment, at least for some patients (Stiles & Goldsmith, 2010). Second, several studies have demonstrated a significant association between ruptures or rupture-repair episodes and treatment outcome (e.g., Muran et al., 2009; Strauss et al., 2006; Tracey & Ray, 1984; for a meta-analysis, see Safran et al., 2011). However, several other studies have failed to replicate these findings and could not find an association between ruptures or rupture-repair episodes and treatment outcome (e.g., Stevens et al., 2007).

To date, studies that investigated the rupture–alliance or rupture–outcome associations typically clustered patients based on whether they showed a rupture pattern, a rupture-repair pattern, or a no-rupture pattern during the course of their treatment. These studies restricted themselves to between-patient comparisons, which test whether patients who experienced ruptures or rupture-repair episodes show better or worse treatment outcomes, or better average alliance levels, than do patients who did not show such patterns (e.g., Larsson, Falkenström, Andersson, & Holmqvist, 2018; Safran et al., 2011). However, methods have recently been introduced to psychotherapy research, which allow the disentanglement of between- from within-patient effects in longitudinally collected data. At the within-patient level, comparisons are made between different time points collected from the same patient, rather than between patients. For instance, several recent studies have investigated the alliance–outcome association on a within-patient level. These studies found that at this within-patient level, patients are less severely impaired in sessions following previous sessions in which they experienced a stronger alliance, relative to their average level (e.g., Falkenström, Granström, & Holmqvist, 2013; Zilcha-Mano, Muran, et al., 2016). For example, in a population of patients with posttraumatic stress disorder, where the between-patients effect was defined as the second session alliance effect on outcome, both the within- and between-patients alliance (specifically agreement on tasks) effects on outcome were significant (Hoffart, Øktedalen, Langkaas, & Wampold, 2013). Others, however, could not replicate this finding when additionally controlling for other process variables such as the application of cognitive–behavioral therapy (CBT) techniques (Rubel, Rosenbaum, & Lutz, 2017; Sasso, Strunk, Braun, DeRubeis, & Brotmann, 2016). For example, in a population of patients with bulimia

nervosa, when focusing on alliance at specific sessions in treatment (Weeks 2, 8, 14, and posttreatment), only the between-patients, not the within-patient alliance, predicted greater reductions in bulimic behavior (Accurso et al., 2015).

With regard to alliance ruptures, no investigations of within-patient effects have been conducted thus far. However, disentangling within-patient and between-patient rupture and repair effects is important both for statistical and conceptual reasons. Methodologically, it has been shown that it is critical to disentangle the within- and between-individuals effects in longitudinal studies, because, in many instances, it is not possible to infer the within-patient effect from the between-patients effect, because the two may differ in magnitude and even in the direction of the effects (Curran & Bauer, 2011; Wang & Maxwell, 2015). Another advantage of disentangling within- from between-patient effects is that within-patient associations become independent of any possible confounder at the patient level, ruling out the possibility that associations are a spurious phenomenon because of stable patient characteristics (e.g., personality traits; e.g., Hamaker, 2012).

Conceptually, the between- and within-patient effects may answer different questions. The between-patients rupture effect on outcome may answer the question whether a dyad that tends to display such fluctuations will on average show worse outcomes than those that display a lower tendency for such fluctuations. The within-patient effect answers the question whether a rupture in one session is expected to be associated with poorer outcome at the next session and if a resolution of these ruptures can bolster against these detrimental effects. Theoretically, it is expected that a higher between-patients tendency for ruptures results in less successful treatments, in which patients and therapists may not have the necessary level of agreement and a sufficiently positive emotional bond to make the work of treatment possible. While some treatment orientations consider rupture and repair cycles to be one of the main mechanisms of change in treatment (as in the case of alliance-focused treatment, Safran & Muran, 2000), this may not be the case in CBT. In this type of treatment, resolving ruptures when they occur is important to enable the effective use of techniques and thus partly bolster against the detrimental effects of ruptures, however repetitive rupture-repair cycles may not be adaptive. These cycles, when prevalent in CBT, may indicate that even if ruptures in a given dyad were resolved in the short term, the resolution did not last for long and other problems soon emerged. Therefore, higher incidences of rupture and rupture-repair cycles at the between-patient level may not have beneficial effects on general alliance and outcome levels in treatments such as CBT.

Although the theory of alliance rupture and repair focuses mainly on what may now be defined as a within-patient effect, to the best of our knowledge, no study to date has addressed the within-patient effect. Therefore, recommendations for practitioners on how to behave during sessions and to what extent to facilitate rupture and repair cycles—even in treatments like CBT, which are not based on repairing ruptures as a mechanism of change—await such an examination of the within-patient effect. Theoretically, it is expected that when a rupture occurs, therapists cannot proceed to use their symptom-oriented techniques effectively to bring about the desired therapeutic change, which may subsequently result in a poorer outcome (cf. Rubel et al., 2017; Schulte & Eifert, 2002). This attests to an expected ability of ruptures at the within-patient level to predict a weaker alliance and

more severe symptomatic levels at the next session. Consistently, repairs at the within-patient level are expected to bolster against the negative effects of a rupture and result in a stronger alliance and less severe symptoms at the next session compared with rupture sessions without resolutions.

When seeking to derive implications for practitioners, it is also critical to look at both the patients' and the therapists' perceptions of ruptures and their respective effects. A recent study has shown that increases in alliance ratings following ruptures were stronger, and decreases in functioning weaker, if both patients and therapists recognized the ruptures compared with if only patients perceived them (Chen, Atzil-Slonim, Bar-Kalifa, Hasson-Ohayon, & Rafaeli, 2016). These findings highlight the importance of making therapists aware of alliance ruptures with for example routine monitoring and feedback systems (e.g., Lambert, 2007; Lutz, De Jong, & Rubel, 2015). However, these results should be interpreted with caution, because the between-patients effects were not disentangled from the within-patient effects.

The aim of the present study was to examine the session-to-session within- and between-patients associations of alliance ruptures, their intensity, therapist recognition, and degree of in-session repair with subsequent alliance and symptom levels. From the literature presented above, we derived the following hypotheses:

**Hypothesis 1:** Sessions in which patients or therapists perceive a rupture are followed by worse alliance and higher symptom impairment in the subsequent session than are sessions in which the patient or the therapist do not perceive a rupture, controlling for symptom and alliance ratings in the rupture session respectively (within-patient level).

Differential effects of therapists' recognition of patient reported ruptures are expected with regard to subsequent symptom and alliance levels. These predictions result from the different timing of symptom and alliance ratings. Because symptoms are assessed before and alliance is assessed after the subsequent session (see Method section for more details), therapists have more time to take respective measures to increase the alliance after a recognized rupture session. These considerations result in the following two hypotheses:

**Hypothesis 2a:** The within-patient effects of ruptures on subsequent symptom levels are more adverse when they are large enough to be perceived by both patient and therapist compared with when only patients perceive them.

**Hypothesis 2b:** The within-patient effects of ruptures on subsequent alliance levels are less adverse when they are perceived by both patient and therapist compared with when only patients perceive them.

**Hypothesis 3:** Patients' fluctuations around their own average level of intensity are related to fluctuations in their next-session symptoms and alliance levels. In other words, the within-patient effects of patient-reported ruptures on subsequent alliance and symptom levels are less detrimental if the rupture is less intense than if it is more intense.

**Hypothesis 4:** Patients with a higher average rupture rate (more ruptures relative to the number of sessions attended) show on average lower alliance levels and higher symptom

impairment levels than do patients with a lower average rupture rate (between-patients level).

**Hypothesis 5:** Repaired ruptures at one session result in stronger alliance and lower symptom impairment levels at the subsequent session compared with ruptures, which remain unrepaired (within-patient level).

## Method

### Participants and Treatment

The study is based on a sample of 1,210 patients treated by 147 therapists at an outpatient clinic between 2009 and 2017. All therapists participated in a 3-year (full-time) or 5-year (part-time) postgraduate training program with a CBT focus and had at least 1 year of training before beginning to see patients. In this setting, therapists received feedback on their patients' ratings. Therapists' caseloads comprised 8.23 patients on average (minimum = 1; maximum = 24).

Participant flow is depicted in Figure 1. Patients were included in the analyses if they had already finished treatment, were treated by the same therapist over the entire duration of treatment, and provided data on the investigated variables at least three (at least two consecutive) sessions. Sessions for which information on one of the predictor variables or the dependent variable (i.e., next session symptoms or alliance) were missing, were excluded from the analyses. Patients in the analysis sample had at least three sessions of individual treatment with a mean treatment length of 35 sessions ( $SD = 18.26$ , range = 87). Clients were over 14 years old ( $M = 36.14$ ,  $SD = 12.80$ , range = 60), and the majority was female (62.5%). Diagnoses were based on the *Structured Clinical*

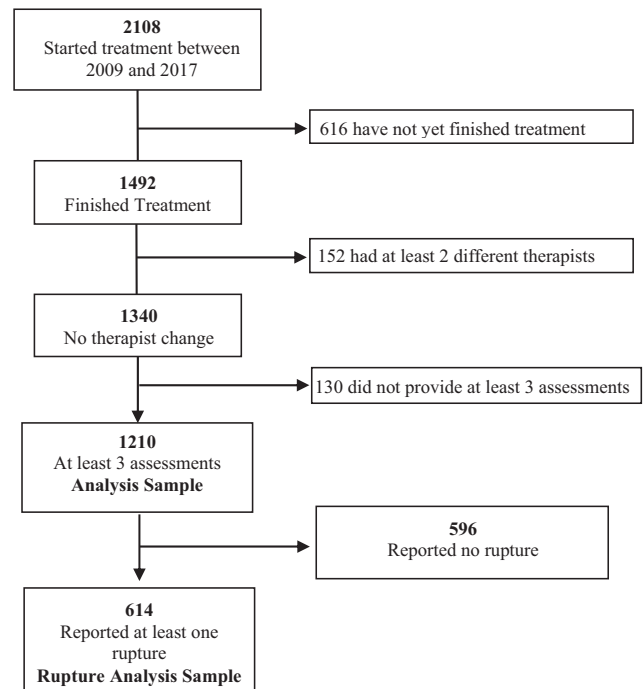


Figure 1. Patient flowchart.

*Interview for Axis I DSM-IV Disorders-Patient Edition (SCID-I; First, Spitzer, Gibbon, & Williams, 1995).* Most patients received a primary diagnosis of affective disorders (49.5%) followed by anxiety disorders (15.8%). Other diagnoses were, for example, adjustment disorder (8.3%), posttraumatic stress disorder (PTSD; 6%), somatoform disorders (3.9%), eating disorders (3.0%), and obsessive-compulsive disorder (1.9%). For the diagnosis of personality disorders, the *International Diagnostic Checklist for Personality Disorders (IDCL-P; Bronisch, Hiller, Mombour, & Zaudig, 1996)* was adopted, which identified 22 (1.8%) patients who met the criteria for a personality disorder (main or secondary diagnosis).

## Instruments

**Hopkins Symptom Checklist—short form (HSCL-11).** The HSCL-11 (Lutz, Tholen, Schürch, & Berking, 2006) is an 11-item self-report inventory for the assessment of symptomatic distress. It was developed based on the HSCL-25 (Coyno et al., 1987), which is a brief version of the Hopkins Symptom Checklist-90 (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). In the present study, the HSCL-11 was administered at the beginning of each session. Patients were asked to what degree they suffered from the respective symptom in the last 7 days. For each of the 11 symptoms, patients answered on a 4-point Likert scale ranging from 1 (“not at all”) to 4 (“extremely”). The mean of the 11 items represents the client’s level of global symptomatic distress for the preceding week. It is highly correlated with the GSI ( $r = .91$ ; Lutz et al., 2006) and has high internal consistency ( $\alpha = .92$ ; Lutz et al., 2006).

**Bern Post-Session Reports (BPSR-P/T).** The BPSR (Flückiger, Regli, Zwahlen, Hostettler, & Caspar, 2010) were designed to analyze the process of change as reported by patients (or their therapists) immediately after each session. Based on Tschacher, Ramseyer, and Grawe’s (2007) factor analysis, we chose to use the Global Alliance subscale only, which comprises four items in the patient version and three items in the therapist version. Items in both versions are answered on 7-point Likert scales ranging from  $-3$  (not at all) to  $3$  (yes, exactly). Both versions have excellent internal consistency (for patients,  $\alpha$  ranges between .87 to .92 for different sessions; for therapists,  $\alpha$  ranges between .84 to .87). The BPSR-P/T have been validated and used in several previous studies (e.g., Flückiger, Grosse Holtforth, Znoj, Caspar, & Wampold, 2013; Lutz et al., 2013).

## Assessment of Alliance Ruptures and In-Session Repairs

Alliance ruptures were assessed after each session with a single-item question from the patient and the therapist perspective: “Did you experience any tension, any misunderstanding, conflict or disagreement in the relationship with your patient/therapist?” Both items are answered on a 5-point Likert scale ranging from 1 (“not at all”) to 5 (“constantly”), reflecting the subjectively perceived intensity of a rupture. Following the recommendations provided by Muran et al. (2009), a rupture was defined as any rating higher than 1 on the scale.

If patients responded to the rupture item above 1, they were additionally asked to what extent they felt that this rupture had

been repaired during the session: “To what degree do you feel this problem was resolved by the end of the session?” Patients were also asked to answer this question on a 5-point Likert scale ranging from 1 (“not at all”) to 5 (“very”).

## Procedure

Before treatment began, patients were diagnosed based on the SCID-I and IDCL-P. Interviews were conducted by intensively trained independent clinicians. These interviews were videotaped, interviews and diagnoses were discussed in expert consensus teams that included four senior clinicians, and final diagnoses were determined by consensual agreement of at least 75% of the team members.

## Data Analytic Strategy

Adjusting for the hierarchical structure of the data (sessions nested within patients, nested within therapists), we applied three-level longitudinal multilevel modeling, relaxing the assumption of independence and thus receiving unbiased estimates (e.g., Raudenbush & Bryk, 2002). Assuring a proper disaggregation of within- and between-patient effects, continuous predictors were person-mean centered in accordance with the recommendations provided by Wang and Maxwell (2015). Following Wang and Maxwell (2015), when using continuous variables, studies disentangled the within- and between-patients alliance effect on outcome by centering the patient-reported alliance at the individual patient’s mean, and using the individual patient’s mean for patient-reported alliance for the between-patients effects (e.g., Accurso et al., 2015). For the rupture variable (a binary variable), separation of within- and between-patients variability was achieved in a similar way. The between-patient rupture variable was created by calculating the average number of ruptures a patient/therapist reported relative to the number of sessions attended by that patient. The within-patient variable was created by centering the binary rupture variable at the person specific average number of ruptures per session. For example, if a patient reported a rupture in every 10th session, their between-patient rupture variable equals 0.1 (e.g., three ruptures in 30 sessions). The corresponding within-patient rupture variable for this patient would be  $0 - 0.1 = -0.1$  in sessions in which no rupture was reported and  $1 - 0.1 = 0.9$  in sessions in which a rupture was reported. It is important that this parameterization resulted in zero correlations between the within- and between-patient effects. To control for autoregression, a lagged version of the dependent variable was included as a predictor in all models, adjusting for the effect of the previous session value of the dependent variable. In addition, the residuals on Level 1 were modeled as AR(1), taking into account that sessions, which are closer together, should be more highly correlated than sessions farther apart. The general equation for the applied three-level multilevel model was:

$$HSCL_{s+1pt} = (\gamma_{000} + u_{00t} + r_{0ct}) + \gamma_{100} \times HSCL_{spt} + \gamma_{200} \times WP\_RUPTURE_{spt} + \gamma_{010} \times BP\_RUPTURE_{pt} + e_{spt} \quad (1)$$

The symptom rating for session  $s + 1$  of patient  $p$ , who was treated by therapist  $t$  (i.e.,  $HSCL_{s+1pt}$ ) was predicted by this patient’s

preceding symptom impairment in session  $s$  (i.e.,  $\gamma_{100} \times \text{HSCL}_{spt}$ ), this patient's within-patient rupture rating in session  $s$  (i.e.,  $\gamma_{200} \times \text{WP\_RUPTURE}_{spt}$ ), this patient's between-patient rupture score (i.e.,  $\gamma_{010} \times \text{BP\_RUPTURE}_{pt}$ ), as well as a session-specific error term (i.e.,  $e_{spt}$ ). In addition, the random terms  $u_{00r}$  and  $r_{0cr}$  control for the nested structure of the data (sessions nested within patients, nested within therapists). In the first model (Model 1) only patient-reported ruptures were taken into account. Thus, Model 1 estimated the effect of sessions in which patients perceived a rupture on symptom impairment, without the therapists' perspective in the model (Hypothesis 1).

To examine the impact of sessions in which therapists experienced ruptures on symptom impairment at the subsequent session, we estimated a similar model, including the within- and between-patient variables of therapist-reported ruptures instead of patient-reported ruptures (cf. Equation 1). Thus, Model 2 estimated the effect of sessions in which therapists perceived a rupture on symptom impairment, without the patients' perspective in the model (Hypothesis 2).

Next, we estimated a model (Model 3) including both perspectives (*Rupture-P* and *Rupture-T*) as well as their interaction (*Rupture-P\*T*). Thus, Model 3 allows the estimation of the effect of ruptures experienced only by the patient, only by the therapist, or by both (Hypothesis 2).

In the subset of sessions in which patients reported a rupture (Figure 1; rupture analysis sample), the association of the intensity of ruptures (1–5, “not at all” to “constantly” experienced tension, misunderstanding, conflict, or disagreement with therapist, rated by the patient) with symptom impairment at the subsequent session (Hypothesis 3) was estimated (Model 4), including the session-specific rupture intensity (within-patient level), and the mean rupture intensity (between-patient level; Hypothesis 4) in the multilevel models. Similarly, the impact of the degree of repair (1–5, “not at all” to “very,” felt this problem was resolved by the end of the session, rated by the patient) on symptom impairment (Hypothesis 5) was estimated by including the degree of in-session repair instead of the rupture intensity (Model 5). Following this structure, we also examined the associations of sessions in which patients and/or therapists experienced ruptures, as well as the association of rupture intensity and degree of in-session repair with next session therapeutic alliance ratings (Models 6–10).

All analyses were conducted with the free software environment R version 3.1.1 (R Development Core Team, 2013). The multilevel models were estimated using the R package nlme (Pinheiro, Bates, DebRoy, Sarkar, & R. Core Team, 2016). Standardized estimates for all models were obtained by standardizing the raw scores prior to running the model (Baldwin, Imel, Braithwaite, & Atkins, 2014). Table 1 shows the means and SDs at which the respective variables were standardized.

## Results

### Descriptive Statistics

Table 2 shows the number of rupture and no-rupture sessions. About half of the patients experienced ruptures and therapists reported that 83.9% of the patients had at least one rupture during the course of treatment. Patients reported ruptures in about 8.5% of sessions, whereas therapists reported ruptures in 34.4% of sessions across their caseload. Table 3 shows the frequencies of the different rupture- and repair categories, according to the 5-point Likert scale (1–5: “not at all” to “constantly” experienced tension, misunderstanding, conflict or disagreement with therapist/patient; “very” felt this problem was resolved by the end of the session). Out of 38,994 sessions in total, only 3.5% were rated by patients with a rupture score of “3” or higher. From the therapists' perspective, 6.3% of sessions were rated with a rupture score of “3” or higher. Out of 3,320 patient-reported rupture sessions, 41.5% were rated with a repair score of “3” or higher.

### Within- and Between-Patient Associations of Ruptures With Session-to-Session Symptom Impairment

An empty model revealed that 44.23% of the total variation in symptom ratings was session specific, and 55.76% was because of differences between patients. There was no variation in session-to-session symptom scores that was attributable to differences between therapists.

Table 4 displays the within- and between-patients effects of sessions in which patients and/or therapists experienced ruptures on symptom impairment in subsequent sessions. Sessions in which patients experienced a rupture differed significantly from sessions

Table 1  
Descriptive Statistics: Means and SDs at Which the Respective Scores Were Standardized

Descriptives	Raw scores, average $M$ (average $SD$ )	Between-patient scores, $M$ ( $SD$ )	Within-patient scores, average $M$ (average $SD$ )
All sessions			
Symptoms <sub><math>t</math></sub>	1.85 (.32)	—	—
Symptoms <sub><math>t+1</math></sub>	1.84 (.32)	—	—
Alliance <sub><math>t</math></sub>	2.47 (.41)	—	—
Alliance <sub><math>t+1</math></sub>	2.49 (.37)	—	—
Rupture-P	—	.11 (.21)	0 (.71)
Rupture-T	—	.37 (.35)	0 (.71)
Rupture sessions			
Rupture-degree	—	2.71 (.81)	0 (.45)
Repair-degree	—	2.22 (1.09)	0 (.72)

Note. Means and SDs of the raw and within-patient scores were calculated separately for each patient and averaged.

Table 2  
*Descriptives, Number of Rupture, and No-Rupture Sessions*

Descriptives	Patient ratings		Therapist ratings	
	<i>N</i>	%	<i>N</i>	%
<b>Patients</b>				
Total	1,210	100	1,210	100
No rupture	596	49.3	195	16.1
Rupture	614	50.7	1,015	83.9
<b>Sessions</b>				
Total	38,994	100	38,994	100
No rupture	35,674	91.5	25,587	65.6
Rupture	3,320	8.5	13,407	34.4

in which patients did not experience any rupture, without the therapists' perspective in the model (Model 1). That is, rupture-sessions predicted higher symptom impairment in the subsequent session compared with no-rupture sessions (within-patient effect). Furthermore, the average number of ruptures patients experienced per session was significantly associated with average symptom change from session to session: the more ruptures per session, the higher the average symptom impairment while controlling for current impairment (between-patient effect).

Sessions in which therapists experienced a rupture also differed significantly in their impact of patients' symptom impairment from sessions in which therapists did not experience any rupture, without the patients' perspective in the model (Model 2). The standardized beta estimate was very similar to the one observed for the impact of patient-reported ruptures. Furthermore, the average number of ruptures therapists experienced per session was also associated with average symptom change from session to session. However, the beta estimate was only half the size of the between-patient effect of patient-reported ruptures (0.05 vs. 0.10). Model 3 included both perspectives (patients and therapists) as well as their interaction. The effects of both patient- and therapist-reported ruptures remain roughly the same when included in one model. As such, patient- and therapist-reported ruptures exhibit largely independent effects on patients symptom impairment. The interaction terms (within-patient: Rupture-P\*T and between-patient: Rupture-P\*T) were not significant.

### Associations of Rupture Intensity With Session-to-Session Symptom Impairment

Table 5 displays the effects of the ruptures' intensity and degree of repairs on symptom impairment in the subsequent session. As stated above, these analyses were conducted with the subset of sessions in which a rupture was reported by the patient. The intensity of the rupture was not associated with subsequent symptoms; neither on the within- nor the between-patient level (Model 4; rupture analyses sample).

### Associations of Degree of In-Session Repairs With Session-to-Session Symptom Impairment

The degree of in-session repair was significantly associated to next session symptom scores on the between-patient level. That is, patients with higher average repair ratings showed higher average

next-session symptom impairment (Model 5; rupture analyses sample).<sup>1</sup>

### Within- and Between-Patient Associations of Ruptures With Session-to-Session Alliance

An empty model revealed that 44.90% of the total variation in alliance ratings was session specific and 55.04% was because of differences between patients. There was no variation in session-to-session alliance scores that was attributable to differences between therapists.

Table 6 displays the within- and between-patients effects of sessions in which patients and/or therapists experienced ruptures on alliance ratings in subsequent sessions. Sessions in which patients experienced a rupture differed significantly from sessions in which patients did not experience any rupture, without the therapists' perspective in the model (Model 6). That is, rupture-sessions were followed by lower alliance ratings in the subsequent session (within-patient effect) compared with no-rupture sessions. Furthermore, the average number of ruptures patients experienced per session was significantly associated with the average alliance ratings: the more ruptures per session, the lower the average alliance ratings while controlling for previous session alliance levels (between-patient effect).

Sessions in which therapists experienced a rupture were also followed by lower alliance ratings in the subsequent session without the patients perspective in the model (within-patient effect; Model 7). Furthermore, the average number of ruptures per session experienced by therapists was significantly associated with the average alliance ratings: the more ruptures per session, the lower the average next session alliance ratings, while controlling for alliance in the current session (between-patient effect). Again, including both perspectives (patients and therapists) and their interaction in one model resulted in significant effects of ruptures perceived by patients or therapists of a similar size as in Models 6 and 7 (Model 8). That is, sessions in which only patients or only therapists reported a rupture were significantly different from nonrupture sessions, leading to lower average alliance ratings in the following session (Figure 2). Both interaction terms (within-patient: Rupture-P\*T and between-patient: Rupture-P\*T) showed significant associations with next session alliance ratings. However, while the within-patient interaction showed a positive coefficient, the between-patient interaction was negative. That is, on a between-patient level, alliance ratings are lower if both patients and therapists report more ruptures over the course of treatment. However, on a within-patient level, we observe that it is more detrimental when only patients or only therapists report a rupture than when both recognize the rupture (Figure 2).

<sup>1</sup> In an attempt to examine whether this counterintuitive association between repairs and symptom distress is an artifact of the negative effect of being a high rupture frequency dyad, we conducted an exploratory analysis including the average number of ruptures per dyad (i.e., the between-patient patient reported rupture variable) as an additional covariate in Model 5. Controlling for the number of ruptures per dyad in Model 5 did not substantially change the size or direction of the association between between-patient repair degree and symptom distress ( $\beta = 0.07$ ;  $SE = 0.03$ ;  $p = .03$ ).

Table 3

*Descriptives, Rupture Intensity (Rupture Rating; Patient and Therapist Rating in How Far They Experienced Tension, Misunderstanding, Conflict, or Disagreement With Therapist/Patient) and Degree of Repairs (Repair Rating; Patient Rating in How Far They Felt This Problem Was Resolved by the End of the Session—Only Assessed if Patients Rated the Rupture Item “2” or Higher)*

Rupture rating	Patient		Therapist		Repair rating	Patient	
	N	%	N	%		N	%
Total number of sessions	38,994	100	38,994	100	Number of rupture sessions	3,320	100
1 (“not at all”)	35,674	91.5	25,587	65.6	1 (“not at all”)	1,628	49.0
2	1,955	5.0	10,957	28.1	2	317	9.5
3	768	2.0	2,177	5.6	3	740	22.3
4	285	.7	234	.6	4	364	11
5 (“constantly”)	312	.8	39	.1	5 (“very”)	271	8.2

### Associations of Rupture Intensity With Session-to-Session Alliance

As stated previously, analyses regarding the rupture intensity were conducted with the subset of sessions in which a rupture was reported by the patient. Table 5 displays the effects of the rupture intensity and degree of repairs on alliance ratings in subsequent sessions. Neither the session-specific (within-patient effect) nor the patient-specific rupture intensity (between-patient effect) showed significant effects on next-session alliance ratings (Model 9; rupture analyses sample).

### Associations of Degree of In-Session Repair With Session-to-Session Alliance

The degree of in-session repair was not significantly associated with alliance ratings neither on the within- nor the between-patient level (Model 10; rupture analyses sample).<sup>2</sup>

## Discussion

The aim of the present study was to investigate the session-to-session effects of alliance ruptures and in-session repairs on patients' symptom impairment and alliance quality. This study extends previous investigations on the effect of rupture and repair episodes by separating within- from between-patients effects. The frequencies of reported ruptures were different for patients and therapists: about half the patients experienced ruptures, whereas therapists reported that 83.9% of their patients had at least one rupture during the course of treatment. These frequencies are comparable to those reported in previous studies (e.g., Safran et al., 2011). Our findings may reflect the therapists' higher levels of caution when reporting on processes occurring in the therapeutic relationship, which may manifest in a tendency to report both poorer alliance and more frequent ruptures than their patients do (e.g., Atzil-Slonim et al., 2015, for a meta-analysis, see Tryon, Blackwell, & Hammel, 2007).

Consistent with the theoretical literature and confirming our hypotheses, we found a within-patient effect of patient-reported ruptures on subsequent alliance and symptom levels: sessions in which patients experienced a rupture were followed by lower alliance ratings and higher symptoms at the subsequent session than were sessions in which patients did not experience a rupture. The between-patients level effect mirrored the findings at the

within-patient level: dyads in which the patient showed a higher tendency of reporting ruptures throughout treatment also tended to have overall poorer alliance and symptom ratings, controlling for previous session levels.

The findings regarding the adverse effect of patient-rated ruptures on subsequent alliance and symptom levels are consistent with the theoretical literature on rupture and repair (Safran & Muran, 2000), but contradict results reported by Chen et al. (2016) for the session-to-session effects of alliance ruptures. Chen et al. (2016) did not find a significant main effect of patient-reported alliance ruptures on next session functioning, and even found a positive effect on alliance quality. This difference may be explained by the fact that these authors did not separate within- from between-patients effects, and therefore the potential within-patient effect may not have been detected because of the potential influence of between-patients variance. This interpretation is consistent with repeated calls from the methodological literature to disentangle within- and between-patients associations (Curran & Bauer, 2011; Wang & Maxwell, 2015). Another important departure from Chen et al. (2016) is that the present study focuses on direct reports of ruptures, whereas Chen et al. inferred ruptures indirectly, from alliance reports. Thus, Chen et al. focused on between-sessions ruptures only, whereas our analyses focused on the direct report of both between- and within-session ruptures. Chen et al. themselves argued that the positive association they found between ruptures and next session alliance ratings may have been a result of regression to the mean, and therefore an artifact of the applied definition of alliance ruptures. The difference between our method and the one used by Chen et al. could explain why our results contradict

<sup>2</sup> We also tested the ability of ruptures and in-session repairs to predict treatment outcome in two-level multilevel models (patients nested within therapists). Consistent with previous studies and the results reported for the between-patient associations, separate analyses revealed that the average number of patient-reported ruptures per session ( $\beta = 0.19$ ;  $SE = 0.02$ ;  $p < .001$ ) and therapist-reported ruptures per session ( $\beta = 0.06$ ;  $SE = 0.02$ ;  $p < .001$ ) were significantly associated with higher symptom impairment at the end of the treatment when controlling for differences in intake impairment levels. In the subsample of patients reporting at least one rupture, again patients who perceive these ruptures as more strongly repaired within the same session, reported higher posttreatment symptom scores controlled for pretreatment symptoms ( $\beta = 0.17$ ;  $SE = 0.04$ ;  $p < .001$ ). These associations mirror our findings regarding between-patient rupture and in-session repair effects on symptoms.

Table 4  
Impact of Ruptures, Rated by Patients and/or Therapists in a Session ( $t$ ), on Next Session Symptoms ( $t + 1$ )

Parameter estimates	Model 1		Model 2		Model 3	
	Standard estimate (SE)	$t$	Standard estimate (SE)	$t$	Standard estimate (SE)	$t$
Fixed effects						
Intercept	.00 (.01)	.39	.00 (.01)	.11	.00 (.01)	.29
Symptoms <sub><math>t</math></sub>	.74 (.00)	212.26***	.74 (.00)	211.18***	.74 (.00)	210.48***
WP: Rupture-P <sub><math>t</math></sub>	.06 (.02)	2.57*	—	—	.04 (.02)	2.04*
BP: Rupture-P	.10 (.01)	7.76***	—	—	.09 (.01)	6.63***
WP: Rupture-T <sub><math>t</math></sub>	—	—	.04 (.01)	2.81**	.04 (.01)	2.54*
BP: Rupture-T	—	—	.05 (.01)	3.85***	.03 (.01)	2.69**
WP: Rupture-P*T	—	—	—	—	.07 (.06)	1.23
BP: Rupture-P*T	—	—	—	—	.01 (.01)	.53
Random effects						
Level 1 (sessions)	1.01		1.01		1.01	
Level 2 (patient)	.39		.40		.39	
Level 3 (therapists)	.00		.00		.00	

Note. WP = within-patient; BP = between-patient; Rupture-P = patient-reported rupture; Rupture-T = therapist-reported rupture; Rupture-P\*T = patient- and therapist-reported rupture.  
\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

those reported by Chen and colleagues. Future research is needed to systematically compare these different approaches.

The present findings demonstrate that only the mere presence of a patient-reported rupture affects subsequent symptoms and alliance ratings, but not the magnitude of the rupture. Therefore, our results suggest that it makes no difference for symptoms and alliance levels at the next session whether the rupture is scored a 2 or higher, because the mere existence of a rupture is what matters.

Therapist- and patient-reported ruptures showed similar within and between-patients associations with symptom severity, however the effects were somewhat smaller in therapist- than in patient-reported ruptures. The stronger patient perspective is consistent with a broad body of literature in which the actor-partner

interdependence model (APIM; Kashy & Kenny, 2000) is used to investigate the association of patient-rated alliance (*actor effect*) and therapist-rated alliance (*partner effect*) with patient-rated symptoms (e.g., Gelso et al., 2012; Kivlighan, Gelso, Ain, Hummel, & Markin, 2015; Kivlighan, Hill, Gelso, & Baumann, 2016; Kivlighan, Marmarosh, & Hilsenroth, 2014; Markin, Kivlighan, Gelso, Hummel, & Spiegel, 2014; Zilcha-Mano et al., 2016). In most of these studies, actor effects were stronger than partner effects. As we measured symptoms and alliance using patient self-reports, patient-reported rupture associations can be regarded as an actor effect, and therapist-reported rupture associations as a partner effect. Therefore, our findings are consistent with the broad literature on the effects of patient- and therapist-rated changes in alliance on patient-rated symptom severity.

Table 5  
Impact of Rupture Intensity and Degree of Repair in a Session ( $t$ ), on Next Sessions Symptoms ( $t + 1$ ) or Alliance ( $t + 1$ ) in the Subset of Rupture Sessions

Parameter estimates	Model 4 (AV: Symptoms <sub><math>t+1</math></sub> )		Model 5 (AV: Symptoms <sub><math>t+1</math></sub> )		Model 9 (AV: Alliance <sub><math>t+1</math></sub> )		Model 10 (AV: Alliance <sub><math>t+1</math></sub> )	
	Standard estimate (SE)	$t$	Standard estimate (SE)	$t$	Standard estimate (SE)	$t$	Standard estimate (SE)	$t$
Fixed effects								
Intercept	.15 (.03)	4.66***	.16 (.03)	5.25***	-.36 (.07)	-5.48***	-.37 (.06)	-5.61***
Symptoms <sub><math>t</math></sub>	.73 (.01)	58.64***	.73 (.01)	58.06***	—	—	—	—
Alliance <sub><math>t</math></sub>	—	—	—	—	.49 (.02)	30.78***	.49 (.02)	30.95***
WP: Rupture degree <sub><math>t</math></sub>	.01 (.01)	.96	—	—	.04 (.02)	1.75	—	—
BP: Rupture degree	.05 (.03)	1.49	—	—	.10 (.06)	1.60	—	—
WP: Repair degree <sub><math>t</math></sub>	—	—	.01 (.02)	.71	—	—	.00 (.02)	.94
BP: Repair degree	—	—	.09 (.03)	2.94*	—	—	-.05 (.06)	.44
Random effects								
Level 1 (sessions)	1.03		1.03		1.66		1.66	
Level 2 (patient)	.49		.49		1.11		1.13	
Level 3 (therapists)	.00		.00		.00		.00	

Note. WP = within-patient; BP = between-patient. Only sessions in which patients reported a rupture were considered in this analysis.  
\*  $p < .05$ . \*\*\*  $p < .001$ .



Table 6  
Impact of Ruptures, Rated by Patients and/or Therapists in a Session ( $t$ ), on Next Session Alliance ( $t + 1$ )

Parameter estimates	Model 6		Model 7		Model 8	
	Standard estimate (SE)	$t$	Standard estimate (SE)	$t$	Standard estimate (SE)	$t$
<b>Fixed effects</b>						
Intercept	.01 (.02)	.70	.02 (.02)	.90	.03 (.02)	1.50
Alliance <sub><math>t</math></sub>	.63 (.00)	146.98***	.63(.00)	150.60***	.63 (.00)	145.03***
WP: Rupture-P <sub><math>t</math></sub>	-.10 (.03)	-3.83***	—	—	-.11 (.03)	-4.08***
BP: Rupture-P	-.32 (.02)	-17.64***	—	—	-.27 (.02)	-14.09***
WP: Rupture-T <sub><math>t</math></sub>	—	—	-.06 (.02)	-4.04***	-.06 (.02)	-3.95**
BP: Rupture-T	—	—	-.18 (.02)	-8.51***	-.10 (.02)	-5.81**
WP: Rupture-P*T	—	—	—	—	.20 (.07)	2.85**
BP: Rupture-P*T	—	—	—	—	-.09 (.02)	-5.25***
<b>Random effects</b>						
Level 1 (sessions)	1.21		1.21		1.21	
Level 2 (patient)	.55		.60		.54	
Level 3 (therapists)	.00		.13		.07	

Note. WP= within-patient; BP = between-patient; Rupture-P = patient-reported rupture; Rupture-T = therapist-reported rupture; Rupture-P\*T = patient- and therapist- reported rupture.

\*\*  $p < .01$ . \*\*\*  $p < .001$ .

Although there was no interaction between the effects of patient- and therapist-reported ruptures on session-to-session symptoms, significant interactions were found for session-to-session alliance ratings. The different findings for the different dependent variables (alliance vs. symptoms) may be interpreted with reference to the time in which the two dependent variables were assessed. A rupture in session  $t$  is measured directly after this session, while next session symptoms are measured directly before the next session ( $t + 1$ ). Thus, the interdependence between patient and therapist may have greater effect on the alliance rating, because a longer time has elapsed to reveal its consequences. For example, therapists can use session  $t + 1$  to adapt their treatment in a way that helps improve the therapeutic relationship. The association of the interaction between patient- and therapist-reported ruptures with subsequent alliance levels was positive at

the within-patient level, but negative at the between-patients level. The positive association of the interaction at the within-patient level suggests that the within-patient association of patient-reported ruptures with next-session alliance is less detrimental when therapists also recognize a rupture in that session. This finding supports the notion that it is important for therapists to be aware of problems their patients perceive in the alliance to be able to handle alliance ruptures appropriately (e.g., Atzil-Slonim et al., 2015; Chen et al., 2016; Rubel, Bar-Kalifa, Atzil-Slonim, Schmidt, & Lutz, in press; Zilcha-Mano, Snyder, & Silberschatz, 2017). If therapists also recognize problems in the alliance, they seem to be better able to resolve them in the next session, as attested by a better patient alliance rating in that session. This effect is consistent with theoretical conceptualizations of the therapist's role in handling alliance ruptures (Safran & Muran, 2000), which can be

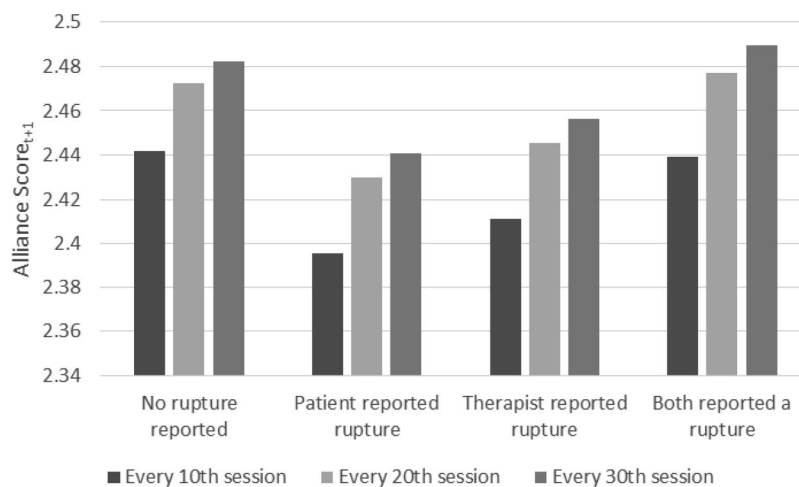


Figure 2. Average alliance scores after sessions with an average alliance rating in which no rupture was reported, only the patient reported a rupture, only the therapist reported a rupture, or both reported a rupture for dyads in which patients and therapists reported a rupture every 10th, 20th, or 30th session on average.

most precisely conceptualized as within-patient effects. At the between-patients level, however, we did not find such a positive interaction effect on subsequent alliance. In contrast, we found a negative interaction effect at the between patient level, indicating that a higher rate of patient-reported ruptures is even more detrimental if both therapists and patients report a higher rate of ruptures. These findings at the between-patients level are consistent with the expectation that when a rupture is so pronounced that it cannot go undetected by either patient or therapist, it has clear detrimental effects on alliance at the treatment level. This intriguing finding of opposite effects at the within- and between-patients levels may have gone undetected if we had not disentangled the within- and between-patients effects. Thus, this finding underscores the importance of a proper disaggregation, as effects may otherwise go unnoticed or be misinterpreted (e.g., Hoffman & Stawski, 2009).

In contrast to our hypotheses, we found the degree of in-session repair to be not associated with next session alliance neither at the within- nor between-patients level. With regard to symptoms, we surprisingly even found a counterintuitive association with patient-specific repair degree on the between-patient level. Specifically, in the subset of rupture sessions, patients who experienced ruptures on average as more strongly repaired reported higher symptom impairment. It is important to note that this association was not found on the within-patient level. Thus, this finding should be interpreted with caution. It is likely, that stable patient or dyad characteristics that are associated with both higher symptom impairment and experiencing ruptures as more repaired could explain this contradictory finding on the between-patient level. For example, the association between a higher degree of repaired ruptures and higher symptoms could be an artifact of the above described negative effect of being in a high rupture frequency dyad (between-patient rupture effect). More rupture sessions are likely connected to a higher probability to perceive ruptures as more resolved on average. Patients who perceive ruptures as less resolved likely quit treatment earlier than patients in dyads characterized by resolved ruptures. This is also supported by a positive correlation between the average rupture rate per dyad (i.e., the between-patient rupture variable) and the between-patient degree of repair ( $r = .40$ ;  $p < .01$ ). Therefore, we tested in an exploratory analysis whether the counterintuitive association of better repaired ruptures and more symptom distress is an artifact of better repaired ruptures being more likely present in dyads with a higher rupture frequency (see footnote 1). Although the statistical control for differences in the average rupture rate did slightly reduce the association between repair degree and symptom distress, it did not change the direction or significance of this association. As a consequence, this counterintuitive finding cannot only be explained by differences in the average rupture rate per dyad.

The finding that the degree of in-session repairs was not associated with neither symptoms nor alliance in the subsequent session (within-patient effect) must be replicated before their implications can be fully acknowledged. If confirmed, however, especially using external observer ratings of rupture and repair episodes (Eubanks, Muran, & Safran, 2015), it may substantially contribute to the literature. According to one explanation, the cycles of rupture and repair episodes are beneficial in treatments that work on facilitating such cycles and leveraging their effect, such as alliance-focused treatment (Safran & Muran, 2000). In

treatments like CBT, however, treatment success is expected to be the result of the successful implementation of effective CBT techniques, and not of working through rupture-repair cycles. Indeed, high frequencies of rupture-resolution cycles may indicate that even if ruptures were resolved in the short term, the resolution did not last long, and other problems soon emerged. This possible explanation should be examined directly in future studies, and the differential effects of rupture and repair cycles should be investigated in several treatment orientations.

Another possible post hoc explanation for our findings that rupture-repairs did not predict next-session alliance and symptom levels has to do with the time frame that characterized the present study. We used current session rupture and repair episodes to predict subsequent session outcome, however some ruptures require more than one session to be repaired. It is reasonable to suggest that some profound ruptures were repaired only at the next session, or even after that, and affected outcome only at a session separated from the rupture by at least two weeks (Zilcha-Mano & Errázuriz, 2017). Another possibility is that alliance rupture and repair cycles may be adaptive for patients with more severe interpersonal problems, but maladaptive for others (Zilcha-Mano & Errázuriz, 2017).

### Limitations and Future Directions

Although the present study has many merits, including session-to-session assessments and the use of statistical methods to disentangle within- and between-patient effect, it also has several limitations. One limitation of the present study is the assessment of alliance ruptures and in-session repairs using a single-item self-report measure. Given the low number of ruptures they report, patients seem rather hesitant to record a score higher than 1 in the direct question about tensions in the therapeutic alliance. Therapists, by contrast, may be overly skeptical about alliance levels (e.g., Atzil-Slonim et al., 2015) and as a result may tend to report a high number of ruptures. It would be instructive to investigate the session-to-session effects of observer-rated rupture and repair episodes. Video-based rupture-repair ratings, however, are typically conducted in real-time, resulting in one hour of treatment requiring at least one hour of rating. Therefore, it would be time-consuming to rate the complete courses of treatment needed for session-to-session analyses, such as those conducted in the present study.

An important departure from past research is the treatment of rupture-repair episodes as within-session phenomena. This definition of rupture and repairs reduces comparability with previous research. Most studies that focused on rupture and repair episodes have done so by treating these processes as a between-sessions phenomenon, seeking to determine whether a drop in the alliance in one session (i.e., a rupture) is reversed in subsequent sessions (cf. Safran et al., 2011). It is important to recognize that the approach chosen in the current study results in an entirely different definition of repair (in-session repair). This definition implies that ruptures can be resolved in the same session in which they occur. This approach makes it possible to pinpoint the occurrence of rupture-resolution episodes with greater precision.

It is also important to note that repairs were only rated by the patient and not by the therapist. Patient ratings may be more prone to social desirability bias than those of therapists or observers. Consequently, patients may report they perceive a rupture to be

repaired even if they do not feel this way. Examinations of therapist repair ratings are warranted in future research in order to quantify the potential bias of patient ratings.

All therapists in the present study received routine feedback on their patients' rupture ratings after each session. As a consequence, therapists' rupture ratings at subsequent sessions may be biased by their knowledge of how their patients perceived the alliance at the previous session. However, it is important to note the timing of the feedback and assessments. Therapists received the feedback on their patients' ratings only after they had already rated the alliance for a given session themselves, making them unaware of their patients' ratings at the time they provided their own. Many recent studies investigating therapists' awareness of the alliance-outcome association collected data in settings in which therapists received feedback on their patients' symptom change, alliance ratings, or both (Atzil-Slonim et al., 2015; Rubel et al., in press; Zilcha-Mano & Errázuriz, 2015). Although in previous studies that randomized patients to feedback conditions, feedback did not have an effect on episodes of early rupture, on their likelihood of being resolved, or on their effect on outcome (Zilcha-Mano & Errázuriz, 2017), feedback on the alliance did affect the strength of the alliance-outcome association (Zilcha-Mano & Errázuriz, 2015). Therefore, caution should be exercised when generalizing the findings to settings that do not include feedback. Future studies that include randomization to groups of therapists who are or are not provided with feedback on their patients' rupture ratings can test whether this feedback increases the therapists' recognition of ruptures, and the effects of the therapists' level of recognition on symptom impairment.

Furthermore, because our analyses did not take into account the timing of ruptures, our models are based on the implicit assumption that the effects of ruptures on subsequent symptoms and alliance ratings are independent of the time point at which they occurred during the course of treatment. Given, for example, the importance of the early treatment phase, however, it may well be that ruptures have differential effects if they occur early rather than late in treatment (e.g., Lutz et al., 2014; Rubel, Lutz, & Schulte, 2015).

It is important to recognize that treatments were not manualized and no treatment fidelity ratings were conducted. As a consequence, no information is available on the adherence of the therapists to cognitive-behavioral techniques. Therefore, no conclusions can be drawn regarding the CBT specificity of the results and the potentially moderating role of therapists' competence in using these techniques. Replication of the results in better controlled settings is warranted. Adherence to a treatment manual and competence in applying the respective techniques may be moderator variables of interest, which should be investigated further. Finally, the within-patient effects reported in this study should not be interpreted as causal. Although some threads to causality have been addressed by disaggregating within- and between-patients variability, others have not. By predicting symptom scores based on preceding process scores, an appropriate time line for the investigation of causal effects has been established. In addition, as a result of the disaggregation, we can rule out the possibility that the within-patient association between the investigated process variables and symptom improvement is merely a result of some stable patient characteristic that caused both change in the process and in the symptom variables (e.g., Sasso et al., 2016). However,

because we did not control for other time-varying, potentially confounding variables, interpretations regarding causal influences should be made with caution (e.g., Falkenström, Ekeblad, & Holmqvist, 2016).

## Conclusion

Notwithstanding these limitations and cautionary remarks, the present study makes an important contribution to the literature. It is the first to investigate the within- and between-patients effects of alliance ruptures on subsequent alliance quality and symptom distress in a large naturalistic sample. Our results lend support to the influence of ruptures in the therapeutic alliance on the future course of treatment. The study also stresses the importance of disentangling within- and between-patients effects of ruptures on the subsequent process of treatment, as these effects can go in opposite directions. Finally, the study stresses the importance of therapists' awareness of ruptures reported by their patients, and encourages providing therapists with feedback on routinely collected patient ratings of ruptures in the alliance (e.g., Lutz, DeJong, & Rubel, 2015).

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