EXPLORING THE EFFECTIVENESS OF RUPTURE-REPAIR INTERVENTIONS IN DIALECTICAL BEHAVIOUR THERAPY FOR BORDERLINE PERSONALITY DISORDER

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Abstract

Alliance rupture-repair is a process which re-establishes therapeutic collaboration and an emotional bond following a rupture. However, limited research has examined how therapeutic dyads navigate rupture-repair in-session when treating individuals with borderline personality disorder (BPD), for whom ruptures can be frequent and intense. This study examined the relationships between alliance quality, "working together," and rupture-repair processes in an early session of dialectical behaviour therapy for BPD. In a subsample of 60 dyads from the FASTER study, observers coded session 6 using the Working Alliance Inventory-Observer (WAI-O) and Rupture Resolution Rating System (3RS). Patients completed the Working Alliance Inventory-Short (WAI-S) after their initial four therapy sessions. Multilevel models were estimated. Findings revealed in-session alliance quality mutually informed the degree of "working together" and rupture-repair. Both therapists and patients made efforts to repair rupture markers. "Exploring the rupture" was a particularly effective repair strategy when the dyad "worked well together."

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Exploring the Effectiveness of Rupture-Repair Interventions in Dialectical Behaviour Therapy for Borderline Personality Disorder

Borderline personality disorder (BPD) is characterized by a pervasive pattern of unstable self-image, impulsivity, interpersonal dysfunction, and emotional lability (McMain et al., 2025). A central feature of BPD is emotion dysregulation, which refers to the tendency to experience and inability to regulate intense, prolonged, and often highly aversive emotions across many contexts (Cicchetti et al., 1995). Individuals with BPD are also particularly vulnerable to interpersonal stressors, such as perceived rejection or criticism, which often trigger negative affective states and distress (Boritz et al., 2018; Gunderson, 2011; Sadikaj et al., 2010).

Therapeutic Alliance in BPD Treatment

A positive therapeutic alliance is considered a mechanism of change in BPD treatments (Burckell & McMain, 2011), as it can promote trust and engagement in the therapeutic process, motivate patients to address dysfunctional behavioural patterns, and its successful establishment can serve as a corrective relational experience (Boritz et al., 2023). The alliance is commonly conceptualized as comprising agreement on therapeutic goals and tasks, as well as the emotional bond between patient and therapist (Bordin, 1979). Alliance formation begins in the initial sessions of therapy, which provide early opportunities to foster engagement, instill hope, and establish a collaborative foundation (Sexton et al., 2005). The quality of the early alliance can predict alliance quality throughout treatment, as well as treatment retention and outcomes in BPD treatments (David-Sela et al., 2021; McMain et al., 2009; Zilcha-Mano et al., 2017). The presence of a strong therapeutic bond may also serve as a precondition that aids the therapeutic dyad in effectively navigating interpersonal difficulties that arise in the alliance (Coutinho et al., 2014; David-Sela et al., 2021; Rhodes et al., 1994).

Despite its importance, establishing and maintaining a productive alliance with patients with BPD can be difficult. Emotion dysregulation, heightened rejection sensitivity, and a slow return to emotional baseline may be elicited during challenging interpersonal interactions in therapy and hinder effective collaboration with the therapist in-session (Gunderson, 2011; Linehan et al., 2000; McMain et al., 2015). Research suggests that some patients and therapists are more successful than others in forming alliances, potentially due to behaviours or characteristics that facilitate effective in-session conflict resolution (Eubanks et al., 2018a; Levy Chajmovic & Tishby, 2024). As such, identifying factors that facilitate or obstruct alliance formation and conflict resolution is therefore critical for optimizing treatment retention and outcomes in BPD.

Alliance Rupture and Repair

Alliance ruptures are moments of tension, strain, or breakdown in the collaborative relationship and emotional bond between patient and therapist (Eubanks et al., 2018a). Alliance ruptures manifest through confrontation or withdrawal behaviours; these are observable markers that signify the presence of a rupture (Eubanks & Muran, 2022; Safran & Muran, 2000). Rupture markers can be observed in both patient and therapist behaviours. Confrontation rupture markers refer to instances when the patient or therapist communicate anger or dissatisfaction toward the other party or the therapeutic process, and are typically explicit and recognizable (e.g., complaining about therapy, hostility, attempts to pressure or control the other). Withdrawal rupture markers involve instances where the patient or therapist moves away from the therapeutic task through avoidance or withdrawal, which can often be subtle and difficult to recognize (e.g., hiding dissatisfaction, providing minimal responses, being overly appeasing;

Eubanks et al., 2018a). When ruptures are repaired effectively, they can serve as important opportunities for therapeutic change (e.g., a corrective experience; Safran & Muran, 2000).

Alliance rupture-repair is the process of re-establishing collaboration following a rupture; a rupture is typically considered repaired when the patient and therapist resume therapeutic work with a strong emotional bond (Eubanks et al., 2018a). Alliance ruptures can be particularly frequent and intense for patients with BPD, which may be attributed to core characteristics of the disorder such as emotional dysregulation and sensitivity to perceived abandonment and criticism (McMain et al., 2015; Tufekcioglu et al., 2013). Failure to repair a rupture may predict further degradation of the alliance (Eubanks et al., 2018a; Safran & Muran, 1996), reinforce problematic interpersonal patterns (Boritz et al., 2026), and, particularly in earlier sessions, is associated with premature treatment dropout for individuals with BPD (Steuwe et al., 2023). In contrast, successful rupture-repair episodes are associated with symptom improvement and reduced treatment dropout for patients with BPD (Muran et al., 2005; Strauss et al., 2006).

How a rupture manifests—whether through confrontation or withdrawal behaviours—plays a differential role in rupture-repair processes (Eubanks et al., 2018a). In psychotherapy broadly, confrontation ruptures may have a more immediate negative impact on alliance quality than withdrawal ruptures (Babl et al., 2022), likely because they are more noticeable and difficult to manage (Eubanks et al., 2018b). Withdrawal ruptures, often subtle and less emotionally charged, may be harder for therapists to recognize and therefore remain unaddressed (Eubanks et al., 2018b). To date, research on alliance rupture and repair in BPD has found that while successful resolution of high intensity withdrawal ruptures mitigated their impact on alliance quality (Babl et al., 2022), incomplete repair of withdrawal ruptures has been observed to progress into confrontation ruptures or increased over-compliance (i.e., exacerbate withdrawal)

for individuals with BPD (Cash et al., 2014). Moreover, evidence from studies looking at ruptures in BPD-specific treatments such as dialectical behaviour therapy (DBT) indicate withdrawal ruptures are more frequent in early sessions, less responsive to repair, persist across sessions, and predict poorer post-treatment outcomes (Boritz et al., 2018; Gersh et al., 2017). One study examining alliance rupture-repair processes in a single early session of DBT for BPD observed that for therapists who possessed greater dispositional mindfulness, the presence of more intense therapist confrontation rupture markers was associated with more effective overall repair (Smith et al., in preparation). Further, when controlling for in-session alliance quality, for therapeutic dyads who "worked well together" (a measurement based on a subscale of the Rupture Resolution Rating System (3RS; Eubanks and Muran, 2022)), the presence of more intense patient confrontation and withdrawal rupture markers predicted more effective overall repair (Smith et al., in preparation). Because alliance and rupture-repair processes operate differently in BPD than in general psychiatric populations, more research is needed to examine the role of rupture type in alliance development and maintenance with patients with BPD.

Alliance Rupture-Repair Interventions

Repair strategies are interventions that are employed to resolve the rupture and continue with therapeutic work (Eubanks & Muran, 2022). Repair strategies can be *direct*, in which the therapist or patient directly acknowledge the rupture, or *indirect*, where a repair effort is made without explicit acknowledgement of the rupture (Eubanks et al., 2018a). Alliance research has suggested that, in psychotherapy generally, direct repair strategies may be more effective when the therapeutic alliance is strong, whereas indirect strategies may be more productive if the alliance is not strong enough (Eubanks et al., 2018a).

Alliance rupture-repair pathways have been increasingly explored in alliance research. There is no singular pathway to successful rupture-repair, however, research suggests that the process of repairing a rupture typically starts with explicit or implicit acknowledgement of the rupture and culminates in "provision of a new corrective or differential learning experience" (Muran et al., 2023, p. 17; Muran & Eubanks, 2020). Task analyses have highlighted the effectiveness of directly acknowledging and exploring the rupture in their models (Agnew et al., 1994; Swank & Wittenborn, 2013), while other studies have found that explicitly acknowledging the rupture was not necessary, but rather indirect strategies, such as the therapist changing the task, facilitated repair (Aspland et al., 2008; Cash et al., 2014). The rupture-repair process may also differ depending on rupture type, although research exploring this distinction is limited (Safran & Muran, 1996; 2000).

Certain alliance rupture-repair strategies may be less effective—or even counterproductive—when used with patients with BPD, who may perceive interventions such as negotiating goals as invalidating or dismissive (Boritz et al., 2021; Linehan, 1993b). Models of rupture-repair in BPD treatment have suggested that successful repair involves therapists facilitating patients' processing of previously avoided feelings and memories (Bennett et al., 2006). Moreover, models have included the role of therapists' disclosure of their own experience of the rupture in facilitating repair with patients with BPD (Bennett et al., 2006; Cash et al., 2014), as this process can aid the patient in understanding and exploring affective experiences activated in-session. Together, these findings suggest that rupture-repair is most effective when therapists facilitate emotional exploration and insight into the therapeutic relationship, providing corrective emotional experiences that address maladaptive interpersonal patterns characteristic of

BPD, such as heightened rejection sensitivity and impulsivity (Bennett et al., 2006; Cash et al., 2014).

Despite the interactive nature of rupture-repair, limited research has examined the role of patient contributions to rupture-repair processes (Eubanks et al., 2018a). Research has suggested that, in general psychiatric populations, patients' assertion of their own negative feelings helped facilitate repair, and patients who feel they have a strong bond with the therapist are more likely to contribute to repairs (Eubanks et al., 2018a; Rhodes et al., 1994). However, research has not yet explored how patients with BPD contribute to rupture-repair. Considering maladaptive interpersonal patterns often emerge during emotionally challenging moments in therapy, examining how therapeutic dyads navigate ruptures in-session may advance understanding of mechanisms underlying effective rupture-repair and therapeutic progress in BPD treatment.

Aims of the Study

The present exploratory study examined the roles of alliance quality, "working together," and alliance rupture-repair in the context of early DBT treatment for BPD. The study aims were two-fold: (1) to understand the relationship between the therapeutic alliance and the overall extent to which ruptures were effectively repaired in one early session (session 6) of DBT for BPD, and (2) to elucidate therapist and patient strategies that are associated with effective rupture-repair in that same treatment session.

To address the first aim, we examined whether baseline patient-rated alliance quality (the average score across sessions 1-4) and observer-rated session 6 alliance quality independently moderated the relationships between session-level rupture marker salience (i.e., the intensity of ruptures; overall, confrontation, withdrawal) and session-level repair effectiveness in session 6.

We also examined associations between baseline patient-rated alliance quality, session 6 observer-rated alliance quality, and observer-rated "working together" in session 6.

To address the second aim, we examined whether the use of repair strategies was associated with the session-level salience (overall, confrontation, withdrawal) of patient versus therapist rupture markers. We also assessed whether the type of repair strategy used was associated with session-level rupture-repair effectiveness, and whether observer-rated "working together" in session 6, patient-rated baseline alliance quality, and observer-rated session 6 alliance quality independently moderated the relationship between repair strategy use and session-level repair effectiveness.

Method

Study Design

This study was a secondary analysis of the Feasibility of a Shorter Treatment and Evaluating Responses (FASTER) study, a large, multi-center, single-blind, randomized, two-arm trial comparing the effectiveness of 6- versus 12-months of DBT for outpatients diagnosed with BPD (McMain et al., 2022). Participants met DSM-IV diagnostic criteria for BPD, assessed using the International Personality Disorder Exam (Loranger, 1994). The inclusion criteria for the original study from which this data is drawn consisted of: a diagnosis of BPD; age between 18-60 years; at least two suicide attempts or non-suicidal self-injury in the past five years including at least one in the past two months; English proficiency; and valid provincial health insurance. Exclusion criteria were a diagnosis of bipolar I disorder, a psychotic disorder, and/or dementia; a serious physical health condition with anticipated hospitalization; an IQ of 70 or less; attending at least 8 weeks of DBT in the past year; and plans to move out of the province during the trial. Therapists were required to have at least two years of supervision in delivering

DBT. The study was conducted at two sites in Canada (Toronto and Vancouver). The study was registered with ClinicalTrials.gov (NCT02387736) and approved by the ethical review committees at each site. The study was funded by the Canadian Institutes of Health Research (CIHR FRN 133428). All participants provided written consent to participate in the study and additional consent was not required for this study. For a detailed description of the study protocol and the outcomes paper see McMain et al. (2018) and McMain et al. (2022).

Participants

This study was based on a subsample (n = 60) of the 240 participants in the FASTER study. The subsample was comprised of the first 60 treatment completers from the CAMH site and were equally split across both arms of the study (DBT-6: n = 30, DBT-12: n = 30). Four eligible participants were eliminated and replaced with the next participant assigned to the respective arm for the following reasons: one participant was excluded because they switched therapists twice in the early phase of treatment, two produced poor-quality audio and video recordings of sessions, and one withdrew research consent. The sample was comprised of 48 women, 10 men, and 2 people who identified their gender as "other." The mean patient age was 30 (range = 18-47, SD = 7.94).

Therapists

Treatments were delivered by 13 master's and doctoral-level clinicians, all with a minimum of 2 years of supervised experience in DBT and treating patients with BPD. Therapists were 11 women and 2 men, and the average age was 45.8 years old (SD = 11.7). Therapists had a mean 3.85 (SD = 1.46) years of experience providing DBT and treating patients with BPD, and there was an average of 4.62 (SD = 3.33) patients seen by each therapist (range = 1-14). Supervision was provided to study therapists by the three primary investigators (SM, AC and JK)

who were certified DBT practitioners registered with the Linehan Board of Certification and Accreditation.

Treatment

Treatment consisted of 6 or 12 months of standard DBT (Linehan et al., 1993). Patients received the four standard components of DBT treatment: individual therapy (1 hour per week), group skills training (2 hours per week), phone coaching (available 24 hours a day), and a therapist consultation team meeting (2 hours per week). Ancillary pharmacotherapy was not restricted. Each therapy session was videotaped. Recordings were randomly selected and given DBT adherence ratings to confirm that therapists adhered to treatment protocol (McMain et al., 2022). Aside from treatment length, the two treatment conditions were comparable on all factors.

Measures

Baseline Alliance Quality. The Working Alliance Inventory - Short Form - Client (WAI-S; Tracey & Kokotovic, 1989) is a shortened 12-item version of the Working Alliance Inventory (Horvath & Greenberg, 1989). After the completion of the therapy session, patients respond to questions concerning agreement on goals (e.g., “The therapist and I are working towards mutually agreed upon goals”), agreement on tasks (e.g., “The therapist and I agree about the things I will need to do in therapy to help improve my situation”), and the emotional bond between patient and therapist (e.g., “The therapist and I trust each other”) during the therapy session using a 5-point Likert scale (1 = “Seldom” to 7 = “Always”). Scores range from 12 to 84, with higher ratings indicating a stronger alliance. This version has also shown good reliability (r = 0.80) and validity (r = 0.64; Munder et al., 2009). In this study, the WAI-S ratings from the first four therapy sessions were averaged to create a baseline measure of alliance quality. Internal reliability was good (0.72-0.75; Cicchetti, 1994).

Observer Measures

Session 6 Alliance Quality. The Working Alliance Inventory - Observer (WAI-O; Berk et al., 2013) is a 12-item measure that assesses the quality of the therapeutic alliance within a therapy session. The WAI-O captures both the affective bond of the therapeutic dyad and their agreement and collaboration on goals and tasks in-session. After viewing each half of the session, raters are shown statements that describe the quality of the alliance and are asked to select the statement that best encapsulates what occurred in-session using a 7-point Likert scale (1 = "Weakest alliance," to 4 = "No evidence or equal evidence," to 7 = "Strongest alliance"). The average of items and segments were taken to create an overall alliance quality score. This version has shown moderate to strong reliability (r = 0.75) and validity (r = 0.39-0.48; Berk, 2013).

WAI-O Coding Procedure

Coders were one doctoral-level psychologist, and two masters and four doctoral psychology students. Several tapes were coded and discussed as a group to establish interrater reliability. Throughout the coding process, raters met three times to express any concerns or ask questions about the measure. Each session was randomly assigned two coders. The 60 sessions were divided into two equal halves for coding, with the same pair of coders rating both halves of each assigned session. Coders each rated an average of 35 session segments (range = 20 to 71). Interrater reliability was good (0.72-0.75; Cicchetti, 1994).

Alliance Rupture and Repair and "Working Together." The Rupture Resolution Rating System v 2022 (3RS: Eubanks & Muran, 2022) is an observer-based measure used to identify the salience and type of alliance rupture markers, rupture-repair effectiveness, strategies that facilitate repair, and "working together." Salience is defined as the prominence or intensity of the

variable measured. Coders watch the entire session and make segment-level ratings in five-minute intervals, and then make session-level global ratings of rupture marker salience and repair effectiveness after viewing the entire session. The salience of rupture-repair effectiveness is rated using a 5-point Likert scale (1 = “Ruptures were not successfully repaired and the alliance worsened (or was so poor that it could not get worse)” to 5 = “Ruptures were repaired a good amount”). The salience of confrontation and withdrawal rupture markers is captured by salience ratings using a 5-point Likert scale (1 = “Not present” to 5 = “Present, very salient”). The salience of confrontation and withdrawal rupture markers were averaged to create a session-level measure of “overall rupture salience.” When coding for rupture marker salience, the coder does not have the task of deciding whether a rupture is definitely present or not, but instead indicates the salience of markers that have been associated with ruptures (e.g., shifting the topic as marker of withdrawal rupture). Using the same 5-point Likert scale, each five-minute segment is also coded for the salience of four rupture-repair strategies: focusing on the task (focus), exploring the rupture (explore), acknowledging contribution to the rupture (acknowledge), and linking the rupture to interpersonal patterns of behaviour (link). For each repair strategy, the salience scores across segments were averaged to create a measure of overall repair strategy use. For a repair strategy to be coded, the coder does not have to observe a rupture marker, but must be confident that it is being used in response to a rupture; for example, the dyad may be responding to a rupture that occurred in the previous session. Using the same 5-point Likert scale, for each five-minute segment, each segment is coded for how well the therapist and patient are “working together” using five indices. The first two indices, informed by Bordin’s (1979) conceptualization of the alliance, are agreement on goals and collaboration on tasks, as well as presence of emotional bond. In addition to assessing alliance quality, this measure captures

therapist acceptance and validation of patient, therapist curiosity and engagement with patient, and patient engagement in therapeutic work. The mean of the five indices across all segments was calculated to form an overall "working together" score. Session-level repair effectiveness and "working together" are measures that include both patient and therapist behaviours or efforts. Rupture markers and repair strategies are differentiated in terms of whether they were evidenced by the therapist or patient, respectively (e.g., "Patient shuts down," "Therapist complains about patient," "Patient explores the rupture," "Therapist acknowledges contribution to rupture"). Session-level repair effectiveness and "working together" ratings may capture repair efforts not explicitly measured by the 3RS. A rating of "N/A" was given for segments that did not include any rupture markers or repair efforts. The 3RS has been observed to have excellent interrater reliability (0.85-0.98) and good convergent validity (0.39-0.48; Eubanks et al., 2019).

3RS Coding Procedure

The 3RS was applied to the recording of each dyad's session 6. The sixth session was chosen as it reflects the early treatment phase. Each session was segmented into five-minute time "bins." Coders were two doctoral students, one female in her 30's and one male in his 40's. The coders had approximately 25 hours of 3RS training, including consultation with the developer of the 3RS (C. F. Eubanks). The coders were blind to patient outcomes. Both coders rated each therapy session; ratings were averaged across time bins. Interrater reliability between the two coders was assessed using intraclass coefficients. Ratings of session-level repair effectiveness, session-level rupture marker salience, "working together," and repair strategy use had excellent reliability (0.80-0.91; Cicchetti, 1994).

Data Analytic Plan

All analyses used R Version 4.5.1. (R Core Team, 2025) and the "lme4" package (Bates et al., 2015). Given most therapists in this sample had more than one patient, the data were analyzed using multilevel modeling. The structure of the data was nested, with patients/dyads (level 1) clustered within therapists (level 2). Random-slopes multilevel models were used, allowing slopes to vary when appropriate. To have a clear distinction of within- and between-effects in our sample, primary predictors were group-mean centered, and their means were level 2 predictors (Hoffman & Walters, 2022). Treatment length was held constant for each analysis.

Results

See Table 1 for descriptive statistics.

Baseline Alliance Quality as a Moderator of the Relationship Between Rupture Marker Salience and Repair Effectiveness

Multiple linear multilevel models were estimated to examine whether baseline alliance quality moderated the relationship between session-level rupture marker salience and rupture-repair effectiveness. Baseline alliance quality did not significantly moderate the relationship between rupture marker salience and repair effectiveness (see Table 2). Random effects indicated moderate variability across therapists (intercept *SD* = 0.16-0.31, slope *SD* = 0.00-0.48). These findings indicate that the relationship between session-level rupture marker salience and rupture-repair effectiveness in session 6 did not vary based on baseline alliance quality.

Session 6 Alliance Quality as a Moderator of the Relationship Between Rupture Marker Salience and Repair Effectiveness

Multiple linear multilevel models were estimated to examine whether session 6 alliance quality moderated the relationships between session-level rupture marker salience and repair

effectiveness, controlling for "working together." Session 6 alliance quality significantly moderated the relationship between session-level patient rupture markers and repair effectiveness (overall: $b = 0.37$, $p < .01$; withdrawal: $b = 0.45$, $p < .01$; confrontation: $b = 0.21$, $p = .03$), but not therapist rupture markers and repair effectiveness (see Table 2). Random effects indicated moderate variability across therapists (intercept $SD = 0.19$-0.34, slope $SD = 0.02$-0.22). These findings suggest that when session 6 alliance quality was high, more salient patient rupture markers were associated with more effective session-level repair.

Baseline Alliance Quality and Session 6 Alliance Quality

To examine the relationship between baseline alliance quality and session 6 alliance quality, a linear multilevel model was estimated. "Working together" was held constant. Findings revealed a significant association between baseline alliance quality and session 6 alliance quality ($b = 0.04$, 95% CI [0.02, 0.06], $p < .001$). Random effects indicated negligible variability across therapists (intercept $SD = 0.00$). These findings suggest that higher baseline alliance quality predicted higher session 6 alliance quality.

Baseline Alliance Quality and "Working Together"

The relationship between baseline alliance quality and "working together" was estimated using a linear multilevel model. Session 6 alliance quality was held constant. There was no significant association between baseline alliance quality and how well the dyad "worked together" in session 6 ($b = -0.01$, 95% CI [-0.45, 0.12], $p = .38$). Random effects indicated moderate variability across therapists (intercept $SD = 0.29$). These findings suggest that the quality of the therapeutic alliance cultivated in the first four sessions of therapy did not predict how well the patient and therapist "worked together" in session 6.

"Working Together" and Session 6 Alliance Quality

The relationship between "working together" and session 6 alliance quality was estimated using a linear multilevel model. There was a significant relationship between "working together" and session 6 alliance quality (b = 0.76, 95% CI [0.34, 1.18], p < .001). Random effects indicated negligible variability across therapists (intercept SD = 0.00). These findings indicate that the degree to which the therapist and patient "worked well together" in session 6 was positively associated with the quality of their alliance in that same session. A post-hoc multicollinearity analysis found that session 6 alliance quality and "working together" were moderately positively correlated, $r(57)$= 0.46, 95% CI [0.23, 0.64], p < .001, but not enough to be problematic or redundant.

Rupture Type and Repair Strategy Use

Linear multilevel models were estimated to explore the relationship between the salience of rupture type and repair strategy use. Patients' rupture marker salience was significantly associated with more salient therapist use of focus (confrontation: b = 0.33, p < .01, withdrawal: b = 0.44, p < .01) and explore (confrontation: b = 0.32, p < .01, withdrawal: b = 0.49, p < .01) strategies. For patients, the salience of their own withdrawal rupture markers was significantly associated with their own use of the explore (b = 0.09, p = .02) strategy, whereas the salience of their confrontation rupture markers was associated with their own use of the acknowledge strategy (confrontation: b = 0.04, p = .04; see Table 3). Random effects indicated negligible to moderate variability across therapists (intercept SD = 0.00-0.40, slope SD = 0.00-0.47). In summary, higher salience of patient rupture markers predicted therapists' use of focus and explore strategies, whereas patients' use of repair strategies differed depending on the salience of their withdrawal versus confrontation rupture markers.

Repair Strategy Use and Repair Effectiveness

To examine the relationship between repair strategy use and session-level repair effectiveness, linear multilevel models were estimated, controlling for rupture marker salience. Therapists' use of the focus ($b = 0.61$, $p < .01$), explore ($b = 0.60$, $p < .01$), and link ($b = 1.15$, $p < .05$) strategies were significantly associated with more effective repair when controlling for the salience of patient rupture markers (see Table 4). Further, patients' use of the acknowledge ($b = 4.36$, $p < .001$), focus ($b = 3.18$, $p = .01$), and link ($b = 7.18$, $p < .001$) strategies were significantly associated with more effective repair when controlling for the salience of patient rupture markers. Patients' use of the acknowledge ($b = 3.88$, $p < .001$), focus ($b = 3.15$, $p = .01$), and link ($b = 6.04$, $p < .01$) strategies were also significantly associated with more effective repair when controlling for the salience of therapist rupture markers. Random effects indicated low to moderate variability across therapists (intercept $SD = 0.00$-0.29, slope $SD = 0.02$-0.30). These findings indicate that patients' and therapists' use of focus and link strategies were associated with more effective session-level repair when accounting for patient rupture markers, and patients' use of acknowledge, focus, and link strategies predicted more effective session-level repair when accounting for therapist rupture markers.

"Working Together" as a Moderator of the Relationship Between Repair Strategy Use and Repair Effectiveness

To understand whether the degree to which the dyad was "working together" moderated the relationship between repair strategy use and session-level repair effectiveness, while controlling for rupture marker salience and session 6 alliance quality, multiple multilevel models were estimated. "Working together" significantly moderated the relationship between patients' and therapists' use of the explore strategy and repair effectiveness when controlling for patient

rupture markers (patient repair: $b = 2.71$, $p = .01$; therapist repair: $b = 0.73$, $p = .02$) and therapist rupture markers (patient repair: $b = 2.60$, $p = .01$; therapist repair: $b = 0.80$, $p < .01$; see Table 5). Random effects indicated moderate variability across therapists (intercept *SD* = 0.18-0.33, slope *SD* = 0.02-0.17). Overall, when "working together" was high, more salient use of the explore repair strategy was associated with more effective session-level rupture-repair.

Baseline Alliance Quality as a Moderator of the Relationship Between Repair Strategy Use and Repair Effectiveness

Multiple multilevel models were estimated to examine whether baseline alliance quality moderated the relationship between repair strategy use and session-level repair effectiveness, while controlling for rupture marker salience. Baseline alliance quality did not significantly moderate the relationship between therapists' or patients' use of repair strategies and session-level repair effectiveness (see Table 5). Random effects indicated modest to moderate variability across therapists (intercept *SD* = 0.18-0.33, slope *SD* = 0.01-1.09). These findings suggest that baseline therapeutic alliance quality did not inform the degree to which repair strategy use was associated with session-level repair effectiveness in session 6.

Session 6 Alliance Quality as a Moderator of the Relationship Between Repair Strategy Use and Repair Effectiveness

Multiple multilevel models were estimated to examine whether session 6 alliance quality moderated the relationship between repair strategy use and session-level repair effectiveness, while controlling for rupture salience and "working together." Session 6 alliance quality did not significantly moderate the relationship between therapists' or patients' use of repair strategies and session-level repair effectiveness (see Table 5). Random effects indicated moderate variability across therapists (intercept *SD* = 0.19-0.32, slope *SD* = 0.06-0.24). These findings

suggest that when session 6 alliance quality was high, more salient use of the explore strategy was associated with more effective session-level repair.

Discussion

The aim of this study was to explore the relationships between alliance quality, "working together," and in-session rupture and repair processes in the context of early DBT treatment for BPD. First, we examined the roles of baseline and in-session therapeutic alliance quality in alliance rupture and repair processes in a single early session (session 6). Then, we examined which strategies therapists and patients used to respond to rupture markers in-session, and the degree to which these efforts were associated with the overall effectiveness of rupture-repair in-session. Findings revealed that baseline alliance quality predicted session 6 alliance quality, such that dyads with a strong early alliance continued to have a strong alliance in session 6. Baseline alliance quality did not predict how well the dyad "worked together" in session 6, though session 6 alliance quality and "working together" were positively associated. This suggests that, while alliance quality may remain relatively stable over time, having a strong alliance early in the therapeutic relationship does not necessarily predict the degree to which dyads "work well together" in any specific session. Only session 6 alliance quality moderated the relationships between rupture salience and session-level repair effectiveness in-session. Taken together, these results underscore the role of the therapeutic alliance as a dynamic precondition for therapeutic events in the early phase of treatment. While the quality of the alliance cultivated in the first four sessions of therapy seemed to provide a relational foundation for the dyad, it was the proximal context of the relationship that informed the dyads' capacity to "work together" and navigate rupture-repair processes as they unfolded within the same session.

Similar findings have been observed in other alliance research. For instance, David-Sela et al. (2021) found that a stronger alliance in one session predicted more successful rupture-repair in the following session for a sample of patients with depression. Accordingly, alliance quality may serve as a relational buffer that enables the dyad to work together collaboratively and better tolerate and repair intense alliance ruptures (David-Sela et al., 2021; Goldfried & Davila, 2005). Indeed, cultivating trust in the therapeutic relationship and engagement in therapy may encourage the patient's emotional processing, better equipping the dyad to explore alliance ruptures and address the patient's underlying needs (Boritz et al., 2023). In contrast, for dyads without a strong alliance, repairing ruptures may be particularly challenging as the relationship lacks mutual trust and collaboration (David-Sela et al., 2021). However, it is also possible that the associations between alliance quality and in-session therapeutic processes are bidirectional, such that dyads who are effectively repairing high-salience ruptures or working well together in-session are simultaneously cultivating a stronger alliance (Bordin, 1981).

Findings surrounding the relationship between session 6 alliance quality and "working together" further exemplify the proximal context of the alliance for in-session therapeutic processes. Although the measures of session 6 alliance quality and "working together" both assess collaboration on therapeutic tasks and an emotional bond (Cirasola et al., 2025), one of the findings in our second aim demonstrated that even after controlling for session 6 alliance quality, "working together" still had a significant effect, indicating that "working together" represents a unique construct that captures additional characteristics of the dyads' functioning outside of the alliance. This conclusion is supported by the post-hoc multicollinearity analysis which indicated a moderate but non-redundant positive correlation between alliance quality and "working together." Accordingly, it is possible that therapists' relational strategies like communicating

compassion, warmth, positive regard, and curiosity towards the patient, as well as validating the patient through exploring their experience may be particularly beneficial in further cultivating an alliance as well as guiding the dyad through rupture-repair (Ackerman & Hilsenroth, 2003; David-Sela et al., 2021; Muran & Eubanks, 2020). Moreover, patients' contribution to "working together," through engagement in and openness to therapeutic work, may be mutually informed by the quality of the alliance in-session (Eubanks & Muran, 2022).

With respect to in-session responses to ruptures, findings indicated that the prominence of repair strategies varied depending on the type of rupture and whether the patient or therapist exhibited rupture behaviours. For therapists, more salient patient confrontation rupture markers and patient withdrawal rupture markers were associated with the greater use of focus and explore strategies but not link and acknowledge strategies. Alternatively, in instances where patients were exhibiting withdrawal behaviours, they were more likely to engage by exploring the rupture; in contrast, when they were exhibiting confrontation behaviours, they were more likely to use the strategy of acknowledging their contribution to the rupture.

In this sample, specific repair strategies were associated with more effective session-level rupture-repair than others. For example, greater therapist use of the focus, explore, and link strategies were associated with more effective repair when accounting for patient rupture markers, whereas greater patient use of focus, link, and acknowledge strategies were associated with more effective repair when accounting for both patient and therapist rupture markers. Lastly, for dyads who "worked well together," more salient patient and therapist use of the explore strategy was generally associated with more effective session-level repair. These findings indicate that therapists and patients more often relied on indirect repair strategies (i.e., focus, link, explore) to repair ruptures, and more salient use of these strategies were associated with

more effective overall repair. The use of the explore strategy, in particular, was more strongly associated with effective rupture-repair when the dyad was highly collaborative in-session. Prior research has shown that facilitating emotional exploration and insight into the therapeutic relationship aids rupture-repair with patients with BPD (Bennett et al., 2006; Daly et al., 2010). Indeed, exploring a rupture can be validating as it prioritizes the individual's experience surrounding the interpersonal tension (Safran & Muran, 2000). Moreover, patients who feel that they have a strong bond with their therapist may be especially motivated to contribute to repair efforts (Eubanks et al., 2018a). Taken together, it is possible that exploring the rupture during a session in which the dyad is particularly collaborative and engaged may be especially impactful, as it allows the dyad to address maladaptive interpersonal patterns in the context of a safe and trusting relationship (Bennett et al., 2006; Cash et al., 2014). Additionally, exploring the rupture may be a particularly non-threatening method of attending to a rupture in early treatment; in contrast, acknowledging one's contribution to the rupture may not be sufficient, and linking to interpersonal patterns or focusing on the therapeutic task in response to a rupture could be perceived as invalidating or too intense if the dyad has not yet cultivated a positive working relationship (Eubanks et al., 2018a).

Alliance quality did not inform the relationship between the use of the only direct repair strategy examined in this study (i.e., acknowledging the rupture) and session-level repair effectiveness. These findings do not align with previous alliance research that has suggested that direct repair strategies are more effective when the therapeutic alliance is strong, whereas indirect strategies may be more productive if the alliance is not as strong (Eubanks et al., 2018a). Accordingly, it is likely that the model of rupture resolution is not universal and further considerations are needed when repairing ruptures with patients with BPD, such as greater

emphasis on the therapeutic relationship and affective experience (Aspland et al., 2008; Bennett et al., 2006; Cash et al., 2013).

These findings also highlight the roles of both patients and therapists in repairing ruptures. While the process of alliance rupture and repair has been conceptualized as a collaborative process and negotiation dependent on the participation of both patient and therapist (Safran & Muran, 2000), limited research has examined how patients contribute to rupture-repair (Eubanks et al., 2018a). Although less salient than therapist repair strategies, in this sample, more salient patient use of strategies such as acknowledging their contribution to the rupture, focusing on the therapeutic task, and linking the rupture to interpersonal patterns were associated with more effective repair when accounting for patient and therapist rupture markers. As such, patients' efforts to repair rupture markers appeared to be particularly impactful in getting the dyad back on track following an interpersonal tension. Alternatively, the strategies employed by therapists were more strongly associated with session-level repair effectiveness when accounting for patient rupture markers rather than their own, suggesting that therapists may be relying on other characteristics or methods outside of the session to address their own experiences of tension or conflict in their therapy sessions (e.g., consultation with colleagues, personal therapy, dispositional mindfulness; Smith et al., in preparation).

Limitations and Future Directions

This study had several limitations. First, the roles of patient and therapist demographic and contextual factors (e.g., gender, sexual orientation, socioeconomic status, culture) in therapy processes in-session were not assessed. Research has found that therapists' or patients' assumptions, generalizations, or stereotypes about the other's culture, gender, ethnicity, or race can predict alliance ruptures, alliance quality ratings, premature treatment dropout, and patient

outcome (Boswell et al., 2025; Eubanks et al., 2018a). Further, the effectiveness of rupture-repair may be shaped by how dyads approach their cross-cultural differences, such as through discussing and exploring the experience of a perceived microaggression (Chang et al., 2020; Eubanks et al., 2018a). As such, future research would benefit from examining how demographic factors may inform alliance quality development and maintenance and rupture-repair processes within- and across-therapy sessions.

Second, this study only analyzed a single session, which restricted our ability to account for rupture-repair processes as they unfold across sessions. Moreover, this study focused on generating a snapshot of the session rather than following the repair of a specific rupture event. While snapshots are useful for capturing the correlations between broader relational markers, this method did not allow for tracking how therapists and patients responded to and attempted to repair specific rupture markers across the session and whether these repair efforts were effective. Further, it did not capture the directionality of these alliance quality, "working together," and rupture-repair processes. Sequentially examining how dyads respond to specific rupture markers and repair could establish a temporal or causal precedence, providing insight into the context in which certain interventions work, in what sequence they're effective, and for whom. Therefore, future research may consider conducting a lag sequential analysis (Falkenstrom et al., 2022) to examine rupture and repair processes both temporally within a session and over a series of sessions or stages of therapy. Likewise, future research may employ actor partner interdependence modelling (Zilcha-Mano et al., 2016) to account for the dyadic nature of alliance quality and rupture-repair processes.

Another limitation was the measurement of alliance quality in session 6. While observer raters are trained to identify subtle markers of alliance and rupture-repair processes, they can

only assess observable indicators of collaboration and interpersonal strain in-session. In contrast, therapist-rated alliance may be informed by therapy skill, experience level, or alliance quality with other patients, and patient-rated alliance may be informed by factors like symptom severity or the quality of other interpersonal relationships (Manne et al., 2013; Tryon et al., 2007). Moreover, both patient and therapist may be less attuned to subtle markers of ruptures or less willing to acknowledge alliance strain in their alliance quality ratings (Putri et al., 2024). As such, future research should employ patient-, therapist-, and observer-rated alliance measures to allow for a more comprehensive assessment of alliance quality in-session.

Conclusion

This study explored the roles of alliance quality, "working together," and rupture-repair processes in an early session of DBT for BPD. Findings highlighted alliance quality as a proximal context that is mutually informed by how well the dyad is "working together" and in-session rupture-repair processes. Further, both therapists and patients made efforts to repair ruptures. Exploring the rupture was a particularly effective repair strategy when the dyad was "working well together" in-session. Future research should sequentially examine how therapists and patients respond to specific rupture markers and repair attempts both within- and across-sessions throughout different stages of treatment.

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Tables

Table 1

Descriptive Statistics

Variable		*M*	*SD*	*Med*	IQR
Patient Rupture Markers	Overall	3.06	0.79	3.00	1.00
	Withdrawal	3.46	0.79	3.50	1.00
	Confrontation	2.67	1.12	2.50	1.13
Therapist Rupture Markers	Overall	2.29	0.73	2.25	0.63
	Withdrawal	1.88	0.75	2.00	1.00
	Confrontation	2.70	0.98	2.75	1.13
Therapist Repair Strategy	Acknowledge	1.10	0.15	1.04	0.10
	Focus	2.36	0.70	2.41	1.17
	Explore	1.68	0.73	1.48	1.05
	Link	1.07	1.17	1.00	0.04
Patient Repair Strategy	Acknowledge	1.06	0.09	1.00	0.07
	Focus	1.06	0.08	1.01	0.09
	Explore	1.18	0.22	1.13	0.27
	Link	1.02	0.05	1.00	0.00
Repair Effectiveness		2.95	0.81	3.00	1.17
Baseline Alliance Quality		67.1	12.1	69.8	18.9
Session 6 Alliance Quality		4.66	0.87	4.79	0.99
"Working Together"		3.47	0.60	3.50	0.69

Note. Salience of Rupture Marker, Repair Strategy, Repair Effectiveness, and "Working Together" (scale range = 1-5). Baseline Alliance Quality (scale range = 12-84). Session 6 Alliance Quality (scale range = 1-7).

Table 2

Alliance Quality as Moderator of Relationships Between Rupture Marker Salience and Repair Effectiveness

Moderator	Rupture Marker Type	Repair Effectiveness *b* [95% CI], *p*
Baseline Alliance Quality	Overall Patient Ruptures	0.02 [0.00, 0.05], .05
	Patient Withdrawal Ruptures	0.02 [-0.00, 0.05], .08
	Patient Confrontation Ruptures	0.02 [-0.00, 0.04], .08
	Overall Therapist Ruptures	0.01 [-0.03, 0.05], .52
	Therapist Withdrawal Ruptures	0.01 [-0.02, 0.04], .53
	Therapist Confrontation Ruptures	-0.01 [-0.04, 0.02], .71
Session 6 Alliance Quality	Overall Patient Ruptures	0.37 [0.14, 0.60], .00**
	Patient Withdrawal Ruptures	0.45 [0.20, 0.71], .00**
	Patient Confrontation Ruptures	0.21 [0.02, 0.40], .03*
	Overall Therapist Ruptures	0.13 [-0.27, 0.53], .53
	Therapist Withdrawal Ruptures	-0.00 [-0.32, 0.32], 1.00
	Therapist Confrontation Ruptures	0.18 [-0.09, 0.45], .20

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

Table 3

Relationship Between Rupture Type and Repair Strategy Use

Strategy (Used By)	PW *b* [95% CI], *p*	PC *b* [95% CI], *p*	TW *b* [95% CI], *p*	TC *b* [95% CI], *p*
Acknowledge (T)	-0.01 [-0.06, 0.04], .66	0.02 [-0.02, 0.06], .27	0.05 [-0.01, 0.01], .13	0.06 [0.01, 0.12], .05
Focus (T)	0.44 [0.21, 0.67], .00**	0.33 [0.18, 0.49], .01*	-0.43 [-0.80, -0.05], .07	0.00 [-0.21, 0.21], .99
Explore (T)	0.49 [0.25, 0.72], .01*	0.32, [0.14, 0.50], .01*	-0.25 [-0.55, 0.06], .12	0.10 [-0.11, 0.32], .35
Link (T)	0.11 [-0.15, 0.37], .43	0.02 [-0.04, 0.08], .48	0.00 [-0.06, 0.08], .84	-0.15 [-0.42, 0.11], .31
Acknowledge (P)	0.01 [-0.02, 0.05], .63	0.04 [0.01, 0.07], .04*	0.03 [-0.03, 0.09], .31	-0.00 [-0.03, 0.02], .78
Focus (P)	0.00 [-0.03, 0.03], .91	0.02 [-0.01, 0.05], .34	0.00 [-0.04, 0.04], .83	-0.01 [-0.04, 0.02], .60
Explore (P)	0.09 [0.02, 0.17], .02*	0.06 [0.00, 0.13], .07	-0.07 [-0.21, 0.06], .33	0.05 [-0.03, 0.14], .27
Link (P)	0.01 [-0.01, 0.03], .38	0.01 [-0.00, 0.03], .16	0.01 [-0.03, 0.05], .65	-0.01 [-0.03, 0.00], .11

Note. P = Patient, T = Therapist. PW = Patient Withdrawal Rupture Marker, PC = Patient Confrontation Rupture Marker, TW = Therapist Withdrawal Rupture Marker, TC = Therapist Confrontation Rupture Marker. *$p < .05$, **$p < .01$, ***$p < .001$.

Table 4

Relationship Between Repair Strategies and Session-Level Repair Effectiveness

Strategy (Used By)	Repair Effectiveness of Patient Ruptures ***b* [95% CI], *p***	Repair Effectiveness of Therapist Ruptures ***b* [95% CI], *p***
Acknowledge (T)	0.58 [-1.21, 2.37], .53	1.27 [-0.49, 3.03], .16
Focus (T)	0.61 [0.25, 0.98], .01*	0.22 [-0.09, 0.53], .17
Explore (T)	0.60 [0.24, 0.95], .00***	0.29 [-0.02, 0.60], .07
Link (T)	1.51 [0.06, 2.98], .048*	1.15 [-0.26, 2.55], .16
Acknowledge (P)	4.36 [2.13, 6.59], .00***	3.88 [1.73, 6.02], .00***
Focus (P)	3.18 [-0.71, 5.65], .01*	3.15 [0.78, 5.51], .01*
Explore (P)	0.64 [-0.41, 1.69], .24	0.43 [-0.56, 1.43], .40
Link (P)	7.18 [3.20, 11.2], .00***	6.04 [2.06, 10.0], .00***

Note. P = Patient, T = Therapist. *$p < .05$, **$p < .01$, ***$p < .001$.

Table 5

Alliance Quality and "Working Together" as Moderators of Relationship Between Repair Strategies and Session-Level Repair Effectiveness

Moderator	Strategy (Used By)	Repair Effectiveness for Patient Ruptures *b* [95% CI], *p*	Repair Effectiveness for Therapist Ruptures *b* [95% CI], *p*
"Working Together"	Acknowledge (T)	2.61 [-0.74, 5.96], .13	2.20 [-1.31, 5.54], .20
	Focus (T)	0.51 [-0.03, 1.06], .07	0.52 [-0.02, 1.06], .07
	Explore (T)	0.69 [0.08, 1.29], .03*	0.77 [0.18, 1.35], .01*
	Link (T)	0.32 [-2.32, 2.97], .81	1.31 [-1.12, 3.75], .30
	Acknowledge (P)	-0.15 [-5.36, 5.05], .95	-0.67 [-5.63, 4.28], .79
	Focus (P)	0.96 [-5.04, 6.95], .76	-0.53 [-6.20, 5.14], .86
	Explore (P)	2.80 [0.61, 4.98], .02*	2.75 [0.65, 4.86], .01*
	Link (P)	0.60 [-5.81, 7.00], .86	2.92 [-3.47, 9.32], .37
Baseline Alliance Quality	Acknowledge (T)	-0.02 [-0.20, 0.15], .79	-0.00 [-0.22, 0.09], .40
	Focus (T)	0.49 [-0.05, 0.02], .08	-0.01 [-0.04, 0.03], .75
	Explore (T)	0.01 [-0.02, 0.04], .62	-0.00 [-0.03, 0.03], .88
	Link (T)	-0.16 [-0.01, 0.33], .07	-0.01 [-0.16, 0.15], .95
	Acknowledge (P)	0.05 [-0.20, 0.30], .69	-0.03 [-0.29, 0.23], .81
	Focus (P)	-0.05 [-0.26, 0.15], .61	-0.02 [-0.22, 0.17], .80
	Explore (P)	0.02 [-0.13, 0.17], .78	0.04 [-0.10, 0.18], .60
	Link (P)	0.04 [-0.28, 0.35], .82	0.00 [-0.31, 0.31], .99

Session 6 Alliance Quality	Acknowledge (T)	1.83 [-1.03, 4.70], .22	1.84 [-0.88, 4.55], .19
	Focus (T)	0.18 [-0.32, 0.67], .49	0.11 [-0.37, 0.59], .65
	Explore (T)	0.23 [-0.08, 0.55], .15	0.26 [-0.04, 0.55], .10
	Link (T)	0.03 [-1.22, 1.28], .96	0.28 [-0.83, 1.39], .62
	Acknowledge (P)	-1.50 [-4.17, 1.17], .28	-1.91 [-4.53, 0.71], .16
	Focus (P)	0.01 [-3.65, 3.68], .99	-0.51 [-4.16, 3.14], .78
	Explore (P)	0.83 [-0.14, 1.80], .10	1.12 [0.16, 2.07], .03*
	Link (P)	-0.83 [-3.66, 5.32], .72	1.26 [-3.15, 5.67], .58

Note. P = Patient, T = Therapist. *$p < .05$, **$p < .01$, ***$p < .001$.