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The Anger-Depression Mechanism in Dynamic Therapy: Experiencing Previously Avoided Anger Positively Predicts Reduction in Depression via Working Alliance and Insight

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Author Note

We have no conflict of interest to disclose. The data reported in this manuscript have been previously published and were collected as part of a larger data collection. Findings from the data collection have been reported in separate manuscripts. MS 1 (Town, J. M., Abbass, A., Stride, C., & Bernier, D. (2017). A randomised controlled trial of Intensive Short-Term Dynamic Psychotherapy for treatment resistant depression: the Halifax Depression Study. J Affect Disord, 214, 15-25) focuses on change in PHQ-9 scores at baseline, 3- and 6-month. MS 2 (Efficacy and cost-effectiveness of intensive short-term dynamic psychotherapy for treatment resistant depression: 18-Month follow-up of the Halifax depression trial. *J Affect Disord, 273*, 194-202) focuses on change in HAM-D, PHQ-9, GAD-7, IIP-32, PHQ-15 scores from baseline to 18-months and a cost-effectiveness analysis. MS 3 (the current manuscript) focuses on the associations between scores on PHQ-9, ATOS affect experiencing scale, ATOS insight scale, Agnew Relationship Measures (ARM-5) over weekly sessions.

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Abstract

Objective: A central tenet of psychodynamic theory of depression is the role of avoided anger. However empirical research has not yet addressed the question of for which patients and via what pathways experiencing anger in sessions can help. The therapeutic alliance and acquisition of patient insight are important change processes in dynamic therapy and may mediate the anger-depression association.

Methods: This study was embedded into a randomised trial testing the efficacy of Intensive Short-Term Dynamic Psychotherapy (ISTDP) for treatment resistant depression. In-session patient affect experiencing (AE) was coded for every available session (475/481) by blinded observers in 27 patients randomized to ISTDP. Dynamic Structural Equation Modelling was used to examine within-person associations between variation in depression scores session-by-session and both patient ratings (alliance) and observer ratings (AE and insight) of the treatment process.

Results: Alliance and insight were independent mediators of the effect of anger on next-session depression. However, the relative importance of these two indirect effects of anger on depression was conditional on pre-treatment patient personality pathology (PP). In patients with higher PP, in-session anger was negatively related to depressive symptoms next-session, with this effect operating through higher alliance. In patients with low PP, in-session anger was negatively related to depressive symptoms next-session, with this effect operating through enhanced patient insight.

Discussion: These findings highlight an anger-depression mechanism of change in dynamic therapy. Depending upon patient personality, either an ‘insight pathway’ or a ‘relational

pathway' may promote the effectiveness of facilitating arousal and expression of patients' in-session feelings.

Key words: depression, psychodynamic, insight, affect experiencing, anger, alliance

Public Health Significance Statement

This study highlights the importance of addressing avoided feelings of anger when treating depression in dynamic therapy. The effectiveness of this approach involves monitoring the development of the therapeutic alliance and acquisition of patient insight, according to a patient's personality functioning.

Looking beyond the results of efficacy studies for informing treatment recommendations for Major Depressive Disorder (MDD), psychotherapy research exploring mechanisms of change aims to test the clinical theories that therapists are recommended and trained to use in practice. The conceptualisation of depression as a psychological state of inverted anger is a central principle when treating MDD in psychodynamic therapies. Studies have shown that depressed patients commonly report supressing anger (Gilbert, Gilbert, & Irons, 2004) and turning anger inwards correlates with higher levels of depressive symptoms (Painuly, Sharan, & Mattoo, 2005). However, to date psychodynamic mechanisms research has not studied the association between patients experiencing anger in-sessions and subsequent levels of depression symptoms.

A Psychodynamic Model of Depression

There are multiple psychodynamic accounts of depression (Blatt, 1974; Bowlby, 1973; Freud, 1957; Klein, 1935). Although there is not a unified psychodynamic theory of depression, we offer a synthesis of key ideas. Psychodynamic theory posits that experiences of actual or perceived loss in relationships lead to feelings of anger toward the other, and to intolerable guilt about the anger. The individual attempts to cope by unconsciously defending against the anger and guilt by turning the anger against the self, resulting in depressive symptoms. As a result, patients present with chronic irritability, self-reproach, and aggression toward the self (Busch, 2009; Freud, 1957). Feelings of sadness related to the loss of a wished-for state can similarly fail to be adequately acknowledged. Instead, a person can experience a persistent state of hopelessness or pathological mourning that prevent them from moving forward (Bowlby, 2008). The individual's subjective experience of loss and depression is related to their self-other representations and to features of their personality (Blatt, 1998). The preponderance of negative representations of self and others, and the negative feelings such as anger that result are

themselves defended against, at great cost to the individual. The experience of loss that lies at the heart of depression is preserved in autobiographical affective memory structures, and resolution of depression is assumed to require affective arousal and experiencing (AE) to access these structures. Emotions related to past adverse events can then be processed in a new and different way. Emerging neurobiological findings (Lane, 2018) support this assumption.

This theoretical understanding of aetiological factors in depression, suggests a model for changing depressogenic thoughts, feelings, and behaviours in dynamic therapy. Such a model should account for the role of patients' personality functioning, on the putative process of AE. The putative in-session process will involve a central focus on anger within relationships as a conflicted affective state. Alongside anger, examining other feelings such as sadness and guilt about anger, associated to adverse relational experiences, would reflect the perspective of a multidimensional role of affect in treating depression.

Affect-Depression Change Mechanism in Dynamic Therapy

As discussed, dynamic therapy for MDD assumes that the activation and subsequent dysregulation of conflicted emotions such as anger precedes the emergence of depressive symptoms (unprocessed affect → emergence of depression). Empirical studies of emotional processing as a psychotherapy change mechanism (Peluso & Freund, 2018) and specifically in dynamic therapy (Diener, Hilsenroth, & Weinberger, 2007) have been reviewed, indicating a positive association between increased experiencing and outcomes. Two recent studies, demonstrate the finding of a positive association between AE and outcome in dynamic therapy (Fisher, Atzil-Slonim, Bar-Kalifa, Rafaeli, & Peri, 2016; Keefe et al., 2019) and provide strong evidence that AE contributes to improved outcomes in dynamic therapy rather than being a product of ongoing symptom change.

In a precursor to the current study, using a single-case replication design, Town, Salvadori, Falkenström, Bradley, and Hardy (2017) replicated these findings in dynamic therapy for MDD. However, current research does not describe the mechanism by which in-session processing of anger, or other attachment related affects, drives change in depressive symptoms.

Moderators and Mediators of an Affect-Depression Association

Personality

Depressions differ depending on the patient's personality, among other factors (Gabbard & Simonsen, 2007), so that the interrelationship between depressive symptoms and personality have important implications for treatment. Empirical studies have shown the magnitude of treatment effects are moderated by a variety of primary manifestations of personality organization - including pre-treatment levels of personality pathology (Koelen et al., 2012); attachment style (Diener & Monroe, 2011); degree of object relations (Piper, McCallum, Joyce, Rosie, & Ogrodniczuk, 2001); alexithymia (Ogrodniczuk, Piper, & Joyce, 2011); and self-criticism (Blatt, Zuroff, Hawley, & Auerbach, 2010). It is assumed that patients with higher levels of personality organization are likely to have more adaptive psychological structures, allowing them to more readily utilise dynamic interventions in therapy to activate mechanisms of change such as AE, with the resultant therapeutic changes.

To our knowledge, this assumption has only been tested in one study. Keefe et al. (2019) examined the moderating effect of personality disorder traits on the relationship between emotional expression and symptom improvement in panic focused psychodynamic psychotherapy. They found that patients with more primitive personality organizations, indicated by meeting two or more DSM criteria for borderline personality disorder, showed no beneficial AE-outcome relationship. Post-hoc observations of the AE-outcome association in dynamic

therapy for MDD also suggested that impairment in personality functioning could account for the lack of significant process-outcome associations (Town, Salvadori, et al., 2017).

Based upon these theories and empirical data, AE may be better modelled as having an indirect effect on outcomes via multiple (mediator) variables, with the identity of the most active mediator conditional on patient personality characteristics. The early development of talking therapy highlighted two candidate mediators: the role of insight through interpretation, versus supportive or relationship aspects of treatment. Both patient insight (Jennissen, Huber, Ehrenthal, Schauenburg, & Dinger, 2018) and the therapeutic alliance (Flückiger, Del Re, Wampold, & Horvath, 2018) have since been established as predictors of psychotherapy outcome. In psychoanalysis, acquisition of insight was initially viewed as the primary vehicle for change, however, to broaden therapy to fit different patients, treatments began to emphasize relational factors (Alexander & French, 1946). For patients with personality impairment, who have limited anxiety tolerance and utilise more primitive defences, 'supportive' interventions that cement the relationship are assumed to be particularly important. Whereas dynamic techniques promoting insight have been described as 'expressive' interventions and are recommended to the degree a patient has adequate ego capacity and ability to reflect upon relationships.

Therapeutic Alliance

Recent research on patterns of alliance development over psychotherapy sessions suggests that different patterns do exist across patients and *one size does not fit all* (Zilcha-Mano & Errázuriz, 2015). Patients presenting with higher levels of personality difficulties may depend more on the alliance for positive treatment outcomes (Falkenström, Ekeblad, & Holmqvist, 2016; Zilcha-Mano & Errázuriz, 2015). These studies indicate that subgroups of patients based on personality factors may benefit from distinct patterns of alliance development. Furthermore,

alliance-outcome associations may also differ between modalities when individual patient characteristics are controlled for (Bedics, Atkins, Harned, & Linehan, 2015; Zilcha-Mano, Roose, Barber, & Rutherford, 2015). These findings point to an interaction between therapeutic alliance, patient characteristics and other therapeutic ingredients to predict outcomes.

Insight

Psychodynamic theorists have described the putative function of insight as enabling patients to find new solutions or more adaptive ways of behaving, which in turn lead to improvements in symptoms (Gabbard, 2014). Empirical studies of dynamic therapy have shown that insight increases over treatment (Gibbons et al., 2009), and is generally associated to symptom change (Gibbons et al., 2009; Johansson et al., 2010). Secondary analyses of three randomized controlled trials of dynamic therapy found that patient insight into dynamic patterns acted as a mediator of outcomes (Johansson et al., 2010; Kallestad et al., 2010) - and that improved insight is necessary for long-term treatment effects (Høglend & Hagtvet, 2019). Rather than attempting to confirm or deny past polarized positions on insight as the primary active ingredient in dynamic therapy, it is more likely that in some circumstances, and for specific patients, eliciting insight is especially impactful.

Current Study

Time-limited Intensive Short-Term Dynamic Psychotherapy (ISTDP) (Abbass, 2015; Davanloo, 2000) for MDD is a 20-session treatment that is efficacious and cost-effective for treatment resistant depression in one study conducted in Canada (Town, Abbass, Stride, & Bernier, 2017; Town et al., 2020). ISTDP focuses on mobilizing and experiencing complex emotional states, including unacknowledged anger towards attachment figures. Through

recognizing and experiencing emotions, the patient is hypothesized to rely less on implicit tendencies towards defensive avoidance of emotions that perpetuate depressive symptoms.

Collectively, the current theoretical and empirical literature points to several key findings regarding putative processes of change in dynamic therapy relevant to ISTDP and the optimal treatment for depression. First, studies by Fisher et al. (2016) and Keefe et al. (2019) demonstrate that in-session patient AE is an independent predictor of improvement in symptom difficulties rather than a consequence of improvements. However, to quantify dynamic theory that AE is a treatment mechanism in depression, this session-to-session process-outcome association should be replicated for change in depression symptoms. Furthermore, the putative role of patients experiencing anger requires confirmation and secondary analyses should quantify the role of guilt about anger and sadness. Second, while empirical research has shown that pre-treatment levels of patient personality functioning can moderate the effect of therapy on treatment outcomes, only one study provides evidence that personality characteristics may affect capacity for in-session AE (Keefe et al., 2019). Third, although empirical findings suggest that developing a patient-therapist alliance and the acquisition of patient insight are important in dynamic therapy, it is much less clear if, and potentially how, these variables interact with in-session patient AE to facilitate change in symptoms. Multiple measures of personality functioning exist beyond a categorical nosology of personality disorder. As patients with high levels of personality organization typically exhibit fewer primitive defenses, experience fewer interpersonal problems, and better capacity for self-reflection and insight on emotions (McWilliams, 2011), we believe insight is more likely to be an active ingredient in therapy for these patients. On the other hand, for patients with lower personality organization who experience difficulties in reality-testing (seen with primitive defences such as projection and

splitting) and affect regulation (heightened alexithymia), we expect a more central role for a strong alliance in mediating the helpfulness of experiencing anger. There is accumulating evidence to suggest that the therapeutic alliance is a particularly important change process for patients with a greater burden of personality problems (e.g., Falkenström et al., 2016). In these patients, we believe a conscious therapeutic alliance can be understood as a marker of sufficient restructuring of primitive defence and difficulties observing emotions. AE can then lead to greater integration of emotions through development of a strong therapeutic relationship, rather than emotions being disowned using primitive defences.

Hypotheses

The following hypotheses were made *a priori*:

(1) The association between in-session AE of anger and self-reported depressive symptoms in the next 7 days will be moderated by patient pre-treatment personality pathology (PP), such that patients with higher PP will be more likely to report a weaker negative relationship between AE and depression.

(2) The relationship between AE of anger and depression will operate indirectly, via two mediators, the therapeutic alliance and patient insight, with these indirect effects conditional: (a) we expect that the alliance will be the more critical mediator for patients with higher pre-treatment PP and, (b) insight will be the more critical for patients with lower pre-treatment PP

We will test each hypothesis using three models of AE: the primary analyses will be conducted on ratings of patient's experiencing of anger, secondary analyses will be conducted on ratings of patient's experiencing of sadness and also guilt about anger.

Methods

Participants

This study combines the collection of new observer-rated process data with secondary analysis of self-report process and outcome data for participants receiving time-limited ISTDP collected as part of the Halifax Depression Study (Town, Abbass, et al., 2017). The original superiority trial used a single blind randomised parallel group design to examine the efficacy of ISTDP versus secondary care treatment provided by community mental health teams (CMHTs), for treatment resistant depression (TRD). The original trial protocol was registered with ClinicalTrials.gov (ID: NCT01141426) and both studies approved by the Nova Scotia Health Authority Research Ethics Board (NSHA-RS/2013-049). All participants provided written informed consent.

The Halifax Depression Study included eligible patients aged 18-65 years, with a primary diagnosis of major depressive disorder according to DSM-IV criteria. Patients met study criteria for TRD by having had at least one trial of antidepressants at the adequate recommended therapeutic dose; a current depressive episode duration of 6 or more weeks; inadequate response to treatment (assessed by 17-item HAM-D score ≥ 16); not having started further medication or changed dose of existing medication in the previous 6 weeks; and not having received treatment in the previous 2 years at any of the 4 CMHTs. Sixty participants were allocated to ISTDP or CMHT treatment in a 1:1 ratio (i.e., 30 patients randomly assigned to each group). The final sample for the current study, which utilises data from just the ISTDP group, was 27, after two participants failed to start ISTDP and one participant received only one session. The mean age of the participants in the ISTDP group was 38.9 years (SD = 11.87); 17 (56.7%) were women; all were white; 25 (86.2%) had comorbid personality disorder of which 21 (70%) met criteria for a Cluster C personality disorder; 28 (93.3%) had a comorbid Axis I disorder. Audio-visual

recordings of treatment provided within CMHTs were not available therefore it was not possible to collect observer rated process data from this treatment arm for the purposes of this study.

Treatment

The ISTDP model is a brief psychotherapy format that helps the patient identify and address the emotional factors that culminate into, exacerbate and perpetuate depression. The treatment provided is discussed in detail in our earlier study (Town, Abbass, et al., 2017). ISTDP was provided according to a 20-session time-limited, individual format, and delivered according to published recommendations (Abbass, 2015; Davanloo, 2000). The mean number of ISTDP sessions completed in the RCT was 16.1 (SD = 6.68) across 30 patients. In the current study sample, 475 session were available from a total of 481, nested within 27 patients. Any missing data was due to a problem recording the treatment session. ISTDP therapists were licensed professionals with supervised experience practicing ISTDP (mean experience = 10.25 years, range = 4-20 years). The integrity of the ISTDP intervention as a form of dynamic therapy was established by trained independent researchers (Town, Abbass, et al., 2017).

Outcome Measure

The primary outcome measure for this study was the 9-item Patient Health Questionnaire, PHQ-9 (Kroenke, Spitzer, & Williams, 2001). The PHQ-9 is a brief self-report questionnaire for measuring the severity of symptoms of depression, demonstrating good reliability and validity in psychometric studies (Kroenke et al., 2001). Internal consistency was high for the PHQ-9 (Cronbach's alpha = .900) The PHQ-9 was completed by each patient at baseline, and before each psychotherapy session.

Moderator Variable

Central impairments in personality functioning have been described in interpersonal relationships and underlying difficulties in mental representations of self and other (Kernberg, 1984; Pincus, 2005). A composite measure of personality pathology (PP) was thus derived from three reliable and validated self-report scales: Toronto Alexithymia Scale-20 (TAS-20) (Bagby, Taylor, & Parker, 1994); the Inventory of Interpersonal Problems 32-item (IIP-32) (Horowitz, Alden, Wiggins, & Pincus, 2000); and the Defense Style Questionnaire (DSQ-40) (Andrews, Singh, & Bond, 1993). These scales relate to domains of functioning common across personality pathology: affective, social-interpersonal and cognitive style, respectively (Mischel & Shoda, 2008). Alexithymia, interpersonal functioning and defense style are considered distinct but overlapping dimensions of personality functioning. The decision to combine measures in a composite score enables an examination of one global metric of personality functioning rather than multiple related scales. These moderator scales were assessed at baseline, prior to study randomization.

The IIP-32 was completed to assess severity of interpersonal problems. Previous research has demonstrated this version of the IIP-32 has a 7-day test-retest reliability coefficient of r = 0.78 (Horowitz et al., 2000) and good convergent validity with other self-report personality measures (Morse & Pilkonis, 2007). The IIP-32 had an internal consistency of $\alpha = .85$.

The TAS-20 is a 20-item patient self-report measure that was used to assess the degree to which a participant could be considered alexithymic. Alexithymia is defined as impairment in the ability to understand, process and describe emotions. The convergent, discriminant and concurrent validity of the TAS-20 have been shown to be good (Bagby et al., 1994). The TAS-20 was internally consistency in this study ($\alpha = .81$).

The DSQ-40 is a patient self-report measure assessing patients' conscious awareness of their characteristic style of dealing with conflict. It yields three higher order factors relating to mature, neurotic and immature defense styles. Previous research has reported the psychometric properties, including high internal consistency and temporal stability appropriate in a state measure (Andrews, Singh & Bond, 1993). Findings from one meta-analysis showed the DSQ three-factor structure has discriminant validity for MDD (Calati, Oasi, De Ronchi, & Serretti, 2010). In this study, the DSQ-40 immature scale had an internal consistency of $\alpha = .70$.

Process Measures

Self-Report Measures

Participant rated therapeutic alliance data was collected using the 5-item Agnew Relationship Measure (ARM-5), completed immediately after each therapy session. It is a short-form version of the 28-item measure developed to represent an overall alliance score (Agnew-Davies, 1998). The ARM-5 had an internal consistency of $\alpha = .89$. Previous demonstrated the ARM-5 has acceptable psychometric properties (Cahill et al., 2011).

Observer Rated Measure

The Affective Experiencing Scale (AES) and Insight Scale (IS), taken from the Achievement of Therapeutic Objectives Scale (ATOS) (McCullough et al., 2003), were used in the present study to measure patient emotional arousal and patient insight respectively. Previous studies have found that the ATOS has adequate psychometric properties. Using generalizability analyses, Berggraf et al. (2012) demonstrated that ATOS is sensitive to differences among patients and differences were found among subscales within patients. They reported a generalizability coefficient of .90 and .88 on the AES and IS respectively, indicating the scales can be used across patient samples. Evidence of the validity of the ATOS subscales include

studies that examined the theoretically derived factor structure (Ryum et al., 2014), predicted relationships with other process variables (Town, Hardy, McCullough, & Stride, 2012) and outcome variables (Berggraf, Ulvenes, Hoffart, McCullough, & Wampold, 2014).

For AE and insight ratings, each session is divided into 10-minute segments and rated using audio-visual session recordings. Insight is defined as recognition of links between maladaptive patterns of anxiety, defense and feelings, as operationalized in the Triangle of Conflict (Malan, 1979). At higher levels of Insight, connections between the Triangle of Conflict and Triangle of Person (Malan, 1979) are seen. Using the IS, raters consider the clarity of patient's description of maladaptive patterns and ability to describe why and how the patterns are maintained. For AE, raters consider three components of emotional arousal grounded in behavioral examples: peak degree of arousal, duration of the affective response and relief in the experience of the feeling. AE is considered adaptive when feelings about another's perceived or actual actions can be tolerated without a preponderance of defensive affect or anxiety. A score is then awarded between 1 and 100, with higher scores reflecting greater Insight and fuller AE. For the purposes of this study, the original ATOS manual was modified to standardize the coding for ISTDP material (ATOS-I) (Town, Chafe, & Pienkos, 2014). Judges were trained and instructed to rate three specific affect categories on the AES:

AES Anger. Ratings of anger were defined as a patient expressing in-session, and to some degree experiencing, angry feelings toward another. Anger was typically rated when patients cognitively identifying reactive anger related to a perceived theme of an unmet attachment need, trauma or abuse. This could relate to current, past or the therapeutic relationship (transference) with the therapist. Healthy anger was differentiated from maladaptive

expressions of primarily anxiety or defense, which may take the form of a discharge of tension, a tantrum, or self-criticism. Higher ratings required greater evidence of in-session bodily arousal.

AES Sadness. Sadness was defined as an emotional experience related to the actual or perceived loss of a wished-for state within an important relationship. Ratings of adaptive sadness are easily confused with tears associated with hopelessness, helplessness, shame or heightened anxiety. Sadness related to the impact of a patient understanding the damaging impact of behavioral or interpersonal patterns (defenses) was coded on a different ATOS scale.

AES Guilt about Anger. The adaptive components of guilt come when a patient experiences regret, typically over imagined thoughts of doing harm towards someone they care about. Some of the components include a verbal report of regret, patients describing constriction in the upper chest, a wish to reverse what was done, a desire for reunification and showing caring/tender feelings towards the target of their anger. Guilt about the anger will typically be accompanied by tears as experiencing increases. Adaptive guilt is differentiated from thoughts of self-loathing and shame, dominating the person in a self-critical or punitive manner.

Procedure

Judges and Training

Observer ratings of AE and Insight were conducted by ten judges, four Bachelor Honors level psychology students, two psychology Masters students, and four clinical psychology PhD students. Judges were provided 16-20 hours of training on four of the ATOS scales, including the AES and IS, by an experienced ATOS rater. Judges then rated a series of training tapes to assess rater reliability against expert generated ratings. To participate, all judges were required to achieve a reliability criterion of greater or equal to .70.

Rating procedure

Judges worked in pairs to rate an entire ISTDP treatment course for a participant. They were given the ATOS-I manual (Town et al., 2014), written instructions identifying the participant code and anonymized tape number, to be coded. Judges viewed sessions in 10-minute segments, pausing between each to independently generate a rating on the relevant scales including the ATOS-AES for each affect category. Consensus was then reached on the final scores to be awarded through discussion. Coding drift was monitored through regular meetings to review exemplar material alongside established coding criteria. Judges' pairings were also rotated to minimize the possibility of further drift. Inter-rater reliability was calculated between the two raters using a two-way random effects model [ICC 2,1] for each 10-minute segment. The judges demonstrated ICC values in the good range (.61-.80) based on Shrout and Fleiss (1979), on the IS, insight = .771, and in the excellent range (>.81) across each affect category on the AES, anger = .863, sadness = .831, guilt = .863.

Statistical Analyses

The data in this study consisted of repeated observations (sessional data) for each patient, with study variables collected at each session therefore having within and between patient variance components. Given the large number of sessions (20), Dynamic Structural Equation Modeling (Asparouhov, Hamaker, & Muthén, 2018), which combines aspects of time-series analysis (traditionally used in single-case designs with a large number of time points) with Multilevel Modeling and Structural Equation Modeling offered the most suitable analytic structure for testing our hypotheses. (Schultzberg & Muthén, 2018). Figure 1 shows a path diagram of the final moderated mediation model.

We did not model therapist effects, since Falkenström, Solomonov, and Rubel (2020) recently showed using Monte Carlo simulations that this does not affect estimates of within-

patient effects, and with small number of therapists it may increase bias. Because of the complexity of the models and the relatively small sample, we built the models in steps starting with separate bivariate regression models, then putting these together into mediation models, and finally testing the moderated mediation models. This sequential approach enabled troubleshooting so that any large deviations between results from the simpler models and the more complex ones would be detected and checked early on. However, since results changed very little between these steps, we present results only for the final moderated mediation models. Recommendations for interpretations of effects are provided within the Online Supplement.

Models were estimated using Bayesian imputation, in which each missing value has its own posterior distribution. This approach assumes data is Missing At Random (Asparouhov & Muthén, 2010).

Power Analysis/Test of Estimator Performance

Due to the small sample and the complex models analyzed, we ran a series of Monte Carlo simulations to check statistical power and estimator performance. For the primary within-patient paths (i.e., AE → insight/alliance, and insight/alliance → depression), statistical power to find small standardized effects (β = .10) was between 54 – 68%, while for medium-sized effects (β = .20) power was 98 – 100%. Average coefficient bias was small (1.2 – 2.9%), and coverage of 95% credible intervals was excellent (93.8 – 95.1%). Power for indirect effects was 35-36% for small effects (a × b = 0.01) and 97-98% for medium-sized effects (a × b = 0.04). Statistical power was reasonably good even with an N as small as 27 because power for within-person effects are determined not just by N, but also by T – the number of repeated measurements.

Although the excellent coverage of the 95% credible intervals should ensure correct Type-I error rate, we re-ran the simulations with all population coefficients set to zero to test the

"empirical alpha level", i.e., the proportion of times the estimator yields a statistically significant coefficient estimate despite it being zero in the population. This should be close to 5%. Results showed that the largest alpha level for any within-patient coefficient was 6.1%, for between-patient coefficients it was at most 3.8%, and for indirect effect estimates it was 0.3%. Thus, there was no indication of increased levels of spurious coefficients.

Results

Table 1 shows descriptive statistics for all included variables. Although 475/481 sessions were rated using the ATOS, the frequency of ratings on the AES and IS do not correspond exactly to the number of rated sessions as observable evidence of these processes was not evident in every session. There were moderate to strong intercorrelations among the IIP-32, TAS-20 and DSQ-40 immature subscale ($.33 < r < .66$). These were combined into the PP index by first standardizing each variable and then taking their arithmetic mean. This PP index had an internal consistency of $\alpha = .77$. The correlations between the three affects anger, guilt and sadness were moderate ($.47 < r < .49$). We chose to enter these as separate predictors given the potential theoretical and clinical importance if results are different among these affects.

Direct Effects of Anger, Guilt and Sadness on Next-Session Depression

There was a moderated direct effect of anger on next-session depression (PP × anger 0.08, SD = 0.03, $p = .004$, 95% CI [0.03, 0.14], with simple slopes analysis showing that only at low PP (one SD below average) was there a direct effect of more experience of anger predicting less severe depressive symptoms (-0.10, SD = 0.04, $p = .03$, 95% CI [-0.19, -0.02]). For guilt and sadness, the direct effect was statistically non-significant, and there was no moderation effect (all $p > .40$). However, this does not preclude the possibility of mediation effects (Hayes, 2009).

The Indirect Effect of Experiencing In-Session Anger on Next-Session Depression

Table 2 shows the results from the moderated mediation model including both insight and alliance as mediators of the anger → depression effect. As an omnibus test of all coefficients involved in the moderated mediation, we compared the Deviance Information Criterion (DIC) between a model in which all of these coefficients (eight in total) were set to zero and one in which all coefficients were freely estimated. This comparison favoured the model in which the moderated mediation parameters were estimated ($DIC_{null} - DIC_{est} = 45.16$). PP significantly moderated the paths from anger → insight (interaction effect = -0.09, SD = 0.04, $p = .03$, 95% CI -0.16, -0.01) and anger → alliance (interaction effect = 0.09, SD = 0.03, $p < .001$; 95% CI 0.04, 0.14). Simple slopes analysis showed that at low (one SD below the mean) and at mean PP, insight was a significant mediator in the hypothesized direction (low PP indirect effect = -0.02, SD = 0.01, $p = .03$, 95% CI [-0.04, -0.00][1], mean PP indirect effect = -0.01, SD = 0.01, $p = .03$, 95% CI [-0.03, -0.00]), but at high PP (one SD above the mean) insight was not a significant mediator ($p = .43$). For alliance, the opposite was the case, with significant mediation only at high PP (indirect effect = -0.01, SD = 0.01, $p < .05$, 95% CI [-0.03, -0.00]. Figure S1 (see Online Supplement) shows the indirect effects with 95% credible intervals from -2 standard deviations below to +2 standard deviations above mean PP and Figure S2 shows the simple slope estimates by personality pathology.

There was also significant moderation of the direct effect of experiencing anger on next-session depression (interaction effect = 0.09, SD = 0.03, $p < .001$, 95% CI [0.04, 0.14]). This time, with both mediators included in the model, simple slopes analysis showed that at low PP the direct effect was significantly negative (direct effect = -0.10, SD = 0.04, $p = .03$, 95% CI [-

[1] Due to rounding decimal places, credible intervals may include .00, for instance when the coefficient is negative and the upper limit is very close to zero.

0.19, -0.01]), i.e., indicating that experience of anger positively predicted improvement in depressive symptoms by the next session. However, at high PP the direct effect was positive, indicating that more experience of anger predicted deterioration in depressive symptoms by the next session (direct effect = 0.08, SD = 0.04, p = .03, 95% CI [0.01, 0.16]). Figure S3 (see Online Supplement) shows the direct effect with 95% credible intervals from -2 standard deviations below to +2 standard deviations above mean PP.

The Effect of Experiencing Guilt in the Session

When guilt was used as predictor, the omnibus test again favoured the moderated mediation model over the null model ($DIC_{null} - DIC_{est} = 38.49$). The moderator effects for insight was statistically significant (interaction effect = -0.12, SD = 0.05, p = .02, 95% CI [-0.22, -0.02]), with simple slopes analysis indicating the same pattern as for anger with significant mediation at low (indirect effect = -0.03, SD = 0.02, p = .01, 95% CI [-0.07, -0.01]) and mean PP (indirect effect = -0.02, SD = 0.01, p = .01, 95% CI [-0.05, -0.01]), but not at high PP (p = .09). For alliance, the moderation by PP was non-significant (p = .98). When the analysis was re-run without the moderation of PP × alliance, mediation was not quite significant for the guilt → alliance → depression (indirect effect = -0.01, SD = 0.01, p = 0.054, 95% CI [-0.02, 0.00]). The direct effect was also non-significant (p = .65) and there was no moderation for the direct effect (p = .68).

The Effect of Experiencing Sadness in the Session

For Sadness, the results were very similar to the results for guilt, again with the omnibus test favouring the moderated mediation model ($DIC_{null} - DIC_{est} = 38.28$). The sadness × PP → Insight moderation was statistically significant (interaction effect = -0.12, SD = 0.06, p = .04, 95% CI [-0.24, -0.00]), with simple slopes analysis showing significant mediation at low

(indirect effect = -0.03, SD = 0.01, p = .01, 95% CI [-0.06, -0.00]) and mean PP (indirect effect = -0.01, SD = 0.01, p = .01, 95% CI [-0.04, -0.00]) but not at high PP (p = .64). The sadness × PP → alliance moderation was non-significant (p = .40), and re-estimating without this interaction showed that the indirect effect was not quite significant (indirect effect = -0.01, SD = 0.01, p = 0.056, 95% CI [-0.02, 0.00]). Also, the direct effect was non-significant (p = .79) and there was no moderation of the direct effect (p = .19).

Discussion

We aimed to test a psychodynamic theory of change in depression, by examining the effect of a patient experiencing, and expressing feelings of anger in sessions, on levels of depression symptoms at the next session. Prospectively embedding this study into an RCT design importantly allowed us to establish a measurement timeline that enabled the anger-depression mechanism (↑ anger → ↓ depression) to be elaborated by testing with which patients and via what pathways does experiencing negative feelings promote reduced depressive symptoms.

Anger-Depression Mechanism of Change

This is the first study to demonstrate that in dynamic therapy for MDD, patients experiencing anger in-session positively predicts the degree of reduction in depressive symptoms 7 days later. Consistent with dynamic theory, we found that this association was conditional on the moderating role of patient personality functioning. This result underscores our central hypothesis that facilitating AE of anger to reduce depression, is more accurately understood through the lens of differences in patients' personality functioning (PP × anger → depression).

Personality Factors: A Relational Path for Some, an Insight Path for Others

A second key new finding disproves the view of a single pathway of change in dynamic therapy for depression. The current moderated-mediation findings extend clinical theory

(McWilliams, 2011; Westen, Gabbard, & Blagov, 2006) by describing two pathways for personalizing dynamic therapy based upon patients' personality functioning. For patients who typically experience difficulties holding a balanced and integrated sense of self and others, following the mobilisation of emotions in-session, a relational path, evidenced by an enhanced alliance such as an improving bond with the therapist and clearer task agreement, can be tracked to indicate a positive therapeutic process (high PP × ↑ anger → ↑alliance → ↓depression). On the other hand, for patients with generally more positive and stable perceptions of self and others, an insight-based path, that helps them to experience and express their feelings is beneficial when it allows for a deeper emotional insight (low PP × ↑ anger → ↑ insight → ↓ depression).

The importance of insight is consistent with the principle of patients needing to consciously extract meaning from an emotional response (Lane, 2018) and previous findings associating outcomes in dynamic therapy to increased understanding into dynamic patterns (Johansson et al., 2010; Kallestad et al., 2010). The proposed relational pathway of change supports the suggestion that alliance may interact with therapist technique and other process variables to predict outcomes (Beutler, Forrester, Gallagher-Thompson, Thompson, & Tomlins, 2012). This is in line with the work of Ulvenes et al. (2012) demonstrating that the effectiveness of an affect focus in dynamic therapy can in part be understood through the role of the alliance. Zilcha-Mano (2017) suggested that the alliance is therapeutic through providing a *corrective emotional experience* (Alexander & French, 1946). In light of these new findings, we propose that the putative role of the alliance may work through a more complex change mechanism involving AE: experiencing and expressing feelings in the therapy relationship can sometimes generate a *corrective emotional experience*. Our data showed that this seemed to happen for

patients high on personality pathology, as demonstrated by AE predicting improving alliance which in turn, predicted symptomatic improvement.

While the efficacy of dynamic therapy has been demonstrated in patients with impairments in personality in the setting of MDD (Abbass, Town, & Driessen, 2011), some patients do not benefit. We found that when anger did not affect the mediators, insight or therapeutic alliance, it appears that the improvements in depression following increased experience of anger are only evident in low personality pathology patients, with possible negative effects of anger experiencing in higher personality pathology patients. This might suggest that one means of optimizing treatment outcomes in dynamic therapy for depression, specifically in patients with more severe personality difficulties, is studying how to more consistently mobilise feelings while also activating a strong alliance for some patients for whom otherwise effects may be delayed or potentially negative. To do so, therapists should attend to the in-session impact of alexithymia, syntonic defences and potentially problematic interpersonal processes. An alternative interpretation is that in the context of a strong therapeutic alliance, anger experiencing is related to decreased depression (Høglend et al., 2011).

The Role for a Broader Affect-Depression Mechanism

Secondary analyses conducted in this study, found that the effectiveness of dynamic therapy for depression involves patients experiencing and expressing a range of mixed feelings about close relationships, although the magnitude of the associations were greatest with anger. Processing the trauma of ruptured attachment bonds includes sadness about losses and painful guilt when faced with anger towards loved ones. The smaller number of available observations for guilt and sadness may have contributed to the somewhat weaker results for these variables.

Existing findings on the relative importance of patients experiencing different affects in dynamic therapy are mixed. An RCT of dynamic therapy for anorexia (Friederich et al., 2017) found that both anger and sadness were significantly associated to outcomes. In two studies, an RCT of panic focused psychodynamic therapy (Keefe et al., 2019) and an observational study of STPP for depression (Kramer, Pascual-Leone, Despland, & De Roten, 2014), patients experiencing sadness but not anger were responsible for the majority of the process-outcome association. Across this research, the relative degree to which treatments targeted the anger-depression mechanism is unclear, so drawing conclusions should be done with caution.

It is possible that the temporal sequence in which emotions are explored in therapy is also important. Transforming emotions in sequential phases during therapy has been proposed as a model that could span theoretical approaches (Pascual-Leone & Greenberg, 2007). The absence of a moderating effect of high personality pathology on the indirect effects of patients experiencing either guilt about anger or sadness through the alliance, reflects a difference compared to the mechanisms through which anger appears to work in therapy. These findings indicate that alliance mediates the positive effects of experiencing guilt and sadness on depression for all patients, regardless of pre-treatment personality pathology. One interpretation for these results, in line with the role of temporal phases of processing emotions, is that after an unlocking of anger, defences are sufficiently restructured such that the effects of high pre-treatment personality pathology is diminished. In contrast, it appears that post-session patient insight is only an important mediator of change, regardless of the nature of the affect type, in cases with lower personality pathology. Given previous findings that both improved insight and affect awareness are important for patients with low quality of object relations in longer-term

psychodynamic therapy (Høglend & Hagtvet, 2019), future research may explore differences in mechanism between short-term dynamic therapies and longer-term models.

Study Strengths and Limitations

The current process-outcome study was prospectively embedded into the Halifax Depression RCT (Town, Abbass, et al., 2017), allowing for the collection of detailed session-to-session process and outcome data, establishing a timeline for testing causality. Limitations include: a primarily White sample mostly meeting criteria for a Cluster C personality disorder, in that the results may not extend to more diverse populations, particularly given the importance of culture in emotional expression. Ratings of AE and insight were simultaneously rated by the same judges potentially inflating their correlation. While the sample size of treated patients is small (N = 27), the Monte Carlo simulation demonstrated that the study had sufficient power to find small-to-medium sized effects due to the large number of repeated measures data collected, at least for anger which had a greater number of observed data points than guilt and sadness.

In the majority of psychotherapy studies, it is assumed that process-outcome results are generalizable to the entire treatment process, despite only coding portions of sessions. Furthermore, studies are often limited by the validity of patient self-report when attempting to measure implicit emotional processes. In contrast, the current study used: a reliable and validated rating system for measuring patient AE and insight; ratings were conducted independently by assessors with excellent interrater reliability; sessions were rated in their entirety in a random sequence; and significantly, there was a negligible amount of missing data with 99% of sessions rated. With the benefits of this study design and complex analytic strategy, we believe that the current findings go a long way towards being able to offer a more reliable empirical picture of how depression changes in dynamic therapy than has previously been possible.

References

Abbass, A. (2015). *Reaching through Resistance*. Kansas City: Seven Leaves Press.

Abbass, A., Town, J., & Driessen, E. (2011). The efficacy of short-term psychodynamic psychotherapy for depressive disorders with comorbid personality disorder. *Psychiatry, 74*(1), 58-71. doi:10.1521/psyc.2011.74.1.58

Agnew-Davies, R. (1998). Alliance structure assessed by the Agnew Relationship Measure (ARM). *British Journal of Clinical Psychology, 37*, 155-172.

Alexander, F., & French, T. M. (1946). The corrective emotional experience. *Psychoanalytic therapy: Principles and application*.

Andrews, G., Singh, M., & Bond, M. (1993). The Defense Style Questionnaire. *Journal of Nervous and mental Disease*.

Asparouhov, T., Hamaker, E. L., & Muthén, B. (2018). Dynamic structural equation models. *Structural Equation Modeling: A Multidisciplinary Journal, 25*(3), 359-388.

Asparouhov, T., & Muthén, B. (2010). Bayesian analysis using Mplus: technical implementation. *Unpublished report*.

Bagby, R. M., Taylor, G. J., & Parker, J. D. (1994). The twenty-item Toronto Alexithymia Scale--II. Convergent, discriminant, and concurrent validity *Journal of psychosomatic research, 38*(1), 33-40.

Bedics, J. D., Atkins, D. C., Harned, M. S., & Linehan, M. M. (2015). The therapeutic alliance as a predictor of outcome in dialectical behavior therapy versus nonbehavioral psychotherapy by experts for borderline personality disorder. *Psychotherapy, 52*(1), 67.

Berggraf, L., Ulvenes, P. G., Hoffart, A., McCullough, L., & Wampold, B. E. (2014). Growth in sense of self and sense of others predicts reduction in interpersonal problems in short-term dynamic but not in cognitive therapy. *Psychotherapy Research, 24*(4), 456-469.

Beutler, L. E., Forrester, B., Gallagher-Thompson, D., Thompson, L., & Tomlins, J. B. (2012). Common, specific, and treatment fit variables in psychotherapy outcome. *Journal of Psychotherapy Integration, 22*(3), 255.

Blatt, S. J. (1974). Levels of object representation in anaclitic and introjective depression. *Psychoanal Study Child, 29*, 107-157. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/4445397

Blatt, S. J. (1998). Contributions of psychoanalysis to the understanding and treatment of depression. *Journal of the American Psychoanalytic Association, 46*(3), 723-752.

Blatt, S. J., Zuroff, D. C., Hawley, L. L., & Auerbach, J. S. (2010). Predictors of sustained therapeutic change. *Psychotherapy research, 20*(1), 37-54.

Bowlby, E. (2008). *Loss-Sadness and Depression: Attachment and Loss* (Vol. 3): Random House.

Bowlby, J. (1973). Attachment and loss: Volume II: Separation, anxiety and anger. In *Attachment and Loss: Volume II: Separation, Anxiety and Anger* (pp. 1-429): London: The Hogarth Press and the Institute of Psycho-Analysis.

Busch, F. N. (2009). Anger and depression. *Advances in Psychiatric Treatment, 15*(4), 271-278.

Cahill, J., Stiles, W. B., Barkham, M., Hardy, G. E., Stone, G., Agnew-Davies, R., & Unsworth, G. (2011). Two short forms of the Agnew Relationship Measure: The ARM-5 and ARM-12 *Psychotherapy research*.

Calati, R., Oasi, O., De Ronchi, D., & Serretti, A. (2010). The use of the defence style questionnaire in major depressive and panic disorders: A comprehensive meta-analysis. *Psychology and Psychotherapy: Theory, Research and Practice, 83*(1), 1-13.

Davanloo, H. (2000). *Intensive Short-term Dynamic Psychotherapy*. Chichester: Wiley.

Diener, M. J., Hilsenroth, M. J., & Weinberger, J. (2007). Therapist affect focus and patient outcomes in psychodynamic psychotherapy: a meta-analysis. *Am J Psychiatry, 164*(6), 936-941. doi:10.1176/appi.ajp.164.6.936

Diener, M. J., & Monroe, J. M. (2011). The relationship between adult attachment style and therapeutic alliance in individual psychotherapy: A meta-analytic review. *Psychotherapy, 48*(3), 237.

Falkenström, F., Ekeblad, A., & Holmqvist, R. (2016). Improvement of the working alliance in one treatment session predicts improvement of depressive symptoms by the next session. *Journal of Consulting and Clinical Psychology, 84*(8), 738.

Falkenström, F., Solomonov, N., & Rubel, J. A. (2020). Do therapist effects really impact estimates of within-patient mechanisms of change? A Monte Carlo simulation study. *Psychotherapy research*, 1-15.

Fisher, H., Atzil-Slonim, D., Bar-Kalifa, E., Rafaeli, E., & Peri, T. (2016). Emotional experience and alliance contribute to therapeutic change in psychodynamic therapy. *Psychotherapy, 53*(1), 105.

Flückiger, C., Del Re, A., Wampold, B. E., & Horvath, A. O. (2018). The alliance in adult psychotherapy: A meta-analytic synthesis. *Psychotherapy, 55*(4), 316.

Freud, S. (1957). Mourning and melancholia. In *The Standard Edition of the Complete Psychological Works of Sigmund Freud, Volume XIV (1914-1916): On the History of the Psycho-Analytic Movement, Papers on Metapsychology and Other Works* (pp. 237-258).

Friederich, H.-C., Brockmeyer, T., Wild, B., Resmark, G., de Zwaan, M., Dinkel, A., . . . Tagay, S. (2017). Emotional expression predicts treatment outcome in focal psychodynamic and cognitive behavioural therapy for anorexia nervosa: Findings from the ANTOP study. *Psychotherapy and Psychosomatics, 86*(2), 108-110.

Gabbard, G. O. (2014). *Psychodynamic psychiatry in clinical practice*: American Psychiatric Pub.

Gabbard, G. O., & Simonsen, E. (2007). The impact of personality and personality disorders on the treatment of depression. *Personality and Mental Health, 1*(2), 161-175.

Gibbons, M. B. C., Crits-Christoph, P., Barber, J. P., Wiltsey Stirman, S., Gallop, R., Goldstein, L. A., . . . Ring-Kurtz, S. (2009). Unique and common mechanisms of change across cognitive and dynamic psychotherapies. *Journal of Consulting and Clinical Psychology, 77*(5), 801.

Gignac, G. E., & Szodorai, E. T. (2016). Effect size guidelines for individual differences researchers. *Personality and individual differences, 102*, 74-78.

Gilbert, P., Gilbert, J., & Irons, C. (2004). Life events, entrapments and arrested anger in depression. *Journal of Affective Disorders, 79*(1-3), 149-160.

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication monographs, 76*(4), 408-420.

Høglend, P., & Hagtvet, K. (2019). Change mechanisms in psychotherapy: Both improved insight and improved affective awareness are necessary. *Journal of Consulting and Clinical Psychology, 87*(4), 332.

Høglend, P., Hersoug, A. G., Bøgwald, K.-P., Amlo, S., Marble, A., Sørbye, Ø., . . . Crits-Christoph, P. (2011). Effects of transference work in the context of therapeutic alliance and quality of object relations. *Journal of Consulting and Clinical Psychology, 79*(5), 697.

Horowitz, L. M., Alden, L. E., Wiggins, J. S., & Pincus, A. L. (2000). *Inventory of Interpersonal Problems*. London.

Jennissen, S., Huber, J., Ehrenthal, J. C., Schauenburg, H., & Dinger, U. (2018). Association between insight and outcome of psychotherapy: Systematic review and meta-analysis. *American Journal of Psychiatry, 175*(10), 961-969.

Johansson, P., Høglend, P., Ulberg, R., Amlo, S., Marble, A., Bøgwald, K.-P., . . . Heyerdahl, O. (2010). The mediating role of insight for long-term improvements in psychodynamic therapy. *Journal of Consulting and Clinical Psychology, 78*(3), 438.

Kallestad, H., Valen, J., McCullough, L., Svartberg, M., Høglend, P., & Stiles, T. C. (2010). The relationship between insight gained during therapy and long-term outcome in short-term dynamic psychotherapy and cognitive therapy for cluster C personality disorders. *Psychotherapy research, 20*(5), 526-534.

Keefe, J. R., Huque, Z. M., DeRubeis, R. J., Barber, J. P., Milrod, B. L., & Chambless, D. L. (2019). In-session emotional expression predicts symptomatic and panic-specific reflective functioning improvements in panic-focused psychodynamic psychotherapy. *Psychotherapy*.

Kernberg, O. (1984). Severe Personality Disorders (Psychotherapeutic Strategies. New Haven (Yale University Press) 1984.

Klein, M. (1935). A contribution to the psychogenesis of manic-depressive states. *International Journal of Psycho-Analysis, 16*, 145-174.

Koelen, J. A., Luyten, P., Eurelings-Bontekoe, L. H., Diguer, L., Vermote, R., Lowyck, B., & Bühring, M. E. (2012). The impact of level of personality organization on treatment response: A systematic review. *Psychiatry: Interpersonal & Biological Processes, 75*(4), 355-374.

Kramer, U., Pascual-Leone, A., Despland, J.-N., & De Roten, Y. (2014). Emotion in an alliance rupture and resolution sequence: A theory-building case study. *Counselling and Psychotherapy Research, 14*(4), 263-271.

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *Journal of general internal medicine, 16*(9), 606-613.

Lane, R. D. (2018). From reconstruction to construction: The power of corrective emotional experiences in memory reconsolidation and enduring change. *Journal of the American Psychoanalytic Association, 66*(3), 507-516.

Malan, D. H. (1979). *Individual Psychotherapy and the Science of Psychodynamics*: Butterworth Heinemann.

McCullough, L., Larsen, A. E., Schanche, E., Andrews, S., Kuhn, N., Hurley, C., & Wolf, J. (2003). *Achievement of therapeutic objectives scale: ATOS scale*. Unpublished manual Harvard Medical School.

McWilliams, N. (2011). *Psychoanalytic diagnosis: Understanding personality structure in the clinical process*: Guilford Press.

Mischel, W., & Shoda, Y. (2008). Toward a unified theory of personality. *Handbook of personality: Theory and research, 3*, 208-241.

Morse, J. Q., & Pilkonis, P. A. (2007). Screening for personality disorders. *Journal of Personality Disorders, 21*(2), 179-198.

Ogrodniczuk, J. S., Piper, W. E., & Joyce, A. S. (2011). Effect of alexithymia on the process and outcome of psychotherapy: A programmatic review. *Psychiatry research, 190*(1), 43-48.

Painuly, N., Sharan, P., & Mattoo, S. K. (2005). Relationship of anger and anger attacks with depression. *European archives of psychiatry and clinical neuroscience, 255*(4), 215-222.

Pascual-Leone, A., & Greenberg, L. S. (2007). Emotional processing in experiential therapy: Why" the only way out is through.". *Journal of Consulting and Clinical Psychology, 75*(6), 875.

Peluso, P. R., & Freund, R. R. (2018). Therapist and client emotional expression and psychotherapy outcomes: A meta-analysis. *Psychotherapy, 55*(4), 461.

Pincus, A. L. (2005). A Contemporary Integrative Interpersonal Theory of Personality Disorders.

Piper, W. E., McCallum, M., Joyce, A. S., Rosie, J. S., & Ogrodniczuk, J. S. (2001). Patient personality and time-limited group psychotherapy for complicated grief. *International journal of group psychotherapy, 51*(4), 525-552.

Schultzberg, M., & Muthén, B. (2018). Number of subjects and time points needed for multilevel time-series analysis: A simulation study of dynamic structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal, 25*(4), 495-515.

Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: uses in assessing rater reliability. *Psychological bulletin, 86*(2), 420.

Town, J. M., Abbass, A., Stride, C., & Bernier, D. (2017). A randomised controlled trial of Intensive Short-Term Dynamic Psychotherapy for treatment resistant depression: the Halifax Depression Study. *J Affect Disord, 214*, 15-25. doi:10.1016/j.jad.2017.02.035

Town, J. M., Abbass, A., Stride, C., Nunes, A., Bernier, D., & Berrigan, P. (2020). Efficacy and cost-effectiveness of intensive short-term dynamic psychotherapy for treatment resistant depression: 18-Month follow-up of the Halifax depression trial. *J Affect Disord, 273*, 194-202. doi:10.1016/j.jad.2020.04.035

Town, J. M., Chafe, D., & Pienkos, E. (2014). *Achievement of Therapeutic Objectives Scale: A Revised Manual for Rating ISTDP*. Dalhousie Univeristy. Halifax.

Town, J. M., Hardy, G. E., McCullough, L., & Stride, C. (2012). Patient affect experiencing following therapist interventions in short-term dynamic psychotherapy. *Psychother Res, 22*(2), 208-219. doi:10.1080/10503307.2011.637243

Town, J. M., Salvadori, A., Falkenström, F., Bradley, S., & Hardy, G. (2017). Is affect experiencing therapeutic in major depressive disorder? Examining associations between affect experiencing and changes to the alliance and outcome in intensive short-term dynamic psychotherapy. *Psychotherapy, 54*(2), 148.

Ulvenes, P. G., Berggraf, L., Hoffart, A., Stiles, T. C., Svartberg, M., McCullough, L., & Wampold, B. E. (2012). Different processes for different therapies: Therapist actions, therapeutic bond, and outcome. *Psychotherapy, 49*(3), 291.

Westen, D., Gabbard, G. O., & Blagov, P. (2006). Personality structure as a context for psychopathology. *Personality and psychopathology*, 335-384.

Zilcha-Mano, S. (2017). Is the alliance really therapeutic? Revisiting this question in light of recent methodological advances. *American Psychologist, 72*(4), 311.

Zilcha-Mano, S., & Errázuriz, P. (2015). One size does not fit all: Examining heterogeneity and identifying moderators of the alliance–outcome association. *Journal of counseling psychology, 62*(4), 579.

Zilcha-Mano, S., Roose, S. P., Barber, J. P., & Rutherford, B. R. (2015). Therapeutic alliance in antidepressant treatment: cause or effect of symptomatic levels? *Psychotherapy and Psychosomatics, 84*(3), 177-182.

Table 1

Descriptive statistics for variables used in analysis.

Variable	N	Mean	Std. Dev.	Min	Max
Patient Health Questionnaire - 9	439	14.33	6.28	0.00	27.00
Agnew Relationship Measure	470	6.17	0.80	2.60	7.00
Insight	472	42.10	6.61	17.00	80.00
Anger	420	37.54	8.58	20.75	83.00
Grief	273	41.00	10.71	15.00	81.50
Guilt	298	39.38	10.93	15.00	87.00
Toronto Alexithymia Scale	26	60.54	11.72	36.00	83.00
Inventory of Interpersonal Problems	27	1.54	0.52	0.62	2.75
Defense Style Questionnaire (Immature)	26	3.85	0.90	2.58	5.46

Table 2

Moderated mediation results for the effect of Affect Experiencing on Depression (PHQ-9) moderated by Personality Pathology (PP).

	Anger				Guilt				Sadness			
Moderated mediation	*b*	SD	*p*	95% CI	*b*	SD	*p*	95% CI	*b*	SD	*p*	95% CI
AE → ARM (a)	0.01	0.03	.82	-0.06, 0.07	0.08	0.04	.09	-0.02, 0.16	0.06	0.04	.12	-0.02, 0.14
AE × PP → ARM	0.09	0.03	<.001	0.04, 0.14	-0.00	0.04	.98	-0.08, 0.07	0.04	0.04	.40	-0.05, 0.12
ARM → PHQ-9 (b)	-0.15	0.05	<.01	-0.24, -0.06	-0.13	0.05	<.01	-0.23, -0.04	-0.12	0.05	.01	-0.21, -0.03
AE → Insight (a)	0.13	0.05	<.01	0.04, 0.23	0.22	0.06	<.001	0.10, 0.33	0.16	0.06	<.01	0.04, 0.26
AE × PP → Insight	-0.09	0.04	.03	-0.16, -0.01	-0.12	0.05	.02	-0.22, -0.02	-0.12	0.06	.04	-0.24, -0.00
Insight → PHQ-9 (b)	-0.08	0.04	.03	-0.15, -0.01	-0.10	0.04	<.01	-0.18, -0.03	-0.10	0.04	<.01	-0.18, -0.02
AE → PHQ-9 (c)	-0.01	0.03	.82	-0.07, 0.06	0.02	0.04	.65	-0.07, 0.11	-0.01	0.04	.79	-0.09, 0.07
AE × PP → PHQ-9	0.09	0.03	<.001	0.04, 0.14	-0.02	0.04	.68	-0.08, 0.06	-0.04	0.04	.19	-0.12, 0.04
Conditional indirect effects, AE → ARM → PHQ-9 (a × b)[a], by Personality Pathology												
Low PP	0.01	0.01	.22	-0.01, 0.03								
Mean PP	-0.00	0.00	.82	-0.01, 0.01	-0.01	0.01	.05	-0.02, 0.00	-0.01	0.01	.06	-0.02, 0.00

High PP	-0.01	0.01	<.05	-0.03, -0.00								
Conditional indirect effects, AE → Insight → PHQ-9 (a × b), by Personality Pathology												
Low PP	-0.02	0.01	.03	-0.04, -0.00	-0.03	0.02	.01	-0.07, -0.01	-0.03	0.01	.01	-0.06, -0.00
Mean PP	-0.01	0.01	.03	-0.03, -0.00	-0.02	0.01	.01	-0.05, -0.01	-0.01	0.01	.01	-0.04, -0.00
High PP	-0.00	0.00	.43	-0.02, 0.01	-0.01	0.01	.09	-0.03, 0.00	-0.00	0.01	.64	-0.02, 0.01
Conditional direct effect (c)												
Low PP	-0.10	0.04	.03	-0.19, -0.01								
Mean PP	-0.01	0.03	.79	-0.02, 0.01								
High PP	0.08	0.04	.03	0.01, 0.16								

Note. [a] When the moderator was non-significant, the model was re-estimated without the moderator, and the result for unmoderated mediation is presented on the row for Mean Severity; AE- ATOS Affect Experiencing Scale. ARM- Agnew Relationship Measure. Insight- ATOS Insight Scale. PHQ-9- Patient Health Questionnaire for Depression. PP- Personality Pathology

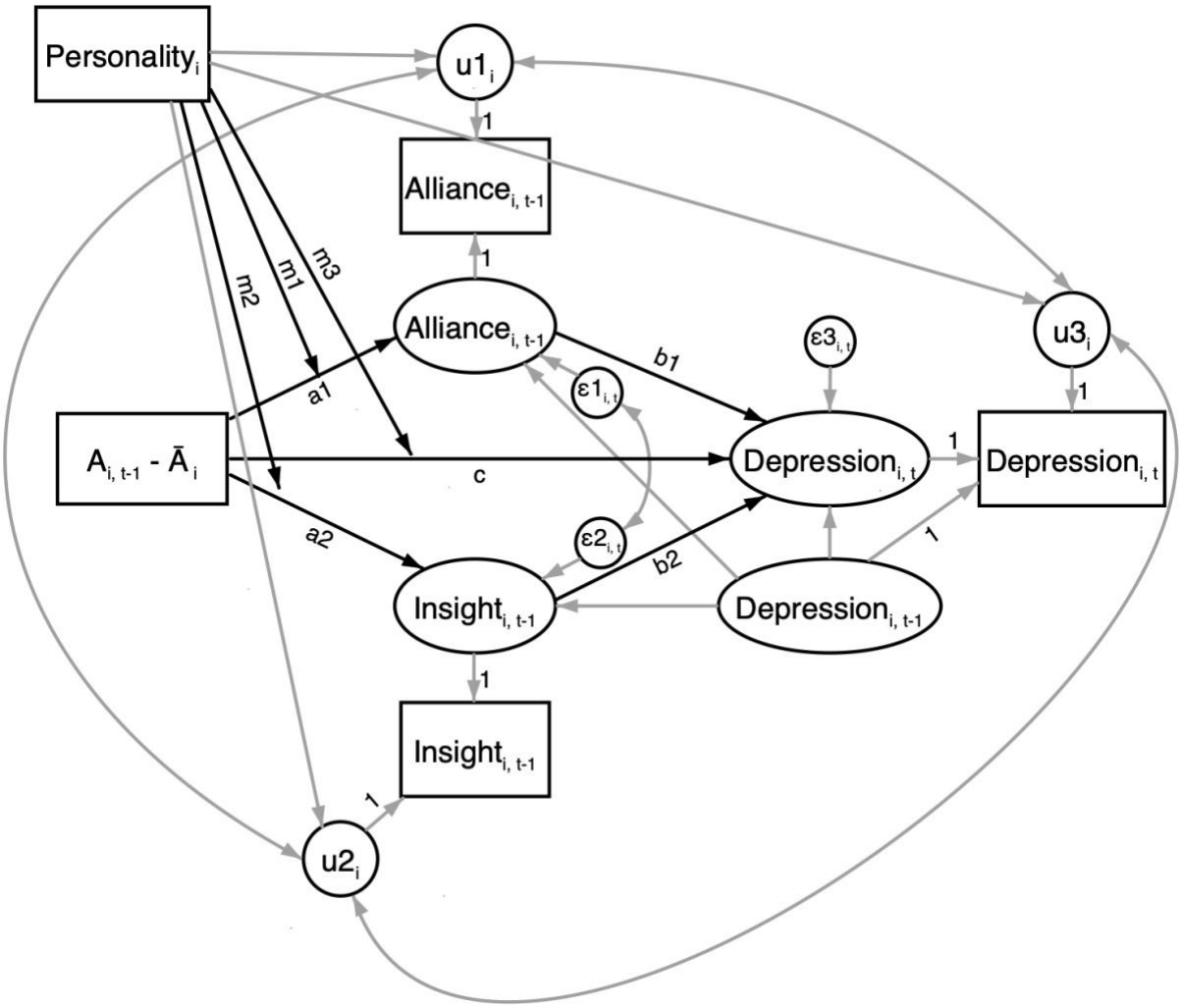

Figure 1

Path diagram of moderated mediation model with Alliance and Insight as mediators of the Affect (A) → Depression path, with Personality Pathology as the moderator. The model is a two-level Dynamic Structural Equation Model, with random intercepts u1 for Alliance, u2 for Insight and u3 for Depression. Affect, Alliance and Insight are all entered for session t-1, while Depression is entered for session t. The moderator Personality Pathology is allowed to impact the paths from A to the mediators Alliance and Insight (paths m1 and m2), as well as the direct effect on Depression (path m3). Latent centering is used for all endogenous variables, while manual centering is used for the exogenous one (A). Primary moderated mediation paths are labelled and black, greyscale arrows are auxiliary (control and model setup) paths.

Online Supplement

Statistical Analyses

DSEM overcomes the problem of estimating the lagged effects of the dependent variable on itself (autoregression), while simultaneously taking account of between-person differences (by estimating latent versions both of the lagged dependent variable and of between-person differences (random effects). This method can be used even in fairly small samples via the use of Bayesian estimation when estimating model parameters. Bayesian estimation is usually performed using simulation-based methods, called Markov Chain Monte Carlo (MCMC) estimation. MCMC simulates values of parameters from the posterior distribution, given the model, the prior distributions, and the data. This is done in a series of steps in which each step depends on the results of the previous one. Given a long enough chain, this procedure should, theoretically, converge on the most likely parameter estimates. Usually more than one chain is run, in order to enable testing if the chains converge on similar distributions. In the present study two chains were used in all analyses. A frequentist use of Bayesian estimation was used, and non-informative model priors were used to ensure that estimates were based on the data only. There are several types of non-informative priors; we used so-called improper priors with infinite variances. Theoretically, the variance of the prior reflects the degree of certainty the researcher has in prior knowledge, so with infinite variance this should reflect no prior knowledge – i.e., prior information should not influence the analysis. To be sure, we checked our estimator using Monte Carlo simulation (see below).

Convergence of the Markov Chains needs to be carefully assessed. In this study we used the Gelman-Rubin convergence criterion, which compares the estimated between- and within-chain variances for each model parameter. The Potential Scale Reduction (PSR) factor is defined as the ratio of the pooled between and within chain variances and the within-chain variance. The PSR should approach 1.00 when convergence has been achieved. We used the

criterion of PSR < 1.05 (Asparouhov & Muthén, 2010), which was achieved in a few hundred iterations in each analyses, though all models were run for at least 2000 iterations to ensure stable convergence. Throughout the Results section, we report Bayesian p-values, which are defined as the proportion of coefficient estimates crossing zero in the opposite direction of the point estimate.

Effect Sizes

To facilitate interpretation of effects, we standardized variables before analysis using the sample mean and standard deviation for each variable. There are as yet no guidelines for what constitute small, medium and large within-person effects in psychotherapy research, although our impression is that these are usually smaller than between-person effects. Gignac and Szodorai (2016) recommend the normative guidelines .10 (small), .20 (medium) and .30 (large) for correlation coefficients in individual differences research (i.e., between-person analyses). Standardized beta coefficients have the same range as correlation coefficients (-1.0 – 1.0), and are equivalent to correlations in simple bivariate analyses, so it makes sense to use similar guidelines. However, we expected our effects to be in the smaller regions, around .10 – .20. This means that for indirect effects, which are the product of two bivariate effects, we would expect effects of the order 0.01 (small) to 0.04 (medium).

Table S1

Bivariate Dynamic Structural Equation Model results.

	b	SD	*p*	95% CI
Anger → ARM (a)	0.04	0.05	.40	-0.05, 0.14
Guilt → ARM (a)	0.08	0.06	.18	-0.04, 0.20
Sadness → ARM (a)	0.12	0.06	0.04	0.00, 0.23
ARM → PHQ-9 (b)	-0.14	0.04	<.01	-0.22, -0.04
Anger → Insight (a)	0.17	0.06	<.01	0.05, 0.27
Guilt → Insight (a)	0.18	0.06	<.01	0.06, 0.30
Sadness → Insight (a)	0.16	0.06	.01	0.04, 0.28
Insight → PHQ-9 (b)	-0.11	0.04	<.01	-0.19, -0.02
Anger → PHQ-9 (c)	-0.00	0.04	1.00	-0.09, 0.08
Guilt → PHQ-9 (c)	-0.02	0.05	.74	-0.12, 0.09
Sadness → PHQ-9 (c)	-0.06	0.05	.26	-0.16, 0.04

ARM- Agnew Relationship Measure. PHQ-9- Patient Health Questionnaire for Depression. Baron & Kenny mediation model: (a)- Path A in mediation model. (b) Path B in mediation model. (c) Path C in mediation model.

Table S2

Correlation matrix between study variables.

	PHQ-9	ARM	Anger	Sadness	Guilt	Insight
ARM	.08					
Anger	.21***	.13**				
Sadness	.16*	.14*	.47***			
Guilt	.11	.12*	.47***	.49***		
Insight	-.16***	.20***	.16***	.21***	.13*	
PP	.41	-.25	.37	.39	.16	-.17

ARM- Agnew Relationship Measure. PHQ-9- Patient Health Questionnaire for Depression. PP- Personality pathology composite score.
* $p < .05$. ** $p < .01$. *** $p < .005$

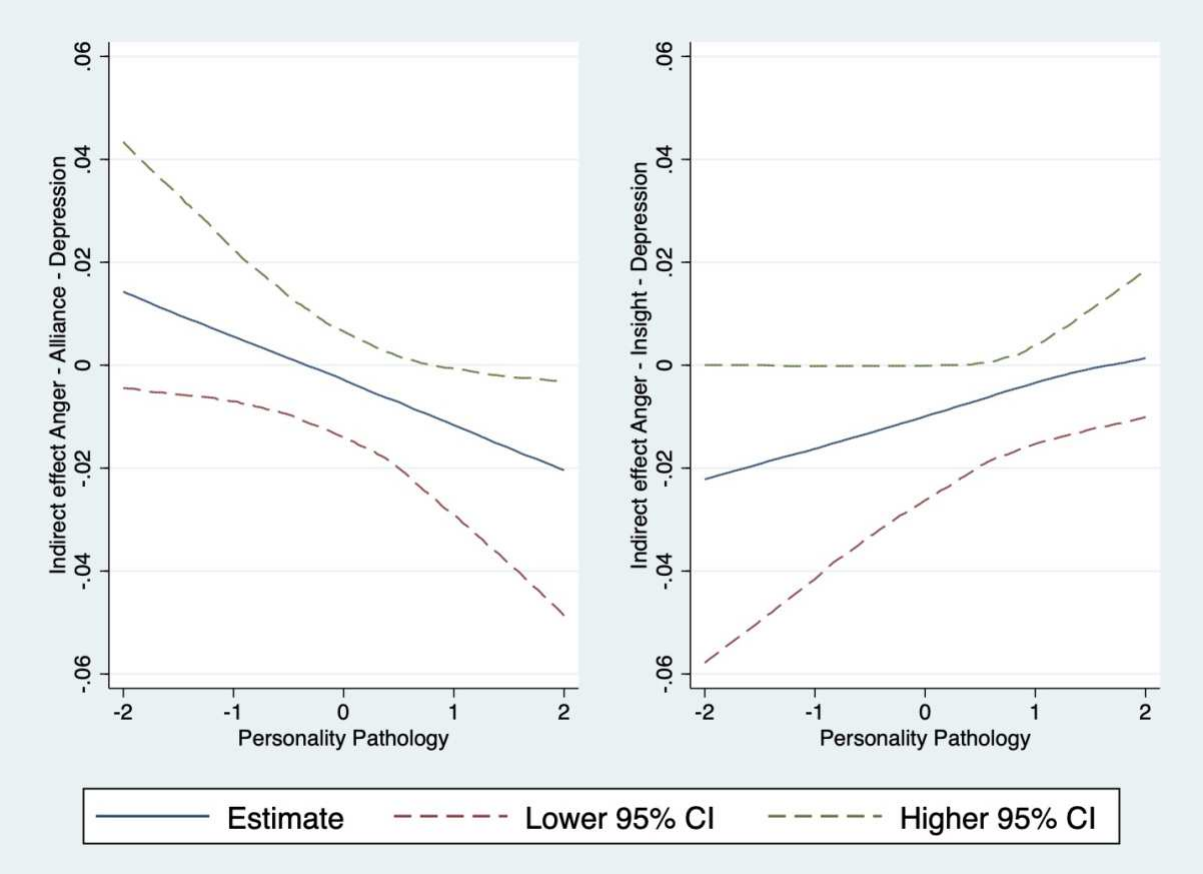

Figure S1

Plots of the indirect effects of Anger experiencing on Depression via Alliance and Insight, at different levels of Personality Pathology. The Y-axis shows the indirect effects at different values of Personality Pathology (the moderator, shown on the X-axis). Positive values of Personality indicate more severe personality problems than average, while negative values indicate less. Negative values on the Y-axis indicate that experiencing more Anger is associated with less severe Depression symptoms in the following session.

a) High Personality Pathology

b) Low Personality Pathology

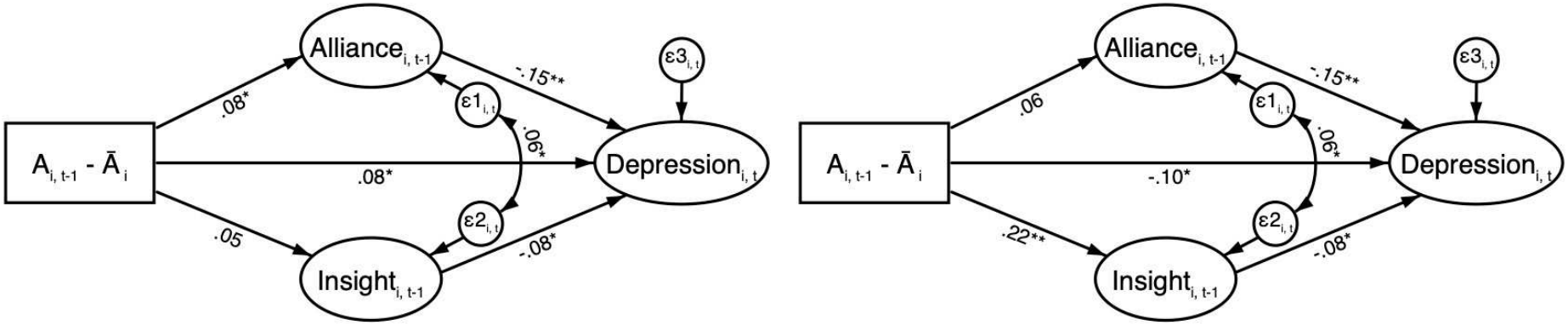

Figure S2

Simple slope estimates at high (1 SD above mean) and low (1 SD below mean) Personality Pathology. Only the within-patient part of the model is shown, and only the mediation paths.

**p < .05. **p < .01*

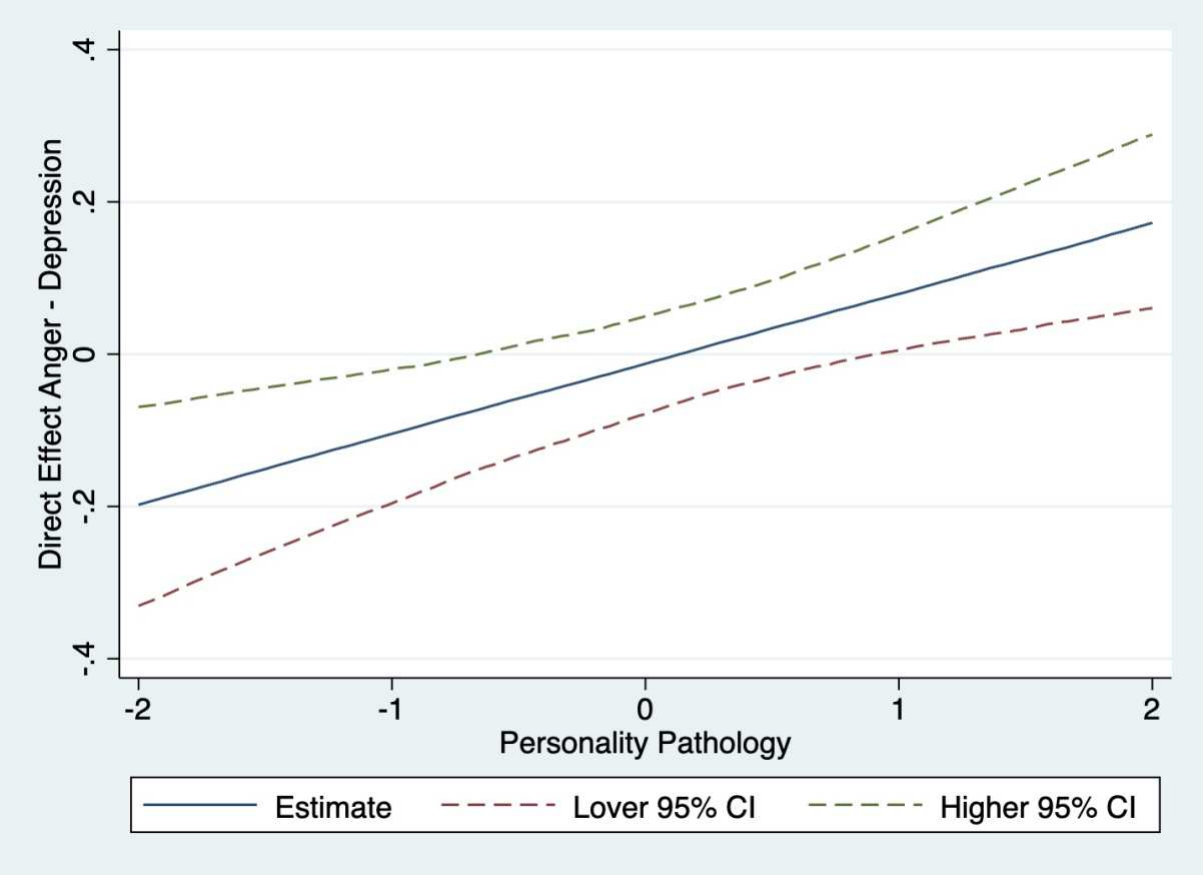

Figure S3

Plot of the direct effect of anger experiencing on depression at different levels of personality pathology. The Y-axis shows the effect of anger on next-session depression at different values of personality pathology (the moderator, shown on the X-axis). Positive values of personality pathology indicate more severe personality problems than average, while negative values indicate less. Negative values on the Y-axis indicate that experiencing more anger is associated with less severe depression symptoms, while positive values indicate that experiencing more anger is associated with more severe depression symptoms in the following session