Emotion Cascade: Harnessing Emotional Sequences to Enhance Chairwork Interventions and Reduce Self-Criticism

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Abstract

Objective: This study examines if experiencing the sequence of primary maladaptive emotions followed by primary adaptive emotions in-session predicts therapeutic change and whether this sequence mediates the impact of therapist emotional reflections on outcomes at post-treatment and follow-up.

Method: Nineteen participants with high self-criticism underwent 10-12 sessions of emotion-focused therapy (EFT). Therapist responses focusing on emotions, thoughts, and actions were coded for two sessions (sessions 6 to 12) during the initial 10 minutes prior to chair work. Clients' emotional states were coded using the Classification of Affective Meaning States (CAMS) during the subsequent chair work. Self-criticism and depression were measured at pre-treatment, post-treatment, and 3-month follow-up.

Results: Primary maladaptive emotions and the transformational sequence (primary maladaptive followed by adaptive emotion) predicted reductions in self-criticism at post-treatment, with the transformational sequence also predicting improvements at follow-up. The impact of therapist focus on emotions on depression and self-criticism at post-treatment and follow-up was mediated by the transformational sequence.

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Conclusion: The transformational sequence predicts therapeutic outcomes and mediates the impact of therapist responses focused on the client's emotion and therapeutic results. Implications for therapist training are discussed.

Keywords: Mediation, emotion-focused therapy, self-criticism, emotion-transformation, depression.

Clinical or methodological significance of this article: This article underscores the significance of key emotional sequences—transitioning from primary maladaptive emotions to adaptive emotions—in reducing self-criticism. It further explores how these sequences mediate the relationship between the therapist's emotion-focused responses to the client's emotions at the outset of a chair work session and therapeutic outcomes. Encouraging therapists to focus on clients' emotions is effective when it promotes access to primary emotions in a transformational sequence.

Introduction

Research on emotional change in therapy highlights various approaches to emotional processing, each with different measurement methods. Consequently, there is no consensus on which type of emotional processing most reliably predicts therapeutic outcomes. In a recent meta-analysis, Sønderland et al. (2023) identified three emotional processing mechanisms most linked to symptom improvement: fear exposure in exposure-based treatments for anxiety disorders, experiencing in psychotherapy for depression, and emotion regulation in the treatment of anxiety disorders. Additionally, Sønderland et al. (2023) also highlight the moderate effect of activating emotional schemas, suggesting that emotional processing involves key states and their sequences.

There are proposals that differentiate the types of emotions clients experience moment by moment in sessions and offer precise, fine-grained conceptualizations of

emotional processing. As we will explore below, not only the types of emotions experienced by the client (e.g., fear) but also the duration of these emotional experiences throughout sessions, and especially the temporal sequence in which these emotions are felt, may serve as critical indicators of an emotional processing approach that fosters therapeutic success. Emotion-Focused Therapy (EFT) theory differentiates between secondary emotions, primary maladaptive emotions, and primary adaptive emotions (Herrmann et al., 2016; Pascual-Leone & Greenberg, 2007), a differentiation that has been employed across a wide range of treatments and clinical populations (Lifshitz et al., 2021; Pascual-Leone, 2018). Secondary emotions are symptomatic responses that obscure underlying primary emotions, often arising as reactions to those emotions (e.g., fear of pain or guilt following anger) or as responses to cognitive processes (e.g., anxiety stemming from worry, which obscures grief-related pain). Primary maladaptive emotions are initial responses connected to unresolved past experiences, often rooted in the client's emotional vulnerabilities (Timulak, 2015), forming a core chronic pain (e.g., shame, fear, or core loneliness associated with past experiences). In contrast, primary adaptive emotions are spontaneous responses that provide resources to address present emotional needs (e.g., assertive anger, grief, or self-compassion). Conceptualizing emotion in this way to address a range of clinical issues has proven relevant across various treatment approaches, including Emotion-Focused Therapy, Dialectical Behavior Therapy, Psychodynamic Therapy, Clarification-Oriented Psychotherapy, Family Therapy, and even general psychiatric management (Pascual-Leone, 2018).

Pascual-Leone and Greenberg (2007) developed the Classification of Affective-Meaning States (CAMS), which captures the various types of emotions expressed by clients, moment by moment, through session recordings. This observational tool enables the classification of 11 affective states (for an extensive review, see Pascual-Leone, 2018).

Two of these affective-meaning states correspond to secondary emotions: Global Distress and Rejecting Anger. One state within CAMS represents the primary maladaptive emotion commonly encountered in therapy: the Fear/Shame state. Additionally, CAMS identifies affective states associated with primary adaptive emotions, including Hurt/Grief, Self-Compassion, and Assertive Anger. Other observational instruments, such as the Emotional Category Coding System (ECCS; Herrmann et al., 2007), also differentiate between primary and secondary emotions. Below, we will review evidence showing that therapeutic success can be predicted by the activation of specific emotional experiences, as measured by CAMS or ECCS during therapeutic sessions, as well as the activation of certain emotional sequences in a precise temporal order.

Primary Emotions and Therapeutic Outcomes

Process research indicates that activating primary adaptive emotions during psychotherapy is linked to positive therapeutic outcomes. In Emotion-Focused Therapy (EFT) for depression, client improvement has been associated with a higher frequency of adaptive emotions, a lower frequency of secondary emotions, and a moderate presence of primary maladaptive emotions during key phases of the therapeutic process (Herrmann et al., 2016). Sudden improvements in depression during experiential therapy are similarly predicted by experiences of primary adaptive emotions in the prior session (Singh et al., 2021). Various case studies further underscore the significance of accessing primary emotions within the therapeutic process (for a review, see Pascual-Leone, 2018).

Some studies reveal the impact of certain adaptive emotions. For example, the expression of Hurt/Grief and Assertive Anger during EFT has been linked to positive long-term reductions in interpersonal problems (Heinonen & Pos, 2020). Similarly, in the treatment of social anxiety, the evocation of adaptive Hurt/Grief during EFT sessions has been shown to predict therapeutic changes one week later (Haberman et al., 2019).

Among individuals diagnosed with personality disorders, the emergence of Self-Compassion during sessions of clarification-oriented therapy has been observed specifically in processes that culminated in positive outcomes (Kramer, Pascual-Leone, Rohde, et al., 2016). Additionally, Assertive Anger has been found to mediate the effects of Dialectical Behavior Therapy (DBT) in reducing social role-related difficulties (Kramer, Pascual-Leone, Berthoud, et al., 2016).

However, other studies suggest that experiencing primary maladaptive emotions may also predict therapeutic outcomes. For example, accessing primary maladaptive emotions has been associated with positive outcomes across several therapeutic approaches, such as in the experiential treatment of self-criticism (Choi et al., 2016) and in attachment-based family therapy for suicidal intent (Lifshitz et al., 2021). In the latter study, grief/hurt emerged as the most frequently expressed emotion among both responders and non-responders. However, good-outcome cases specifically showed greater access to shame following general distress, highlighting the importance of activating maladaptive emotions.

Is it more beneficial to support patients in accessing their primary adaptive or maladaptive emotions? Do both equally predict positive psychotherapy outcomes? The answer may lie in the sequence in which clients access maladaptive and adaptive emotions, potentially suggesting a sequential model of emotional processing

A Key Sequence: Primary Maladaptive Emotions Experienced in Session Followed by Primary Adaptive Emotions

As we have seen, there is evidence that psychotherapy clients can access primary emotions (whether adaptive or maladaptive), and this process appears to predict therapeutic outcomes. In this section, we review evidence suggesting that the joint and

sequential experience of these emotions predicts outcomes, following a two-step process proposed in Emotion-Focused Therapy (EFT): (1) accessing and first experiencing the primary maladaptive emotion (PMA), followed by (2) experiencing the primary adaptive emotion (PA), which serves to transform the schematic memory of the maladaptive emotion (Pascual-Leone & Greenberg, 2007; Pascual-Leone, 2018). This is referred to as the transformational sequence, or the process of changing emotion with emotion (Greenberg, 2021).

Several lines of evidence indicate that this emotional transformation sequence (i.e., experiencing a primary adaptive emotion following a primary maladaptive emotion) predicts positive therapeutic outcomes. The frequency with which clients transition from a maladaptive to an adaptive emotional state is linked to improved therapeutic results (Herrmann et al., 2016; Pascual-Leone, 2018). Pascual-Leone and Greenberg (2007) found that, although the chance occurrence of this sequence was close to 4%, 50% of clients completed the proposed sequence. Studies also indicate that positive therapeutic outcomes are more likely in cases where clients, in treatment for major depression, access a primary adaptive emotion after experiencing a primary maladaptive emotion (Choi et al., 2016; Piccirilli & Pos, 2023). Additional research shows that the emergence of adaptive emotions, such as pride and assertive anger in response to the inner critic's contempt and negative evaluations, is associated with less depressogenic and more resilient processes (Whelton & Greenberg, 2004). Therefore, we may propose that this specific sequential process—experiencing the primary maladaptive emotion followed by the adaptive emotion—is more significant for the therapeutic process than accessing either primary maladaptive or adaptive emotions alone. Thus, the concept of the emotional transformation sequence can be considered a form of emotional processing present in various experiential psychotherapies and across a wide range of clinical

conditions. However, not all studies provide evidence supporting this. For instance, in attachment-based family therapy (ABFT) with suicidal adolescents, expected transitions from shame or fear to either assertive anger or grief/hurt were not associated with therapeutic outcomes (Lifshitz et al., 2021). Thus, further research is needed to better understand this sequential emotional processing and its impact on outcomes. Furthermore, although there is evidence of these processes in populations with depression (Piccirilli & Pos, 2023), particularly during the resolution of self-criticism (Choi et al., 2016), we lack evidence on whether this sequence applies to non-clinical populations with elevated self-criticism.

Emotion Cascade: Transformational sequence as mediator of Therapist's Empathic Responses and Therapeutic Outcomes

Therapists employ a wide range of relational skills and therapeutic techniques to support emotional processing. One frequently studied element is the empathic quality of therapist interventions. Empathy—defined as the ability to attune to the client's emotional experience, understand the client's perspective, and communicate that understanding back to the client (Eisenberg & Eggum, 2009)—is a consistent predictor of therapeutic outcomes, although the exact causal mechanisms underlying these improvements remain unclear (Elliott et al., 2018).

A mediating process between empathy and outcomes is the role of empathy in activating key emotions in clients. A study by Kramer, Pascual-Leone, Rohde, et al., (2016) found that the therapist's empathic understanding in the first 20 minutes of a session moderately predicted clients' ability to access maladaptive emotions later. Additionally, expressed empathy was found to predict the depth of emotional processing during therapy's working phase (Malin & Pos, 2015).

Alongside empathic quality, another frequently studied element is the type of response the therapist provides based on the central aspect of the client's experience highlighted in the therapist's intervention. A therapist actively selects what is central to the experience, choosing the focus of their empathic responses (Goldman, 2019). This choice of content appears to significantly influence the client's immediate processing. For instance, clients are up to eight times more likely to continue exploring content previously emphasized by the therapist (Pascual-Leone & Yeryomenko, 2017).

Thus, the focus of the therapist's responses plays an important role in the client's emotional processing. One of the most widely used instruments for capturing the therapist's chosen focus in empathic responses is the Coding System of Therapeutic Focus (CSTF; Ellison & Greenberg, 2004). This observational system, based on a transtheoretical perspective, allows client responses to be coded (typically in 30-second segments) into various categories (Goldfried et al., 1989). The therapist may reflect the client's behavior, emotions, or thoughts, or emphasize the links between these elements (e.g., the extent to which emotions are associated with thoughts). Later versions of this coding system introduced new response categories, where the therapist might address the client's wants or needs, physical sensations, the action tendency of an emotion, or reflect on aspects of the client's experience in relation to others (Ellison & Greenberg, 2004).

The predominant type of focus in therapists' responses has shown promise as a process variable in predicting therapeutic outcomes (Rudkin et al., 2007). A range of evidence indicates that the extent to which therapists' responses focus on the client's experienced emotions predicts the outcomes of that session and, potentially, the therapeutic process as a whole. For example, therapists' focus on a client's emotional experience is positively associated with a subsequent deepening of client experiencing by the end of the session, a relationship mediated by the client's engagement with primary

adaptive emotions, such as Hurt/Grief, Assertive Anger, and Self-Compassion (Pascual-Leone et al., submitted). Tsvieli et al. (2020) found that in attachment-based family therapy for adolescents with depressive and suicidal symptoms, therapists' focus on primary adaptive emotions was linked to productive emotional processing. Similarly, Singh et al. (2021) showed that therapist responses addressing unmet emotional needs predicted sudden gains in experiential therapy for depression. Rudkin et al. (2007) also found that in interpersonal psychotherapy, significant sessions featured a higher number of therapist responses focusing on the client's emotions, highlighting the importance of emotional focus in therapy.

The Current Study

The objective of this study is to examine the association between the duration of the emotional transformation sequence (i.e., primary maladaptive emotion [PMA] followed by primary adaptive emotion [PA]) and the prediction of therapeutic outcomes. To achieve this, observational measures of the therapeutic process will be used with clients exhibiting high self-criticism, within the context of Emotion-Focused Therapy. It is anticipated that the PMA-PA sequence will be more relevant for predicting outcomes than the experience of either PMA or PA alone. Specifically, it is expected that the frequency of this sequence will serve as a key predictive variable for post-intervention and follow-up outcomes.

Secondly, a mediational effect is anticipated. Specifically, the effect of the therapist's empathic responses focused on the client's emotional experience is expected to predict outcomes at the end of therapy and at follow-up, and this effect is expected to be mediated by the time experiencing the emotional transformation sequence during sessions. The time expressing other emotional experiences (secondary emotions, PMA, PA or PA without prior PMA) are not expected to mediate the impact of the therapist's

responses on therapeutic outcomes. To contextualize these results alongside other therapist responses beyond those focused on the client's emotions, we will examine the association between therapist responses centered on the client's thoughts and actions and therapeutic outcomes, as well as the previously described mediational pathways through emotional processes. In this case, only the focus on emotions, and not on actions or thoughts, is expected to show associations with outcomes, with this association being mediated by the emotional transformation sequence.

Analytical Strategy

Critical sessions from the working phase of an Emotion-Focused Therapy treatment were selected to create a purposeful sample of key therapeutic events. Specifically, the last two sessions involving chair tasks (from the fifth session onward) were analyzed for each client, based on prior findings indicating the high predictive power of emotional processes in these sessions (Herrmann et al., 2016).

Emotional states were coded via the CAMS during the remaining session task to explore the association between these emotional states and emotional sequences (i.e., PMA-PA) with therapeutic outcomes. Within these sessions, therapist interventions were observed before the target client processes under examination. This analytical strategy allows us to observe three distinct stages in a hypothesized mechanism of change: Step 1: Therapist interventions focused on clients' emotions, observed within the first 10 minutes of sessions in the working phase. Step 2: Client emotional processes (including the emotional transformation sequence) observed later in the same sessions during chair work. Step 3: Treatment outcomes, assessed as reductions in depressive and self-critical symptoms at treatment termination and at 3-month follow-up.

Method

Participants

The sample comprises participants who were randomized and assigned to the Emotion-Focused Therapy treatment in a previously published clinical trial (hidden for peer review). It consists of 19 individuals (68.4% women; mean age = 37.6 years, SD = 12.1 years) with high self-criticism scores. These participants were randomly assigned to six therapists to complete between 10 and 12 sessions.

Inclusion and Exclusion Criteria

The inclusion criteria for selecting the 19 participants were legal age and high self-criticism scores, as assessed by the Forms of Self-Criticizing/Attacking and Self-Reassuring Scale (FSCRS; Gilbert et al., 2004). Those who scored more than one standard deviation above the mean on any of the two subscales of inadequate self or hated self (see Stiegler et al., 2018), with reference to the Spanish norm (López-Cavada et al., 2024), were shortlisted for assessment by a clinical interview to check for exclusion criteria. Exclusion criteria included prior participation in a therapeutic process, as well as severe conditions or specific psychopathologies, such as psychotic disorders, borderline personality disorder, eating disorders, alcohol or other substance abuse, and any situations involving violence or abuse in relationships. A comprehensive description of the inclusion/exclusion criteria and clinical trial results is provided in a separate paper (hidden for peer review).

Therapists

Six therapists, trained in Emotion-Focused Therapy (EFT; Elliott et al., 2004), participated in the study. The average number of sessions per client was 11.21, ranging from 10 to 12 sessions. Therapists attended supervision sessions with EFT developers every 15 days to support adherence to the treatment protocol.

Outcome Measures: Pre-/Post-Treatment and 3-Month Follow-Up

Beck Depression Inventory (BDI-II)

The BDI-II (Beck et al., 1996; Spanish version by Sanz et al., 2005) is a 21-item self-report instrument measuring depression symptomatology across cognitive, affective, motivational, and somatic dimensions, with items scored from 0 (no symptoms) to 3 (high presence of symptoms), yielding a total score range of 0 to 63. The BDI-II was designed to assess the severity of depressive symptoms in adults and adolescents with psychiatric diagnoses (Beck et al., 1996).

Numerous studies support the validity and reliability of the Spanish BDI-II in various populations, including the general population (Sanz et al., 2003) and clinical populations with psychological disorders (Sanz et al., 2005), which reported high internal consistency ($\alpha = .89$) and significant correlation coefficients ranging from .33 to .67. In our sample, we obtained high internal consistency, with a Cronbach's alpha of .88 and an Omega coefficient of .86.

Forms of Self-Criticism/Attacking and Self-Reassuring Scale (FSCRS)

The FSCRS (Gilbert et al., 2004) is a 22-item questionnaire with three factors: (a) inadequate self, (b) reassure self, and (c) hated self, measured on a Likert-type scale from 0 ("not at all like me") to 4 ("extremely like me"). For this study, data were collected using the Spanish-adapted version by López-Cavada et al. (2024), which demonstrated high internal consistency (Cronbach's $\alpha = .90$). Internal consistency for each factor was also high: reassure self (RS) = .83, inadequate self (IS) = .90, and hated self (HS) = .76, with Omega coefficients of .82, .90, and .72 for RS, IS, and HS, respectively. In this study, we will use only the IS and HS scales, which specifically assess forms of self-criticism rather than self-support.

Client Process Measures

Classification of Affective Meaning States (CAMS)

The CAMS (Pascual-Leone & Greenberg, 2005) is a systematized tool for measuring key affective states in emotional processing, developed specifically for the rational/empirical model proposed in Emotion-Focused Therapy (Pascual-Leone & Greenberg, 2007). For observational coding, 1-minute units are considered suitable for both research and clinical practice (Pascual-Leone, 2018). An inter-rater reliability score of approximately k = .87, measured by Cohen's Kappa, is considered optimal for studies like ours (Pascual-Leone, 2018). The CAMS has demonstrated good reliability in numerous studies, including case studies across diverse populations, treatments, and languages. In this study, inter-rater reliability yielded a Cohen's Kappa of .86.

After all CAMS categories were rated for each client, emotional process variables were computed: time spent expressing secondary emotions (Global Distress, Rejecting Anger), time spent expressing primary maladaptive emotions (Fear/Shame), time spent expressing adaptive emotions (Assertive Anger, Self-Soothing, Hurt/Grief), and time spent expressing primary adaptive emotions following a prior primary maladaptive emotion (i.e., the emotional transformation sequence). Additionally, two isolated emotion variables were calculated to better differentiate the type of emotion from the emotional transformation sequence it may be part of: time spent expressing adaptive emotions without prior primary maladaptive emotions ("isolated adaptive" emotions), and time spent expressing maladaptive emotions without subsequent adaptive emotions ("isolated maladaptive" emotions). Since each client engages in the chair task for varying durations, resulting in different total minutes coded per case, the variables representing the time spent expressing each type of emotional experience were weighted by calculating the proportion of each emotion relative to the total duration of the coded segment (i.e.,

frequency of the given emotion divided by the total minutes of emotions expressed by each client; see Lifshitz et al., 2021, or Pascual-Leone, submitted).

Therapist Process Measures

Coding System for Therapist Focus: Action and Insight Revised (CSTF-IA-R; revised by Ellison and Greenberg, 2004)

The CSTF is a transtheoretical coding system originally proposed by Goldfried et al. (1989) to measure the focus of therapist responses in 30-second intervals. The revision by Ellison and Greenberg (2004) introduced additional coding categories to better capture therapist interventions within experiential treatments and streamline coding time. Therapist responses are coded across the following categories, depending on their focus: emotion, need, physiological sensations, action tendency, general thinking, self-evaluation, expectancy, behavior, intention, situation, intrapersonal component relationships, interpersonal component relationships, focus on people other than the client, and a non-specific category.

For this study, we used composite categories: total emotion (combining emotion, need, physiological sensation, and action tendency), total thought (combining general thought, self-evaluation, and expectation), and total behavior (combining intention and behavior). Intraclass reliability coefficients were .72 for total emotion, .60 for total thought, and .62 for total behavior.

Procedure

Treatment

The 19 active participants were randomly assigned to six therapists for the sessions. Between 10 and 12 one-hour long therapy sessions were conducted. At the

beginning of the first session, primary and secondary outcome measures (see the section on Measures below) were administered. Outcome measures were also administered at the end of the last session and at the 3-month follow-up. The therapy sessions took place in the offices of the Comillas University Clinic.

Evaluation of the Emotional Processing. Procedures for using the CAMS.

Following Herrmann et al. (2016), we selected for observation the last two sessions involving chair work, starting from the fifth session onward for each of the 19 participants, three of whom engaged in chair work only once. A total of 35 sessions were observed, with 46% involving chairs for self-criticism, 51% for unresolved issues, and 3% for self-soothing.

Training for raters lasted 30 hours over a period of one month. The first and second author trained two independent raters. Rating training consisted of the comprehensive reading of the observational code, the study and analysis of videos specifically prepared for this purpose, as well as chair sessions of the research itself not selected for the final observation, during four meetings where doubts were clarified. When questions or doubts could not be resolved within the team, the main developer of the scale was consulted and satisfactorily resolved them.

A total of 35 sessions were coded, 27 sessions were given to the first rater and 26 to the second. By viewing the recorded sessions, each rater had to indicate per minute the observable affective state experienced by the client. A third evaluator coded the 18 sessions shared by the main raters to break the tie in cases of disagreement. When the code coded by the third evaluator coincided with one of the codes offered by the main raters in disagreement, the code was modified to obtain the value to be used in the analysis, except for inter-trial reliability, that used the original coding. The coding started

from the beginning of the work with chairs until its conclusion. Inter-rater reliability for the use of the scale was established as follows: Using a randomized method, 18 of the 35 selected sessions were assigned to both raters. The raters were always unaware of the shared sessions. The remaining 17 sessions were given to each evaluator in an established order, 9 sessions to the first rater and 8 to the second. The intention of this allocation was to increase the variability in the observation by sharing the two sessions of each study subject between both raters. The raters were at all times unaware of the study hypotheses, as well as the therapeutic outcomes of the research participants.

Assessment of the type of focus in therapists' responses. Procedures for using the CSTF-IA-R.

The coding training lasted 12 hours. It consisted of comprehensive reading of the code and supervision of the practical coding by the second author of the article and expert in the tool. Two EFT therapists were trained as raters. A total of 35 sessions from 19 clients were taken for coding, 27 sessions given to the first evaluator and 26 to the second. Through the video recordings, each rater had to indicate every 30 seconds the therapeutic focus during the first 10 minutes of the empathic exploration session and prior to the chair work. The assignment of the sessions between raters for inter-rater reliability procedure followed the same procedure as the CAMS described above.

Ethical Considerations

This study was evaluated and approved by the ethics committee of the Comillas Pontifical University (register number 22052017). Participants received an informed consent form explaining the study's purpose and their right to withdraw at any time. They also consented to session recordings, all of which were recorded in audiovisual format.

Data Analysis

To examine the relationship between client emotional processing (i.e., duration of each emotion type and the transformational sequence) and changes in outcome variables at post-treatment and follow-up, descriptive analyses and Spearman correlation matrices were conducted (due to the small sample size and non-normal distribution of the variables). To explore the mediational effect of emotional processing on the impact of therapist response types on therapeutic outcomes, mediation analysis was conducted using Hayes's (2013) Process macro. Bootstrapping with 10,000 samples was employed to test for mediation, with a statistically significant mediation effect indicated when the confidence interval for the indirect effect did not include zero. "The therapist's interventions focused on emotions, thoughts, and actions within the first 10 minutes of sessions in the working phase (Time 1) were entered as antecedent variables in the mediation models. Mediator variables included the duration of each emotional expression type (secondary, primary maladaptive, and primary adaptive emotions), transformational sequences (time spent expressing an adaptive emotion following a maladaptive emotion), and time spent expressing adaptive emotions without prior primary maladaptive emotions, observed during chair work (Time 2). Outcome measures—depression and self-criticism—were introduced as dependent variables, assessed at the end of treatment (Time 3) and follow-up (Time 4). To evaluate the size of the indirect effect, completely standardized coefficients and confidence intervals were calculated for each indirect effect (Miočević et al., 2018). This coefficient indicates the number of standard deviations by which the dependent variable changes, through mediator variables, when there is a one-standard-deviation increase in the independent variable.

RESULTS

Table 1 presents Spearman correlations and descriptive statistics for the study variables. As shown in the means of the emotional states, clients spent a substantial

proportion of time expressing secondary emotions (26%), followed by primary adaptive emotions (12%). These primary adaptive emotions can be divided into time spent experiencing primary adaptive emotions following primary maladaptive emotions (i.e., the sequence, 4%) and without prior primary maladaptive emotions (8%). Primary maladaptive emotions occurred only 5% of the time, and in almost all instances where primary maladaptive emotions were present, primary adaptive emotion followed. The percentage of time spent experiencing primary maladaptive emotions without subsequent primary adaptive emotion was less than 1%, coming from only three clients, and thus will not be included in subsequent analyses. The time clients spent expressing adaptive emotions following maladaptive emotions (i.e., emotional transformation sequence) showed a correlation in the expected direction with changes in hated self (self-criticism) at post-treatment (r = -.48, p = .036) and at follow-up (r = -.53, p = .023). Additionally, time spent expressing primary maladaptive emotions was negatively associated with hated self (self-criticism) at post-treatment (r = -.58, p = .011).

In turn, the number of therapist responses focused on the client's emotions at the beginning of the session was significantly correlated with the emotional transformation sequence (time the client spent expressing adaptive emotions following a maladaptive emotion) in the subsequent chair task (r = .53, p = .019). Therapist responses focused on the client's thoughts showed a statistically significant but negative correlation with the time the client spent expressing emotions during the chair task (r = -.49, p = .033), suggesting that a greater focus on client thoughts by the therapist was associated with a lower emotional expression from the client in the subsequent task. In contrast, therapist responses focused on the client's actions in the first 10 minutes of the session did not show statistically significant associations with either outcome or emotional processes during chair work (p > .05; see Table 1).

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Regarding the mediation analyses, certain emotional processes were found to mediate the effect of therapist responses focused on client emotions on therapeutic outcomes (confidence intervals excluding zero; see Table 2). Most notably, only the emotional transformation sequence (i.e., time spent expressing adaptive emotions following a maladaptive emotion) mediated the effect of therapist focus on client emotion on changes in BDI scores at post-treatment (effect = -.69, *SE* = .51, 95% CI = [-2.23, -.00]), and on hated self (self-criticism) scores, both at post-treatment (effect = -.44, *SE* = .26, 95% CI = [-1.07, -.03]; see also Figure 1) and at follow-up (effect = -.34, *SE* = .23, 95% CI = [-1.00, -.03]).

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On the other hand, as expected, the time spent expressing secondary emotions, primary maladaptive emotions, primary adaptive emotions, or isolated primary adaptive emotions (i.e., without prior primary maladaptive emotions) did not mediate the effect of therapist interventions focused on client emotions on outcomes (see Table 2). Finally, when considering the frequency of therapist responses focused on client thoughts or actions, no mediational effects were observed (see Tables S1 and S2).

In terms of effect size, results showed that an increase of one standard deviation in the number of therapist responses focused on client emotions in the first 10 minutes led to a reduction of .42 standard deviations in self-criticism (hated self) and .24 standard deviations in depression (BDI scores) at post-treatment, mediated by an increase in the key emotional transformation sequence (primary maladaptive emotion followed by primary adaptive emotion) during chair work. The effect size remained significant at

follow-up for this harsher form of self-criticism (hated self): an increase of one standard deviation in therapist responses focused on client emotions resulted in a reduction of .29 standard deviations in self-criticism at follow-up, also mediated by this key emotional transformation (see Table 2).

Discussion

Our study highlights the importance of the sequential activation of emotions, demonstrating that experiencing primary adaptive emotions following maladaptive ones (PMA-PA) is a critical factor in predicting therapeutic outcomes. These findings support the notion that focusing solely on individual emotional states may be less effective than fostering the complete emotional transformation sequence in therapy.

No All Emotions are Useful: Why Therapists need to Discriminate

Although research underscores the importance of emotion processing, our findings emphasize the need to distinguish between different types of emotions. Specifically, changes in self-criticism scores were correlated with the time spent expressing adaptive emotions that followed maladaptive emotions (i.e., the emotional transformation sequence), in the emotion-focused treatment for self-criticism in a nonclinical population. Moreover, when primary maladaptive emotion was not followed by an adaptive emotion, or when primary adaptive emotion was not preceded by a maladaptive emotion, the time spent expressing primary emotions did not show associations with therapeutic outcomes, highlighting the importance of the ordered and sequential combination of these experiences during the working phase of treatment.

These results build on previous findings highlighting the importance of accessing adaptive emotions particularly when adaptive emotions are preceded by primary maladaptive emotions (Pascual-Leone & Greenberg, 2007). For example, Pascual-Leone

(2018) has argued that the lived experience of primary adaptive emotions is essentially an antidote to maladaptive emotions (see also Greenberg, 2021). Our findings support this assertion by highlighting the crucial role of expressing a maladaptive emotion followed by an adaptive emotion, such as transitioning from problematic and chronic emotions (e.g., fear, shame, or loneliness/sadness) to emotions like compassion, assertive anger, or grief/pain. Similarly, other research has shown that client improvement was predicted by the frequency with which clients transitioned from maladaptive to adaptive emotions (Herrmann et al., 2016).

In contrast, adaptive emotions appear to be relevant predictors in many treatments and conditions (Berthoud et al., 2017; Haberman et al., 2019; Khayyat-Abuaita et al., 2019; Kramer, Pascual-Leone, Berthoud, et al., 2016; Singh et al., 2021). For example, Khayyat-Abuaita et al. (2019) showed that if the frequency of adaptive emotions increases by one unit, the likelihood that emotion-focused therapy for complex trauma will result in a good outcome double. Additionally, in the context of social anxiety, the evocation of adaptive sadness/grief (a type of adaptive emotion) in the therapeutic process predicts changes one week after the appearance of these emotions (Haberman et al., 2019). However, to the best of our knowledge, these studies, unlike our data, do not differentiate whether adaptive emotions emerge following the expression of primary maladaptive emotions. Crucially, our results show that time spent expressing a primary adaptive emotion without prior access to a primary maladaptive emotion did not predict treatment outcomes (or follow-up outcomes), highlighting the importance of the emotional transformation sequence. These results may be due to the fact that this research on therapeutic processes involves the treatment of individuals with high self-criticism, a population that may require work on transforming emotional schematic memory. The process of self-criticism serves a dual function in relation to emotional pain; on one hand,

it perpetuates the emotional schematic memory of shame, leading to chronic emotional pain (i.e., primary maladaptive emotion); on the other hand, self-criticism, particularly as a ruminative process, acts as a an effort to address and manage the chronic pain (Timulak, 2015), specifically, engaging this way provides short-term benefits such as a sense of control and hope in the face of emotional pain (e.g., 'If it's my fault, so I can improve this pain') or creating meaning out of experiences (e.g., 'If I am bad or defective, so I understand why I am rejected, and my shame makes sense'). In short, self-criticism is an effort to uphold certain values and standards, although with destructive force.

Our results indicate that the extent to which symptomatology diminishes, particularly symptoms related to the harshest and most harmful form of self-criticism, is associated with the time spent experiencing an emotion that may heal chronic emotional pain, aligning with the principles of memory reconsolidation (Lane et al., 2015). It is interesting to note that changes in this severe form of self-criticism (i.e., hated self vs. inadequate self) were not observed in the clinical trial from which this study originates (hidden for peer review). In light of the current findings, we can hypothesize that increasing the time spent experiencing the transformational sequence could enhance reliable and clinical change in individuals experiencing this harsher form of self-criticism, and future studies could focus on this possibility.

These data indicate that therapeutic attempts focused on promoting adaptive emotions without facilitating the prior activation of core emotional pain may have lower efficacy and may even enable emotional avoidance strategies in the face of emotional pain. Thus, prematurely accessing adaptive emotions can be a more or less deliberate way of avoiding painful emotions and can be counterproductive, as this experiential avoidance is a process that constitutes a well-established transdiagnostic factor (Akbari et al., 2022).

Moreover, our study provides additional evidence of the significant role these transformational sequences play, as they mediate the effect between therapist responses and outcomes (depression and self-criticism). The extent to which therapists focus their responses on emotion influences post-treatment and follow-up results, mediated by the frequency of key emotional processes (i.e., time spent expressing primary adaptive emotions following prior maladaptive emotions). The mediational effect of productive emotional processes has been previously demonstrated (a) within a session (Pascual-Leone et al., submitted) and (b) across a series of sessions to explain sudden gains (Singh et al., 2021). The current study extends this understanding by showing the mediational effect of key emotions on (c) post-treatment symptom outcomes, and further highlights the mediational role of specific emotional sequences.

Our results are consistent with the view that therapists' responses focusing on the client's emotion are related to the client making dynamic transitions between emotional states, which, in turn, proved to be increasingly productive. The degree to which the therapist uses responses that focus on the client's emotion, but not on thought or action, is associated with a decrease in self-criticism and depression, and this impact is mediated by the occurrence of the emotional transformation sequence (i.e., time spent expressing adaptive emotions following a maladaptive emotion). This mediation reveals a high effect size, particularly in the mediation of post-treatment and follow-up changes in severe self-criticism, specifically in the form of a hated self—a self-critical process that previous studies have identified as the most challenging to change (see López-Cavada et al., 2024).

These findings expand on previous research showing that therapist empathy in interventions promotes an increase in the depth of client experiencing (Pascual-Leone et al., submitted), improved perceived processing quality (Gordon & Toukmanian, 2002), and enhanced emotional regulation demonstrated by the client (Porges, 2011). Thus,

focusing on emotion appears to facilitate access to primary maladaptive maladaptive emotions and their transition to more adaptive emotions at later stages in the session, contributing to positive therapeutic outcomes at the end of treatment and even at follow-up. However, experimental evidence is needed to strengthen this interpretation, as other mechanisms may be responsible for this pattern of results. For instance, therapists who are more skilled at facilitating this emotional sequence might also adhere more closely to the EFT model and therefore focus on emotions from the outset. Future research should consider the effect of therapist adherence to the model (Elliott, et al., 2022). Another possible factor could lie within the client domain: clients with a higher capacity for experiencing emotions may be more inclined to present these emotional contents to the therapist, who then reflects them back. Additionally, it may be easier for these clients to access their primary emotions and recover. In any case, these expected results contrast with the lack of relationship and mediational effects observed for other response types (i.e., those focused on thoughts and actions). Nonetheless, this pattern of results should be interpreted with caution. Although our findings indicate that the frequency of therapist responses focused on the client's actions or thoughts is not associated with therapeutic outcomes, these results may be influenced by the lower reliability of the instrument in these cases.

Limitations and Future Research

While this study provides valuable insights into the role of emotional sequences in therapeutic outcomes, there are several limitations to consider.

A key limitation of this study is the small sample size, which reduces statistical power and restricts the ability to assess gender differences, particularly among male participants. The absence of certain relationships may be attributed to this lack of power. A larger sample size would have allowed for mixed linear analyses that consider the

nesting of sessions within clients and clients within therapists. However, the available data and intra-therapist variability were insufficient, making hierarchical analyses unreliable and limiting the study's conclusions.

The analytical strategy used in this research to study the emotional transformation sequence involved measuring the time spent expressing an adaptive emotion following a maladaptive emotion. Other approaches could include counting the number of times the sequence occurs, or using a dichotomous variable to indicate whether the sequence occurred within a session. Additionally, other research examines this sequence by analyzing the extent to which each maladaptive emotion predicts the emergence of an adaptive emotion (Lifshitz et al., 2021). Future research should investigate whether alternative ways of measuring the sequence reveal this pattern of results.

It would be interesting to explore the results of this intervention in a clinical population, particularly among conditions where self-criticism plays a central role (e.g., depression, social anxiety, eating disorders). Future studies could also consider using additional measures beyond depressive symptomatology, such as social anxiety and eating behavior problems. Furthermore, incorporating assessment tools beyond self-reports would add valuable depth to future research.

Regarding therapist responses, we focused on distinguishing only three types based on their focus (centered on the client's emotion, thought, or action). First, a limitation of our study is the low reliability found in measuring therapist focus on the client's thoughts and actions. Second, future research could explore the effect of specific therapist interventions beyond just focusing on emotions. For example, this study did not differentiate the type of empathic response offered by the therapist to the client's emotion or the degree of directiveness in the therapist's interventions. Previous findings indicate that both empathic understanding and therapist directiveness in the first 20 minutes of a

session moderately predict the client's ability to access and engage in primary maladaptive emotions later in the session (Kramer, Pascual-Leone, Rohde, et al., 2016). Additionally, therapist responses could be distinguished by intention, whether the therapist aims to accompany and follow the client's process or to guide it (Elliott & Greenberg, 2021). These modes of response may have differential effects on the client's emotional processing at different times (Herrmann & Auszra, 2019). For instance, the number of guiding interventions by the therapist at the beginning of sessions during the final phase of therapy was associated with a higher frequency of self-compassion in clients with narcissistic personality disorder (Kramer et al., 2018).

Finally, as previously discussed, future studies would benefit from measuring and considering the clients' prior ability to access their emotions, as well as the therapist's adherence to the model and their skill in promoting emotional states through specific emotion-focused responses. Additionally, future research should recognize the role of expressing the existential need inherent in primary maladaptive emotions as an intermediate step within the emotional transformation sequence.

Conclusion

The activation of adaptive emotions following primary maladaptive emotions predicts therapeutic outcomes in Emotion-Focused treatment for self-criticism. This emotional transformation sequence appears to constitute a transtheoretical process of change, defined as a type of emotional flexibility that facilitates dynamic shifts between states of self-organization, where emotional change and transformation occur (Pascual-Leone, 2009; 2018).

In this context, we believe this study makes a novel and valuable contribution: the time dedicated to the emotional transformation sequence is capable of predicting

treatment outcomes at the end of therapy and during follow-up, mediating the effect of therapist responses on these outcomes. Our results suggest that it is valuable to train and supervise therapists to help them reflect their clients' emotions in their responses, differentiate types of emotions to identify the emotional sequence, and facilitate clients spending time expressing primary adaptive emotions after experiencing their chronic emotional pain.

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	Therapist Focus			Clients' emotions in chair work						Change in Outcome					
	Emo	Thougt	Action	PA	PMA	PMAwo PA	PAwo PMA	SEC	PMA -PA	BDI post	BDI FU	HS post	HS FU	IS post	IS FU
Thougt	.03														
Action	.26	.39													
PA	.46*	-.35	-.11												
PMA	.27	.05	.04	.55*											
isolatedPMA	-.24	.25	.09	-.34	-.04										
isolatedPA	.34	-.40	-.09	.95**	.45	-.32									
SEC	-.07	-.41	-.16	-.11	.04	.16	-.10								
PMA-PA	.53*	-.12	-.02	.80**	.84**	-.38	.68**	-.10							
BDI post	-.25	.17	.00	-.20	-.35	-.05	-.18	-.15	-.40						
BDI FU	-.37	.30	.11	-.27	-.32	-.17	-.21	-.16	-.39	.90**					
HS post	.08	.28	-.06	-.33	-.44	.04	-.36	.02	-.48*	.73**	.62**				
HS FU	-.11	.25	-.11	-.29	-.58*	-.17	-.28	-.03	-.53*	.77**	.74**	.82**			
IS post	-.23	.10	-.16	-.24	-.36	-.33	-.27	-.04	-.32	.72**	.75**	.66**	.72**		

IS FU	-.38	.04	-.13	-.28	-.30	-.42	-.19	-.08	-.32	.63**	.81**	.45	.63**	.75**	
Mean	7.37	4.30	1.87	.12	.05	.00	.08	.26	.04	-10.05	-9.67	-1.63	-1.63	-7.10	-8.44
SD	3.04	2.50	1.48	.15	.07	.01	.09	.20	.07	8.75	11.32	3.23	3.63	8.58	9.55

Table 1. Descriptives and Spearman correlations of the variables

*: $p < .05$; ** $p < .01$; Emo: Number of therapist responses focused on the client's emotions; Thought: Number of therapist responses focused on the client's thoughts; Action: Number of therapist responses focused on the client's actions; PMA: Primary maladaptive emotion; PA: Primary adaptive emotion; isolatedPA: Primary adaptive emotions occurring without prior primary maladaptive emotion; isolatedPMA: Primary maladaptive emotions occurring without the subsequent presence of primary adaptive emotion; SEC: Secondary emotions; PMA-PA: Primary maladaptive emotion followed by primary adaptive emotion (Emotional Transformation Sequence); Change in Outcome: BDI post: BDI-II post-treatment minus pre-treatment scores; BDI FU: BDI-II follow-up scores minus pre-treatment scores; HS post: Hated-Self scores post-treatment minus pre-treatment; HS FU: Hated-Self scores at follow-up minus pre-treatment; IS post: Inadequate-Self scores post-treatment minus pre-treatment; IS FU: Inadequate-Self scores at follow-up minus pre-treatment.

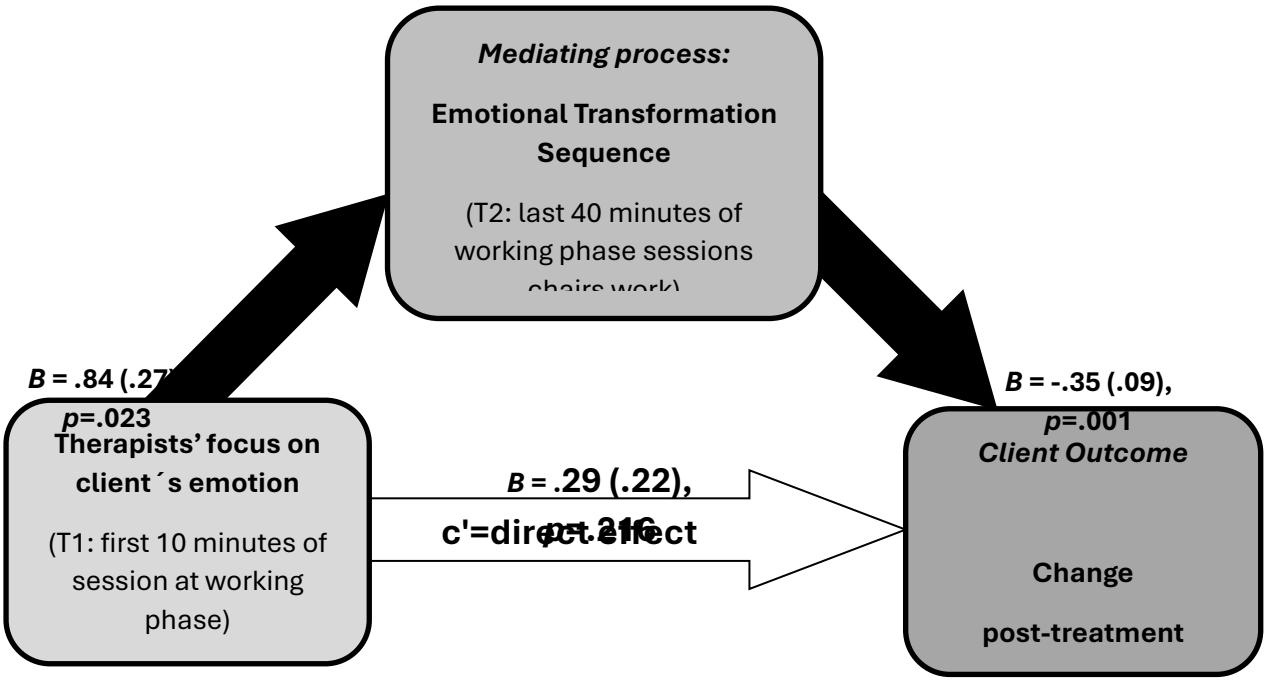
Table 2. Mediational Analyses. Indirect effect on the therapist's emotion focuses on outcome (BDI, HS and IS) through emotional process in chair work.

		Indirect Effect		Completely Stand. Effect	
DV	Mediator	Est. (*SE*)	95% CI	Est. (*SE*)	95% CI
BDI post	PMA-PA	-.69* (.51)	[-2.23– -.00]	-.24 (.18)	[-.74–-.00]
	SEC	.07 (.28)	[-.30–.93]	.02 (.09)	[-.10–.29]
	PMA	-.02 (.28)	[-.98–.23]	-.01 (.09)	[-.30–.08]
	PA	-.29 (.55)	[-1.69–.53]	-.10 (.20)	[-.62–.07]
	IsolatedPA	-.08 (.44)	[-1.21–.42]	-.03 (.16)	[-.45–.15]
BDI FU	PMA-PA	-.53 (.55)	[-2.35–.13]	-.14 (.15)	[-.64–.04]
	Secondary	-.03 (.40)	[-1.18–.58]	-.01 (.09)	[-.27–.15]
	PMA	.01 (.32)	[-.53–.65]	.00 (.08)	[-.13–.15]
	PA	-.27 (.60)	[-1.89–.61]	-.07 (.16)	[-.52–.17]
	IsolatedPA	-.03 (.45)	[-1.16–.58]	-.01 (.12)	[-.33–.18]
HS post	PMA-PA	-.44* (.26)	[-1.07–-.03]	-.42 (.24)	[-.98–-.04]
	SEC	-.01 (.07)	[-.23–.07]	-.01 (.07)	[-.22–.07]
	PMA	-.02 (.13)	[-.44–.18]	-.01 (.14)	[-56–.15]
	PA	-.32 (.24)	[-.93–.00]	-.30 (.21)	[-84–.01]
	IsolatedPA	-.17 (.23)	[-.82–.03]	-.16 (.20)	[-.72–.03]
HS FU	PMA-PA	-.34* (.23)	[-1.00–-.03]	-.29 (.20)	[-.85–-.03]
	SEC	-.00 (.09)	[-.29–.13]	-.00 (.08)	[-.324–.11]
	PMA	.01 (.16)	[-.37–.29]	.01 (.12)	[-.29–.23]
	PA	-.21 (.25)	[-.91–.09]	-.18 (.22)	[-.83–.08]
	IsolatedPA	-.12 (.23)	[-.83–.06]	-.10 (.21)	[-.79–.05]
IS post	PMA-PA	-.90 (.58)	[-2.31–.05]	-.32 (.22)	[-.96–.01]
	SEC	.00 (.22)	[-.48–.44]	.00 (.08)	[-.17–.15]
	PMA	-.01 (.30)	[-1.13–.23]	-.01 (.10)	[-.37–.08]
	PA	-.71 (.48)	[-1.85–.04]	-.25 (.18)	[-.75–.01]
	IsolatedPA	-.36 (.52)	[-1.97–.11]	-.13 (.18)	[-.68–.04]
IS FU	PMA-PA	-.26 (.45)	[-1.48–.46]	-.08 (.15)	[-.50–.15]
	SEC	-.01 (.28)	[-.92–.38]	-.01 (.08)	[-.25–.12]
	PMA	.00 (.27)	[-.47–.35]	.00 (.08)	[-.15–.10]
	PA	-.11 (.52)	[-1.35–.79]	-.03 (.17)	[-.46–.27]
	IsolatedPA	.05 (.40)	[-.56–1.31]	.02 (.14)	[-.18–.51]

Note: IV: Number of emotional responses by the therapist during the first 10 minutes of the session; Mediating variables: PMA: Time spent expressing primary maladaptive emotions; PA: Primary adaptive emotions; IsolatedPA: Primary adaptive emotions that occurred without the prior presence of primary maladaptive emotions; SEC: Secondary emotions; PMA-PA: Primary maladaptive emotion followed by primary adaptive emotion (Emotional Transformation Sequence); DV, Change in Outcome: BDI post: BDI-II post-treatment minus pre-treatment scores; BDI FU: BDI-II follow-up scores minus pre-treatment scores; HS post: Hated-Self scores post-treatment minus pre-treatment; HS FU: Hated-Self scores at follow-up minus pre-treatment; IS

post: Inadequate-Self scores post-treatment minus pre-treatment; IS FU: Inadequate-Self scores at follow-up minus pre-treatment. DV: Changes in depression and self-criticism at post-treatment and follow-up, relative to pre-treatment scores.

Figure 1. The Emotional Transformation Sequence (time spent expressing primary adaptive emotions following primary maladaptive emotions) mediates the relationship between therapist emotional interventions and treatment outcomes (reduction in self-criticism post-treatment).



Note. The mediator was measured as the time spent expressing primary adaptive emotions following the prior presence of primary maladaptive emotions (i.e., Assertive Anger, Hurt/Grief, and Self-Compassion following Fear/Shame) during chair work sessions. Mediation model R^2 = .49; Bootstrapping results for the indirect effect = -.44 (*SE* = .26), 95% *CI* = [-1.06, -.03].