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Abstract
Objective: Emotional experience during psychotherapy is considered a core mechanism of change. Yet the sheer experience itself may not necessarily be beneficial; instead, the *trajectories* of emotional experience need to be explored as possible predictors of treatment outcomes. This study investigated whether clients' pre-treatment levels of emotion regulation and symptoms predicted patterns of session-to-session change in emotional experience. We also explored which patterns better predict clients' improvement in emotion regulation and symptoms from pre- to post treatment. **Method:** One-hundred and seven clients undergoing psychodynamic psychotherapy completed questionnaires on their symptoms and emotion regulation at pre- and post- treatment. They also reported their level of emotional experience at the end of each session. **Results:** Pre-treatment symptoms and difficulties in emotion regulation predicted greater instability in emotional experience. Higher mean levels of emotional experience during treatment were associated with an improvement in emotion regulation, and greater stability during treatment was associated with improvement in emotion regulation and symptoms. **Conclusions:** These findings lend weight to the idea that experiencing emotion in the therapeutic environment has significant implications for clients' ability to manage their emotions outside the session. However, emotions experienced in an unstable manner within therapy are associated with poorer outcomes.

Keywords: psychodynamic psychotherapy; emotional experience; patterns; emotion regulation

Clinical and methodological significance of this article: Therapists can benefit from observing the patterns and not only the level of their clients' emotional experiences. The identification of clients' difficulties early in treatment may help therapists guide clients through the delicate process of carefully attending to their emotions.

Over the previous decade, the investigation of trajectories or patterns of change has significantly contributed to research on psychotherapy processes and outcomes (e.g., Forand & DeRubeis, 2013; Kivlighan & Shaughnessy, 2000; Stiles et al., 2004). Advances in research design and in statistical/analytic methods have made it possible to investigate not only whether clients change during psychotherapy but also *how* they change. An investigation of the patterns of change provides a more dynamic and realistic description of the evolution and timing of change processes over the course of treatment (Hayes, Laurenceau, Feldman, Strauss, & Cardaciotto, 2007; Lutz

et al., 2013; Owen et al., 2015). This is particularly relevant to the examination of emotional experience because emotions tend to fluctuate continuously over time during everyday life, but also in therapy.

Emotional Experience in Psychotherapy

Working with emotions in therapy has been posited to be a vehicle for change in many therapeutic orientations (Whelton, 2004). Despite their conceptual differences, most major approaches, including psychodynamic, cognitive–behavioral, and experiential

treatments converge on the use of emotional experience within therapy to ultimately reduce symptomology (Burum & Goldfried, 2007). These approaches see the avoidance of painful emotion as both an etiological and a maintenance factor of much psychological distress, including depression, anxiety, and interpersonal problems (Foa & Kozak, 1986; Fosha, 2001; Greenberg & Pascual-Leone, 2006; McCullough & Magill, 2009). In an attempt to regulate distress, individuals tend to avoid negative emotion; this avoidance often leads to insufficient processing of the underlying pain. Unprocessed emotions that remain outside awareness or attention often exert considerable influence on clients' behavior, often in maladaptive ways (Burum & Goldfried, 2007; Rice & Elliott, 1996). To overcome emotion avoidance, clients must first be helped to approach emotion; i.e., to attend to their emotional experience and tolerate direct contact with aroused emotions. Thus, most approaches would have therapists encourage their clients to experience their emotions (for reviews, see Aafjes-van Doorn & Barber, 2017; Greenberg, 2012; Summers & Barber, 2010; Thoma & McKay, 2014).[1]

Within psychotherapy, emotional experience is defined as the extent to which clients are in touch and engaged with their emotions within a treatment session (e.g., Greenberg & Pascual-Leone, 2006). As such, it is related to—yet distinct from—the processing of emotions (by symbolizing or creating meaning for them) as well as their expression.

Studies that have investigated the session-to-session effects of emotional experience on subsequent symptom change in psychodynamic therapy report a positive association between emotional experience and symptom improvement (Fisher, Atzil-Slonim, Bar-Kalifa, Rafaeli, & Peri, 2016; see also Town, Salvadori, Falkenstrom, Bradley, & Hardy, 2017). Similar findings were found for other treatment modalities (e.g., Rubel, Rosenbaum, & Lutz, 2017). However, to date, most studies that have found associations between emotional experience and outcome have only considered linear changes in emotional experience (e.g., Auszra, Greenberg, & Herrmann, 2013; Pos, Greenberg, & Warwar, 2009).

Patterns of Emotional Experience and Treatment Outcome

Recently, there has been an increasing realization that simply having a greater emotional experience in a therapy session may not necessarily be beneficial (Carryer & Greenberg, 2010; Whelton, 2004). In a study that examined the association between the length of time spent expressing highly aroused emotions and therapeutic outcome, Carryer and

Greenberg (2010) reported an optimal frequency of 25% of highly aroused emotional experiencing in one session (i.e., judges ratings of 5 or more on the Expressed Emotional Arousal Scale) was related to better treatment outcomes; deviations from this optimal frequency (both up and down) were associated with poorer outcomes. Evidence for the non-linearity and discontinuity of emotional experiencing is accumulating as well. In a study that compared the levels of emotional experience in a group of good versus poor outcome cases, Watson and Bedard (2006) reported that cases characterized by good outcomes exhibited a curvilinear effect in which clients' emotional experiences increased from the beginning to the middle of therapy and subsequently decreased slightly later in therapy. Both studies thus illustrate the need to explore trajectories of emotional experience and better understand the ways in which they may be related to treatment outcomes.

One potential reason for the paucity of studies that have examined patterns of emotional experiencing in psychotherapy research may be related to the central requirement for the investigation of emotional patterns; namely, the availability of repeatedly sampled time-series data with an appropriate temporal resolution. Most studies have tended to assess emotional experience with a limited time resolution (typically 2–3 time points; see Fisher et al., 2016 and Rubel et al., 2017 for exceptions); thus, they were unable to capture different patterns of emotional experiencing from session to session.

Interestingly, patterns of emotion have received extensive attention in other fields of psychology, particularly in psychopathology (e.g., Wichers, Wigman, & Myin-Germeys, 2015). According to psychopathology researchers, emotional patterns convey how people respond emotionally to events and regulate their emotions. These regulation patterns play an essential role in adjustment and psychopathology (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Gross & John, 2003). Emotions that change too strongly or abruptly may signal non-adaptive strategies of emotion regulation and therefore maladjustment (Snir, Bar-Kalifa, Berenson, Downey, & Rafaeli, 2016). Emotional patterns have been demonstrated to precede and prospectively predict changes in psychological well-being and psychopathology over time (Kuppens, 2015; van de Leemput et al., 2014). Recent reviews suggest that emotional patterns that involve high variability and instability of emotional arousal are associated with reduced well-being and various psychopathologies (Houben, Van Den Noortgate, & Kuppens, 2015; Wichers et al., 2015). These findings underscore the importance of examining patterns of emotional experience in psychotherapy as well.

Although studies exploring clients' patterns of change in other psychotherapy processes (Kivlighan & Shaughnessy, 1995, 2000; Weiss, Kivity, & Huppert, 2014) and their associations with outcome variables (e.g., Hayes et al., 2007; Lutz et al., 2013; Owen et al., 2015) are becoming increasingly prevalent, much less is known about clients' patterns of change in emotional experience. Kramer, De Roten, Beretta, Michel, and Despland (2009), for example, used hierarchical linear modeling (HLM) to explore patterns of change in alliance. They found three main patterns that characterize the parameters of change in alliance evolution over sessions: (a) a linear trend described by the slope; (b) the degree of quadratic, *U*-shaped or inverted *U*-shaped trends, and (c) stability vs. instability in alliance ratings, operationalized by the root-mean-square error (RMSE). Their results indicated that only the slope parameter was related to treatment outcome.

The current study follows and describes how different patterns of change in emotional experience observed over the course of psychotherapy are related to clients' pre-treatment characteristics and to changes in outcome.

Client Pretreatment Characteristics

There is growing interest in examining how clients' pre-treatment characteristics (e.g., symptoms, personality) are related to change patterns in both symptoms and alliance (Castonguay, 2013; DeRubeis, Gelfand, German, Fournier, & Forand, 2014; Forand & DeRubeis, 2013; Hersoug, Høglend, Havik, von der Lippe, & Monsen, 2009). Less is known, however, about the possibility that clients' pre-treatment characteristics can also predict the development of emotional experience over the course of therapy. The current study investigated this topic by examining the association between two key pre-treatment characteristics; namely, clients' symptoms and emotion regulation abilities, and their subsequent patterns of emotional experience over the course of psychotherapy.

Pre-treatment Symptoms and Emotional Experience

The relationship between pretreatment symptoms and emotional experience during treatment has received relatively little empirical attention, and the limited studies to date have yielded inconclusive results. In two studies that examined the association between depth of emotional experience and treatment outcome, Missirlian, Toukmanian, Warwar, and Greenberg (2005) and Pos, Greenberg,

Goldman, and Korman (2003) reported no association between pre-treatment symptoms and depth of emotional experience (tested once in early sessions). They concluded that the capacity for emotional experience and processing is independent of clients' depression, general symptomology, self-esteem, and interpersonal problems. In contrast, in a recent study, Fisher et al. (2016) examined the association between emotional experience and client functioning on a session-by-session basis and found support for a bi-directional association; specifically, emotional experience in one session predicted functioning the following week, and functioning reported at the beginning of each session predicted the level of emotional experience within the session. The implication is that clients whose functioning is particularly low (i.e., whose symptoms are considerably increased) may find it difficult to attain a high level of emotional experience in-session, given the considerable mental resources required to fully engage in therapeutic processes such as accessing deep emotions.

The mixed study findings to date suggest that clients' pretreatment symptoms may have a complex effect on the development of emotional experience throughout treatment, thus requiring both extensive evaluation of pre-treatment symptoms (as in Missirlian et al. [2005] and Pos et al. [2003]) and a detailed session-by-session assessment of emotional experience (as described in Fisher et al., 2016). These data would help better assess the effects of pretreatment symptoms on emotional experience, and in particular both the linear and non-linear trajectories of change in these experiences.

Emotion Regulation and Emotional Experience

Emotional experience reflects the extent to which individuals fully and vividly experience their emotions. In contrast, emotion regulation is a meta-emotional process by which individuals influence which emotions they have, when they have them, and how they experience and express them (Gross, 1998). Recent psychopathology research suggests that difficulties in emotion regulation may be the common strand in a range of clinical conditions (cf., Aldao et al., 2010; Gratz & Tull, 2010). Berking et al. (2008) demonstrated that treatment outcomes were improved by combining an intervention that specifically targeted emotion-regulation skills. In fact, treatment for various difficulties are increasingly incorporating a focus on emotion regulation in which adaptive emotion regulation skills are promoted (e.g., Goodman et al., 2014; Gratz,

Bardeen, Levy, Dixon-Gordon, & Tull, 2015; Mennin, Fresco, Ritter, & Heimberg, 2015).

Theorists from various therapeutic approaches have suggested that the opportunity to experience one's emotions within psychotherapy and to do so together with a therapist who is willing to share these experiences and help in their management may enhance emotion regulatory capacities (Fosha, 2001; Greenberg & Pascual-Leone, 2006; McCullough & Magill, 2009). Despite the intuitive appeal of this theoretical idea (i.e., that clients' vivid in-session contact with emotions should contribute to improvement in emotion regulation), few studies have provided data regarding this possibility.

In one of the studies that has addressed this issue, Watson, McMullen, Prosser, and Bedard (2011) examined the relationships among emotion regulation capacities, in-session depth of emotional experience, and outcomes in 66 clients. Depth of emotional experience and emotion regulation was assessed by external raters who rated three sessions (from the early, middle and late phases of therapy) using the Experiencing Scale and Observer-Rated Measure of Affect Regulation (O-MAR), respectively. They found that clients' initial level of emotion regulation predicted their level of emotional experience during the early and working phases of therapy. In addition, clients' depth of emotional experience assessed at the midpoint of therapy predicted improvement in emotion regulation at the end of therapy.

Greenberg (2002) and Kennedy-Moore and Watson (2001) suggested that the usefulness of emotional experience in psychotherapy depends on factors such as clients' initial ability to regulate their emotions, and the intensity and timing with which the emotions are expressed during treatment. Thus, clients' emotion regulation (as well as symptoms) may constitute both the antecedents and consequences of their in-session emotional experiences.

In the current study, we focused on patterns of change in emotional experiencing, session-by-session throughout treatment. Based on the literature that has examined patterns of change along with other process variables (e.g., Kramer et al., 2009), the following patterns were considered: (a) increase or decrease in emotional experience over the course of therapy; (b) the extent of a quadratic trend, and (c) instability in emotional experience ratings. (d) Finally, we explored whether the mean level of emotional experience was still a significant parameter when the other patterns were taken into account. Consistent with recent calls to investigate how clients' pre-treatment characteristics are associated with treatment process and outcome (Castonguay, 2013; DeRubeis et al., 2014), we investigated whether the above-mentioned patterns of emotional experiencing were associated with clients' pre-treatment emotion regulation capacities and symptom levels. We also examined which patterns were associated with improvement in emotion regulation and symptoms from pre to post treatment. Based on the literature, we hypothesized the following:

1. Pre-treatment emotion regulation and pre-treatment symptom levels will predict patterns of emotional experience such that clients who present with fewer emotion regulation difficulties or fewer symptoms (a) will manifest less instability in their self-reported emotional experience; (b) will gradually increase in their emotional experience over the course of therapy; and (c) will report stronger emotional experiences, on average, during therapy.
2. Greater improvement in clients' symptoms or emotion regulation from pre to post treatment will be associated with (a) less instability in their self-reported emotional experience; (b) a gradual increase in emotional experience over the course of therapy; and (c) stronger emotional experiences, on average, during therapy.

Method

Participants and Treatment

The sample was composed of 110 adults who were currently undergoing psychotherapy at a major university outpatient clinic. The clients were all over age 18 (M_{age} = 41 years, SD = 13.7, age range 18–79 years), and the majority were female (59%). The Mini-International Neuropsychiatric Interview version 5.0 (M.I.N.I; Sheehan et al., 1998) was used to establish Axis I diagnoses. The interview was conducted before the actual therapy by intensively trained independent clinicians. All interview sessions were audiotaped, and a random 25% of the interviews were sampled and rated again by an independent clinician, which yielded a mean kappa value of 0.95 for the Axis I diagnoses.

Approximately 41.8% of the clients reported experiencing relationship problems, academic/occupational stress, or other problems but did not meet the criteria for an Axis I diagnosis. Of the total sample, 23.6% had a single diagnosis, 23.6% had two diagnoses and 10.9% had three or more diagnoses. The distribution of client diagnoses included affective disorders[2] (10.9%), anxiety disorders[3] (10.0%), obsessive-compulsive disorder (1.8%), other disorders (0.91%), comorbid anxiety and affective disorders (28.2%) or other comorbid disorders (6.4%).

According to the clients' pretreatment assessments, the mean score for the Outcome Questionnaire (OQ-45) was 70.85 ($SD = 23.86$). This mean score indicates mild to moderate symptoms of impairment in psychological, social, and occupational functioning.

The clients were treated by 62 therapists (48 women and 14 men) to whom they were assigned in an ecologically valid manner based on real-world issues, such as therapist availability and caseload. Twenty-nine therapists treated one client each, 25 therapists treated two clients each, and 8 therapists treated between 3 and 7 clients each. Of the 62 therapists, 87% were MA or doctoral student trainees in the university's psychology department training program, and 13% were advanced clinical psychology interns with 3–6 years of experience. Each therapist received four hours of group supervision in addition to one hour of individual supervision on a weekly basis. All therapy sessions were audiotaped for use in supervision. The supervisors were senior clinicians. Individual and group supervision focused heavily on the review of audiotaped case material and technical interventions designed to facilitate the appropriate use of the therapists' interventions.

Individual psychotherapy consisted of once or twice weekly sessions of predominately psychodynamic psychotherapy. The dominant approach in the clinic is a short-term psychodynamic psychotherapy treatment model. This model includes (1) a focus on affect and the experience and expression of emotions, (2) exploration of attempts to avoid distressing thoughts and feelings, (3) identification of recurring themes and patterns, (4) emphasis on past experiences, (5) focus on interpersonal experiences, (6) emphasis on the therapeutic relationship, and (7) exploration of wishes, dreams or fantasies (Blagys & Hilsenroth, 2000; Shedler, 2010). Treatment was open-ended in length; however, given that psychotherapy was provided by clinical trainees at a university-based outpatient community clinic, treatments were often restricted to nine months. The mean treatment length was 23 sessions ($SD = 8.3$, range = 7–49). Of these sessions, approximately 96.7% ($N = 2439$) were available for analyses. Of the 110 clients initially included in the study, 3 clients (2%) had fewer than 8 recorded sessions and were thus excluded from all analyses. An additional 17 clients (15.4%) dropped out of therapy (deciding one-sidedly to end treatment before the planned termination date), and 14 clients (12.7%) completed all treatment sessions but did not comply with the request to complete the post-treatment Outcome Questionnaires. Thus, for the analyses of the first hypothesis, data were analyzed for 107 clients, whereas the post-treatment outcome analyses comprised data from 76 clients (69.0%).

Instruments

Outcome Questionnaire-45 (OQ-45; Lambert et al., 1996). The OQ-45 is a self-report measure designed to assess patient outcomes during the course of therapy. The 45 items assess the following 3 primary dimensions: (a) subjective discomfort (e.g., anxiety and depression), (b) interpersonal relationships, and (c) social role performance. All 45 items are aggregated to create a total score that can range from 0 to 180, with higher scores reflecting poorer psychological functioning. The OQ-45 has been demonstrated to have good internal consistency ($\alpha = .93$), 3-week test-retest reliability ($r = .84$), and concurrent validity (Lambert et al., 2004; Snell, Mallinckrodt, Hill, & Lambert, 2001). This high-internal consistency was replicated in our sample with $\alpha = .930$.

Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). The DERS is a 36-item measure that assesses the global ability of the client to adaptively respond to distressful emotions in daily life across the following 6 separate domains: (a) non-acceptance of negative emotions, (b) inability to engage in goal-directed behaviors when experiencing negative emotions, (c) difficulty in controlling impulsive behaviors when experiencing negative emotions, (d) limited access to emotion-regulation strategies perceived as effective, (e) lack of emotional awareness, and (f) lack of emotional clarity. Respondents rate each statement on a 5-point Likert scale that ranges from "almost never" (0–10%) to "almost always" (91–100%). The DERS has been demonstrated to be sensitive to changes over time (Gratz & Gunderson, 2006) and exhibited high-internal consistency in our sample ($\alpha = .951$).

Emotional experience self-report and therapist-report (EE-SR and EE-TR; Fisher et al., 2016). The EE-SR is a measure used to assess clients' estimates of their own emotional experience during a session. Clients are asked to evaluate the extent to which they agree with the following statement: "in today's session I fully and vividly experienced my emotions" on a scale that ranges from 0 to 7. In the current study, the ICC estimates indicated that 50.47% of the variance in this item was accounted for by differences between the clients (consistent subject difference), whereas 49.53% of the variance was accounted for by between-session changes.[4] This finding suggests that the EE-SR is both stable (in measuring the same individual over time) and sensitive (in identifying changes within the individual). The test–retest reliability was .61 (Fisher et al., 2016). More information about the EE-SR validity can be found in Appendix 1.

Procedure

The study was conducted in a university-based outpatient clinic between August 2014 and August 2015. The study procedures were part of the routine monitoring battery in the clinic. Clients were asked to participate in the study and were told that they could choose to terminate their participation in the study at any time without jeopardizing treatment.

The OQ-45 and DERS questionnaires were administered to the clients as part of the intake procedure (i.e., at pre-treatment) and again following treatment termination. The clients completed the EE-SR electronically after each therapeutic session using computers located in the clinic rooms.

Results

The session-level dataset had a hierarchical structure; as a result, individual observations were not independent of one another and thus violate the assumption of independent observations made by traditional statistical methods. Therefore, we accounted for the nesting of sessions within clients with multilevel modeling (MLM) using the PROC MIXED procedure in SAS 9.4 (SAS Institute, 2012). In all models, we tested the need to include the therapist at Level 3, but a deviance test indicated no improvement in fit statistics.

Longitudinal Unconditional Model

To estimate the longitudinal unconditional model, we ran a model in which the emotional experience was the outcome and Time and Time^2 were the Level-1 predictors. Thus, the MLM equations in which the emotional experience of client c in session t was the outcome were as follows:

$$\text{Level 1: Emotional Experience}_{ct} = \beta_{0c}$$
$$+ \beta_{1c}*\text{Time}_{ct} + \beta_{2c}*\text{Time}_{ct}^2 + e_{ct}$$
$$\text{Level 2: } \beta_{0c} = \gamma_{00} + u_{0c}; \beta_{1c} = \gamma_{10} + u_{1c};$$
$$\beta_{2c} = \gamma_{20} + u_{2c}.$$

To reduce the multi-collinearity between the linear and quadratic terms, session number was centered on the middle session. Thus, the intercept reflects the level of emotional experience in the middle of the treatment, which represents the mean level of emotional experience across treatment (Bolger & Laurenceau, 2013).[5] The effect of Time represented the presence of a linear pattern in emotional experience, and the effect of Time^2 represented the presence of a quadratic pattern in this experience. We allowed

Table I. Unconditional model of Time and Time^2 as predictors of emotional experience.

	Estimate (SE)	95% CI	*P*	Effect size
Fixed effects:				
Intercept γ_{00}	6.119 (0.076)	5.968;6.270	<.0001	
Time γ_{10}	0.141 (0.030)	0.082;0.201	<.0001	0.27
Time^2 γ_{20}	0.019 (0.027)	−0.037;0.075	.489	0.03
Random effects:				
Level 2:				
Intercept	0.572 (0.084)		<.0001	
Time	0.028 (0.012)		.011	
Time^2	0.003 (0.006)		.315	
Level 1:				
Residual	0.524 (0.017)		<.0001	

Notes: Time represents the linear change in emotional experience over the course of treatment. Time^2 represents the quadratic change in emotional experience over the course of treatment. The time scale was divided by 10 to facilitate table presentation. *P*-values for fixed effects were based on two-tailed *t*-tests using the Satterwaite method for computing DF. Effect sizes were estimated with semi-partial R^2 for linear mixed models (Edwards, Muller, Wolfinger, Qaqish, & Schabenberger, 2008), where $R^2 \leq 0.01$ represents Small effect size; Medium ≤ 0.09; Large ≤ 0.25.

the model's three parameters to vary between clients (i.e., they were considered random effects).

The results of the longitudinal unconditional model are presented in Table I. On average, the clients reported high levels of emotional experience, with significant between-client variability around this average level. On average, there was also a significant linear increase in the clients' emotional experience over the course of treatment; however, there was also significant between-client variability in this linear trajectory. The fixed and random quadratic effects were not significant. Therefore, we ran a reduced longitudinal unconditional model without the quadratic effects which did not reduce the model fit ($\chi^2(4.2) = 2$, $p = .122$). Thus, we used this reduced model as the baseline for our subsequent conditional models.

Pre-treatment Conditional Model

After establishing the longitudinal unconditional model, we tested the first hypothesis regarding pre-treatment symptoms and emotion regulation as predictors of emotional experience patterns. Specifically, we used the pre-treatment characteristics as the Level-2 predictors of the client-level intercept (i.e., β_{0c} represents the level) and linear effects (β_{1c}). By grand-mean centering the Level-2 predictors, we enabled the main fixed effects of the intercept (γ_{00}) and Time (γ_{10}) to represent the effects for the clients with average levels of pre-treatment symptoms

and emotion regulation. Thus, the Level-2 equations described above were modified as follows:

$$\text{Level 2: } \beta_{0c} = \gamma_{00} + \gamma_{01*}\text{Pretreatment Symptoms}_c$$
$$+ \gamma_{02*}\text{Pretreatment Regulation}_c + u_{0c};$$
$$\beta_{1c} = \gamma_{10} + \gamma_{11*}\text{Pretreatment Symptoms}_c$$
$$+ \gamma_{12*}\text{Pretreatment Regulation}_c + u_{1c}.$$

Using the method outlined by Hoffman (2007), we also investigated whether the pre-treatment characteristics predicted the magnitude of the within-client (i.e., Level-1) variability (i.e., instability in emotional experience). When considering within-person variability, it is useful to distinguish between within-person change, which is defined as systematic trends of change over time (e.g., developmental processes such as growth or decline) and within-person variability, which is defined as relatively short-term fluctuations around the within-person change trend (often operationalized by the magnitude of variation across observations within individuals; Nesselroade & Ram, 2004).

Multilevel models with heterogeneous variance (sometimes called location-scale models as in Hedeker, Mermelstein, Berbaum, & Campbell, 2009; dispersion models as in Hoffman, 2007, or models with heterogeneous variances as in Raudenbush & Bryk, 2002) provide a parsimonious, powerful approach to modeling both within-person change and variability in individuals' ratings, as well as using explanatory variables for explaining these variabilities (Hoffman, 2007). These types of models is an extension to commonly used mixed-effects models; they differ in permitting unequal variances in both the within- and between-subjects variance components. By allowing intrinsic fluctuation to differ on covariates, these models provide a better fit to the data than do common multilevel models, which assume intrinsic fluctuation to be homogeneous (i.e., the same across clients) and treat them as errors around the average level (Liu, Bangerter, Rovine, Zarit, & Almeida, 2016).

This approach was used here to model the within-client variance in the emotional experience ratings. In this procedure, within-client variation was operationalized using the Level-1 (within-person) model residual of emotional experience, after taking into account the clients' average level of emotional experience as well as within-client covariates. The resulting value, which was termed "intrinsic fluctuation", represented the amount of variance left unexplained by all the Level-1 covariates of the multilevel models (Charles, Piazza, Luong, & Almeida, 2009). Pre-treatment symptoms and emotion regulation (hypothesis 1a) and residualized post-treatment symptoms and emotion regulation (hypothesis 2a) were used to explain between-client differences in this within-client residual term.

Specifically, the variance of the Level-1 residual errors (which distributed as $e_{ct} \sim N(0, \sigma_c^2)$ was now allowed to vary between the clients and was predicted by the clients' pre-treatment characteristics using the following equation:

$$\sigma_c^2 = \alpha_0(\exp(\alpha_1 * \text{Pretreatment Symptoms}_c$$
$$+ \alpha_2 * \text{Pretreatment Regulation}_c)),$$

where σ_c^2 is the residual variance for client c, α_0 is the expected residual variance for the average client, and α_1 and α_2 are the effects of the pre-treatment characteristics on the magnitude of the within-client variability. Note that the exponential function was used to normalize the variance (which enabled a linear prediction model to be used) and eliminate the dependence of the variance on the mean (for more information, see Hoffman, 2007).

The results of the longitudinal conditional model with the pre-treatment OQ-45 and DERS as predictors are presented in Table II. Consistent with our prediction (Prediction 1a), both the OQ-45 and DERS (α_1, α_2) were significant predictors of the amount of residual variance in the emotional experience, with greater symptoms or dysregulation scores associated with more residual (i.e., within-person) variance in the emotional experience.

The differential within-person variance across the levels of symptoms and emotion regulation is shown in Appendix 2, Figure 1, which plots the Level-1 unstandardized residuals against the OQ-45 values (panel a) and DERS values (panel b). Following adjustment for the fixed effects of the OQ-45 and DERS (i.e., their effects on the mean), the variance of the residuals substantially increased at higher levels of the OQ-45 and DERS.

In contrast to our predictions (1b and 1c), both the pre-treatment OQ-45 and pre-treatment DERS were unrelated to the level of emotional experience (γ_{01}, γ_{02}) and to the linear fixed effect (γ_{11}, γ_{12}). It is worth noting that contrary to expectations, pre-treatment OQ-45 marginally predicted linear fixed effect (i.e., higher pre-treatment symptoms were marginally associated with increases in emotional experience over the course of treatment).

Pre-to-Post Treatment Conditional Model

The second hypothesis aimed to examine the association between emotional experience patterns and outcome change from pre- to post-treatment. To adjust for pre-treatment symptoms we first regressed the post-treatment symptoms and post-treatment emotion regulation onto their pre-treatment levels using OLS regressions, and took the residuals from

Table II. Longitudinal conditional model with pre-treatment variables as predictors of emotional experience.

	Estimate (SE)	95% CI	P	Effect size
Fixed effects:				
Intercept γ_{00}	6.119 (0.080)	5.968;6.270	<.0001	
Time γ_{10}	0.164 (0.030)	0.082;0.201	<.0001	0.41
Pre OQ-45 γ_{01}	−0.004 (0.005)	−0.013;0.007	.457	0.00
Pre DERS γ_{02}	−0.003 (0.002)	−0.012;0.006	.529	0.00
Pre OQ-45*Time γ_{11}	0.003 (0.002)	0.000;0.007	.066	0.07
Pre DERS*Time γ_{12}	−0.002 (0.001)	−0.005;0.001	.207	0.04
Random effects:				
Level 2:				
Intercept	0.592 (0.092)		<.0001	
Time	0.027 (0.014)		.025	
Level 1:				
Level-1 Residual α_0	0.473 (0.016)		<.0001	
EXP pre OQ-45 α_1	0.010 (0.002)		<.0001	
EXP pre DERS α_2	0.004 (0.002)		.004	

Notes: Pre OQ-45 = Pre-treatment Outcome Questionnaire- 45; Pre DERS = Pre-treatment Difficulties in Emotion Regulation Scale; EXP pre OQ-45 = the effect of pre-treatment OQ-45 on the residual variance; EXP pre DERS = the effect of pre-treatment DERS on the residual variance.

these models as new covariates.[6] Using the residuals as an operationalization of the pre-to-post change scores, we ascertained that the shared variability between pre-treatment characteristics and pre-to-post change was removed in the model which examined the associations of the latter with the emotional experience patterns (second hypothesis). In other words, the variance that remained can be assumed to be related (at least partially) to gains following treatment.

Afterwards, we used the same approach as previously described for predicting the client-level intercept (i.e., β_{0c} represents the level), linear effect (β_{1c} represents the linear pattern), and the amount of Level-1 residual (i.e., σ_c^2 represents instability); the independent variables were the obtained residual post-treatment symptoms and emotional regulation difficulties.[7] In this model as well, time was centered around the middle session; therefore, the intercept represented the level of emotional experience in the middle of the treatment (and mean level of emotional experience). The previously described Level-2 equations were modified as follows:

$$\text{Level 2: } \beta_{0c} = \gamma_{00} + \gamma_{01*}\text{Residual Symptoms}_c + \gamma_{02*}\text{Residual Regulation}_c + u_{0c};$$
$$\beta_{1c} = \gamma_{10} + \gamma_{11*}\text{Residual Symptoms}_c + \gamma_{12*}\text{Residual Regulation}_c + u_{1c};$$

and the equation that predicted the Level-1 residual was modified as follows:

$$\sigma_c^2 = \alpha_0(\exp(\alpha_1*\text{Residual Symptoms}_c + \alpha_2*\text{Residual Regulation}_c)).$$

The results of the longitudinal conditional model with the residualized post-treatment OQ-45 and DERS as predictors are presented in Table III.

Table III. Conditional model of time and post-treatment variables as predictors of emotional experience.

	Estimate (SE)	95% CI	P	Effect size
Fixed effects:				
Intercept γ_{00}	6.179 (0.084)	6.014; 6.346	<.0001	
Time γ_{10}	0.171 (0.032)	0.106; 0.257	<.0001	
post OQ-45 γ_{01}	−0.002 (0.007)	−0.015; 0.012	.795	
post DERS γ_{02}	−0.015 (0.007)	−0.028; −0.001	.030	
post OQ-45*Time γ_{11}	0.000 (0.002)	−0.004; 0.005	.827	
post DERS*Time γ_{12}	0.003 (0.003)	−0.003; 0.008	.313	
Random effects:				
Level 2:				
Intercept	0.465 (0.028)		<.0001	
Time	0.028 (0.013)		.025	
Level 1:				
Level-1 Residual α_0	0.440 (0.017)		<.0001	
EXP post OQ-45 α_1	0.016 (0.003)		<.0001	
EXP post DERS α_2	0.009 (0.003)		.003	

Notes: Post OQ-45 = Residual scores of post-treatment Outcome Questionnaire- 45; Post DERS = Residual scores of post-treatment Difficulties in Emotion Regulation Scale. EXP post OQ-45 = the effect of residualized OQ-45 on the residual variance; EXP post DERS = the effect of residualized DERS on the residual variance.

Consistent with our prediction (2a), both residualized post-treatment scores (i.e., the OQ-45 and DERS) were significantly related to the amount of the residual variance in the emotional experience (α_3, α_4), with increased residual symptoms or residual dysregulation scores associated with more residual (i.e., within-person) variance in emotional experience.

The differential within-person variance across the levels of residualized symptoms and emotion regulation is shown in Appendix 2, Figure 1, which plots the Level-1 unstandardized residuals against the residualized OQ-45 values (panel c) and residualized DERS values (panel d). Following adjustment for the fixed effects of the residualized OQ-45 and DERS (i.e., their effects on the mean), the variance of the self-reported Experiencing Scale residuals substantially increased at higher levels of symptoms and dysregulation.

Partially confirming our prediction (2b), the level of emotional experience was positively and significantly associated with the residualized post-treatment DERS (γ_{02}); however, it was not associated with the residualized post-treatment OQ-45 (γ_{12}). In contrast to our prediction (2c), both residualized post-treatment outcomes (the OQ-45 and DERS) were unrelated to the linear fixed effect (γ_{11}, γ_{12}). Thus, the linear growth pattern in experience was not associated with change in the OQ and DERS levels.

Discussion

The current study employed intensive repeated measures to investigate which pre-treatment characteristics predicted the development of emotional experience, and which patterns better-described clients that presented greater improvement in emotion regulation and symptoms pre- to post-treatment. Thus, it heeded recent calls to examine the therapeutic process at a finer temporal resolution (Emmelkamp et al., 2014; Schiepek et al., 2016) and attend to specific client characteristics that may affect the way they are involved in the treatment process (Crits-Christoph, Gibbons, & Mukherjee, 2013; DeRubeis et al., 2014).

The results supported our first hypothesis (Hypothesis 1a) and indicated that increased levels of symptoms predicted more instability in clients' ratings of emotional experience. This association between the pre-treatment symptom level and the instability of the in-session emotional experience is in line with recent findings from psychopathology research which has reported that high levels of emotional instability are associated with various mental disorders (e.g., Miller & Pilkonis, 2006; Thompson et al., 2012; Trull et al., 2008). In their recent meta-analysis, Houben et al. (2015) confirmed that overall, low psychological well-being co-occurs with more unstable emotions.

Similarly, results demonstrated that higher levels of pre-treatment emotion regulation predicted more in-treatment emotional instability. Although previously undocumented, this association is consistent with recent reviews of the psychopathology literature which have suggested that strong fluctuations in emotional experience are indicative of difficulties in emotion regulation (Kuppens, Oravecz, & Tuerlinckx, 2010). Moreover, the very definition of emotion regulation as a process used to increase, maintain, or decrease emotional experience (Gross, 1999) leads to the intuitive expectation that clients with emotion regulation difficulties are likely to demonstrate more lability or instability in emotional experience during treatment. Yet, the instability we observed may be tied to other components of emotion dysregulation. Specifically, alongside impaired regulatory control, those clients whose emotions were more unstable may also have had impaired awareness, labeling, or differentiation of emotions (Gratz & Roemer, 2004). These would simply render their emotional reports less reliable.

Contrary to our hypotheses (1b and 1c), clients' symptoms or difficulties in emotion regulation did not predict a gradual increase or stronger average levels of emotional experiences within therapy. Surprisingly, greater symptoms were marginally associated with growth in emotional experience, suggesting that further research is needed to determine whether this trend is replicable and to elucidate the association between symptom severity and emotional experiences within psychotherapy.

The finding with pre-treatment emotion regulation runs counter those reported in Watson et al. (2011), who found an association between emotion regulation early in therapy and emotional experience and processing at a later point in therapy. These divergent may be the result of the differences in the study design (a single sampled session for each client in Watson's study vs. session-by-session data in our study, as well as experiential vs. psychodynamic therapy respectively). They may also be a result of the different measures used. Whereas Watson et al. (2011) used the Experiencing Scale, which assesses clients' emotional engagement and their cognitive processing of these emotions, the current study specifically focused on the emotional engagement component. It may be that difficulties in emotion regulation interrupt an individual's ability to process emotions but not to experience them. Clearly, further research is needed to clarify the role of emotion regulation in emotional experiences.

As predicted (Hypothesis 2a), more stability in clients' ratings of emotional experience was associated with improvement in symptoms and emotion regulation. These findings are consistent with Greenberg and Safran (1987) who noted that although clients who exhibited symptomatic improvement did not necessarily demonstrate greater improvement in their levels of emotional experience, they did manifest flatter change patterns marked by less deterioration and higher consistency in maintaining their initial levels of emotional experience.

Our results partially supported Hypothesis 2.b by indicating that clients who displayed higher levels of emotional experience during therapy improved in their emotion regulation abilities (though not in their symptoms). This supportive finding is consistent with several contemporary psychotherapy theories which argue that the opportunity to experience one's emotions within psychotherapy represents a key transformational agent that leads to better emotion regulatory capacities (Fosha, 2001; Greenberg, 2012). The absence of a similar finding with regards to symptoms may stem from a more complex association between emotional experience and symptoms. For example, in Watson et al. (2011), this association was mediated by the client's level of emotion regulation. Future studies may benefit from investigating this potential mediation in session-by-session data.

Contrary to our final hypothesis (2.c), linear growth in emotional experience was not associated with an improvement in symptoms or in emotion regulation. In our initial analyses, we found that in general, clients tended to report increased emotional experience over the course of treatment; however, no association was identified between this growth and treatment outcome. One potential explanation for this finding may involve the relatively high levels of reported emotional experience and the small variance in these reports; these factors may have created a ceiling effect. Nevertheless, these findings may suggest that increases in emotional experience are a typical and natural consequence of clients participating in treatments in which they are expected to talk about emotions and their experiences.

Taken together, the pre-to-post treatment prediction findings suggest that while the level of emotional experience during therapy is related, to some extent, to greater change in treatment outcomes, the stability and predictability of this experience appear to play a larger role in the prediction of treatment outcomes. In general, emotions that are less predictable may be experienced as overwhelming or confusing and thus interfere with emotional processing, leading to dysregulation and increased distress (Greenberg, 2002; Linehan, 1993; McCullough et al., 2003).

This finding also suggests that clients who suffer from increased symptoms and/or dysregulation may benefit from therapy in which emotional experience is gradually (rather than abruptly) broadened, reaching higher, yet still stable and consistent levels. Such a process may provide greater opportunities for clients to learn how to regulate their emotions and achieve symptomatic relief.

We drew our conclusions based on a sample of clients who underwent dynamic psychotherapy. Nonetheless, they are also in line with recent ideas in other schools of psychotherapy, including CBT. For example, "third generation" CBT (e.g., Hayes, 2004) has argued for a fundamental shift from a focus on control or elimination of unpleasant emotions, to increased interest in interventions that focus on acceptance of such emotions. Such prolonged contact with painful emotions is thought to provide clients with the opportunity to reprocess (Greenberg & Pascual-Leone, 2006), rather than eliminate them.

Limitations and Future Directions

The greatest limitation of our study is its reliance on correlational data, which preclude any strong inference of causal associations between emotional patterns and treatment outcomes. Our thinking was guided by the belief that emotional patterns within therapy are predictors of post-therapy outcomes. At the same time, we must consider both the possibility of reverse causation and the possibility that some third variables drive both emotional patterns *and* outcomes. For example, it is possible that clients characterized by strong borderline personality traits (e.g., intense and unstable emotions as well as difficulties with emotion regulation and higher symptomatology; e.g., Ebner-Priemer, Eid, Kleindienst, Stabenow, & Trull, 2009) may present greater emotion instability as well as poorer treatment outcomes. Conversely, it is possible that clients characterized by high emotional intelligence regulate their emotions successfully when necessary but do so flexibly, thereby leaving room for emotions to emerge (Peña-Sarrionandia, Mikolajczak, & Gross, 2015); if so, their abilities could also help them be more open and easy to change therapeutically. Future studies could explore whether these characteristics (i.e., borderline personality traits, emotional intelligence) or others may explain the association between clients' emotion patterns and their treatment outcomes.

Several additional study limitations are worth noting. First, it was designed as a naturalistic field study of clients in psychodynamic therapy, without a non-treatment (or alternative treatment) control

group. In addition, the therapists were predominately trainees, and adherence tests were not conducted. Hence, the results cannot be attributed solely to the treatment offered, nor can they be specifically linked to this therapeutic orientation.

Second, the index of emotional experience used in the current study (the EE-SR) does not distinguish between different emotions; rather, it assesses general engagement with emotional experience. This choice may have obscured some effects that may be specific to patterns of experience in particular emotions. For example, several authors have differentiated between primary emotions (i.e., the initial reactions to a situation) and secondary emotions (i.e., the responses that are secondary to other more primary internal emotions and may be defenses against them; Fosha, 2000; Greenberg & Safran, 1987). These authors suggested that primary emotions need to be accessed for their adaptive information and capacity to organize action, whereas secondary maladaptive emotions need to be regulated and transformed. Accordingly, though we did not find any association between growth in emotional experience and therapy outcomes, a more fine-grained examination that differentiates between primary and secondary emotions could have yielded different results.

Another limitation is that clients' emotional experience was investigated at a relatively low temporal resolution (once per session). This enabled us to measure patterns at the treatment level. However, in reality, emotions fluctuate much more frequently (Butler, 2015). The measurement of fluctuation is dependent on the temporal sampling frame. It is likely that different intervals will yield different magnitudes and patterns of variability which may be differently associated with treatment outcome. Future studies should implement micro-level analyses in which the emotional experiences of clients are coded continuously within sessions. Previous studies have investigated in-session emotional changes (Kramer, Pascual-Leone, Despland, & De Roten, 2014; Pascual-Leone, 2009; Pascual-Leone & Greenberg, 2007); however, they did not address clients' emotional instability, a pattern that we found to be of highest importance.

Finally, since most therapists in our sample only treated one client each, we could not examine therapist effects. Future studies with larger numbers of clients per therapist are necessary to examine the existence of therapist effects (i.e., whether clients treated by the same therapists show a similar pattern of emotional experience) and whether certain therapists' characteristics (e.g., emotion regulation, or attunement to clients' emotional experience) affect these patterns.

These limitations notwithstanding, the current study extends investigations of emotional change in therapy in several ways. In contrast to previous studies which only considered linear changes in emotional experience in therapy, the current investigation employed session-by-session measures to assess trajectories of emotional experience. This approach enabled us to examine, alongside linear and curvilinear trajectories, the degree of session-to-session instability.[8] Consequently, our findings provide a dynamic description of the evolution and timing of changes in emotional experience over the course of treatment. These descriptions and the within-subject analyses of emotional experience over time that they permit, are particularly useful when thinking about individual differences in treatment processes, and ultimately, the search for ways to custom-tailor psychotherapy to clients' unique characteristics (as advocated by various authors, e.g., DeRubeis et al., 2014). For example, given the importance of stable emotional experiences for individuals with poorer emotional regulation skills, future research could investigate which interventions promote emotional stability.

Despite the increasing acknowledgment of the centrality of emotion regulation within psychopathology, there is still a paucity of investigations that explore which client change processes best promote this ability (for exceptions, see Watson et al., 2011). The current study aimed to lessen this gap in the literature; however, given the importance of emotion regulation to clients' mental health, we believe that future research should continue to investigate ways to predict and ultimately, augment clients' abilities to regulate emotions.

In conclusion, this study assessed whether clients' pretreatment emotion regulation and symptoms are associated with patterns of emotional change (i.e., level, linear change, and instability) and whether these emotional patterns are associated with subsequent changes in emotional regulation and symptoms. The findings indicated that clients who were symptomatic and/or emotionally dysregulated early in treatment manifested increased emotional instability over the course of treatment. In contrast, greater stability was associated with better symptomatic outcomes and improvement in emotion regulation capacities. Finally, clients who reported stronger emotional experiences during therapy also exhibited more improvement in their emotion regulation capacity.

By acknowledging the nonlinear nature of emotional experience, and specifically, the centrality of emotional instability to treatment outcomes, our results emphasize the potential contribution of investigating emotional experience as a dynamic system to

improve treatment outcomes. Recently, Bornas, Noguera, Pincus, and Buela-Casal (2014) argued that the "time has come for psychotherapy process researchers and clinicians alike to begin to account for emotional movement in a more explicit manner as they consider therapeutic effects … ". Thus, though considerable research has been conducted regarding in-session dynamics of emotional experience (i.e., how emotions change during a session), to the best of our knowledge, prior studies have not utilized growth curves analyses to examine the non-linear dynamics of emotional experience from session to session over the course of therapy.

These findings have several clinical implications. First, they advance the idea that experiencing emotion in the therapeutic environment has significant implications for clients' abilities to manage their emotions outside the session. However, emotions experienced in an unstable manner within therapy are associated with poorer outcomes. Therefore, therapists should pay attention to the pattern, and not only the level, of their clients' emotional experience. Specifically, it appears that therapists should help their clients approach emotions in a gradual manner, which may lead to stable and consistent levels of the experience. This pattern may help clients learn how to regulate emotions better, which in turn, may lead to symptomatic relief. Finally, the identification of clients' difficulties (including the symptom levels and emotional dysregulation) early in treatment may help therapists be more attentive to guiding clients through the delicate process of attending to their emotions.

Notes

[1] Emotional work is usually needed when negative and painful emotions, such as shame or hurt, are experienced (McCullough et al., 2003). Some research efforts have been made to explore the distinct effect of different categories of emotions. For example, Kramer et al. (2014) compared sessions from good vs. poor outcome cases and found that clients with good treatment outcomes experienced at least one moment of grief or hurt during the session. By contrast, it should be noted that the current study does not distinguish between different emotions; instead, it explores the level of the general engagement in the experience of emotions.

[2] Affective disorders cluster included the following DSM-IV diagnoses: 296.31, 296.32, 296.63, 300.4, and 296.05.

[3] Anxiety disorders cluster included the following DSM-IV diagnoses: 300.01, 300.02, 300.21, 300.22, and 300.23.

[4] To differentiate between actual between-session variability and simple scale error, multi-item scales are recommended (see Bolger & Laurenceau, 2013). Unfortunately, this was not possible with the EE-SR. Still, the 50/50 split in variance is encouraging in this regard indication that the EE-SR, which was able to detect reliable between-subject differences, was likely to be sensitive enough to also detect between-session differences.

[5] In fact, the correlation between clients' mean experience level and their individualized intercept parameter (the u_{0c}) was an almost perfect $r = .99$.

[6] We addressed missing data at post-treatment with a multivariate imputation by chained equations (Azur, Stuart, Frangakis, & Leaf, 2011), as implemented in SAS PROC MI and PROC Analyze. For the multiple imputation step, we identified five measures that were most highly correlated with the predictors, and included them in the imputation model. Ten datasets were generated, each was analyzed using the specified model. The results of this individual analysis were then combined to generate the Type III fixed effect values (Rubin, 1987). The pattern of results from the imputed data was similar to the results obtained using complete-case deletion. Therefore, the results presented in Table III are based on the analysis of all available data.

[7] This approach enabled us to remain consistent with the statistical approach employed to examine the pre-treatment characteristics as predictors of emotional experience patterns. We opted not to aggregate the Level-1 variable (e.g., experience rating) into Level-2 variables (e.g., by averaging the experience ratings across treatment) or Level-2 latent estimates (e.g., using Bayesian estimates) to represent emotional experience patterns since both of these approaches would have overlooked the construct reliability by ignoring the variability around each client's aggregated estimate or the fact that each client provided different amounts of data for creating his/her estimates (see Hoffman, 2007).

[8] The current study sought to predict clients' random error variance (i.e., Level-1 residuals) in emotional experience ratings. We argue that this index can be interpreted as the client's fluctuation above and beyond the within-person therapy effect (i.e., the client's linear trend line over the entire course of therapy). The inclusion of predictors of this index (namely, pre-treatment symptoms as well as difficulties in emotion regulation) adds a new perspective to the research on instability. This method has been used extensively outside of psychotherapy studies to evaluate "moderated variation" hypotheses within a variety of intensive measurement designs (e.g., Ferrer & Rast, 2017; Hedeker, Mermelstein, & Demirtas, 2008).

[9] To differentiate between actual between-session variability and simple scale error, multi-item scales are recommended (see Bolger & Laurenceau, 2013; Cranford et al., 2006). Unfortunately, this was not possible with the EE-SR. Still, the 50/50 split in variance is very encouraging in this regard. We see it as indication that the EE-SR, which was able to detect reliable between-subject differences, was likely to be sensitive enough to also detect between-session differences.

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Appendices

Appendix 1

Emotional Experience Self-Report and Therapist-Report (EE-SR and EE-TR; Fisher et al., 2016**).** The EE-SR is a measure used to assess clients' estimates of their own emotional experience during a session. Clients are asked to evaluate the extent to which they agree with the following statement: "in today's session I fully and vividly experienced my emotions" on a scale that ranges from 0 to 7. In the current study, the ICC estimates indicated that 50.47% of the variance in this item was accounted for by differences between the clients (consistent subject difference), whereas 49.53% of the variance was accounted for by between-session changes.[9] This finding suggests that the EE-SR is both stable (in measuring the same individual over time) and sensitive (in identifying changes within the individual). The test–retest reliability was .61 (Fisher et al., 2016). Convergent validity was tested against the ERQ (Emotion Regulation Questionnaire; Gross & John, 2003), which is a widely accepted and commonly used measure that assesses two emotion regulation strategies—suppression and reappraisal. On a sample of 230 clients, a significant negative correlation was found between clients' pre-

treatment suppression and EE-SR ratings in the first session ($r = -.19$, $p < .01$), suggesting that this scale indeed measured clients' tendency to experience their emotions (as opposed to suppressing them). A positive but non-significant correlation was found between clients' pre-treatment reappraisal and EE-SR ratings on the first session ($r = .11$, $p = .09$), suggesting that the EE-SR did not measure the processing aspect of emotion. In addition, in a sample of 1889 observations from 106 clients, a very high correlation $r = .59$, ($p < .001$) was observed between the EE-SR and the Affective Experiences subscale of the Session Report (SR; Flückiger, Holtforth, Znoj, Caspar, & Wampold, 2013; Lutz et al., 2013; Rubel et al., 2017). The EE-TR, a parallel therapist

version in which therapists were asked to rate their clients' levels of emotional experience, was administered after every session. The client and therapist versions in the present sample were moderately correlated ($r = .41$, $p < .001$), which suggests some convergent validity. Leading emotion researchers (e.g., Wallbott & Scherer, 1989) have argued that emotional experience is best indexed by the introspective reports of an experiencing subject. Therefore, in the current study, we only used the EE-SR in the analyses.
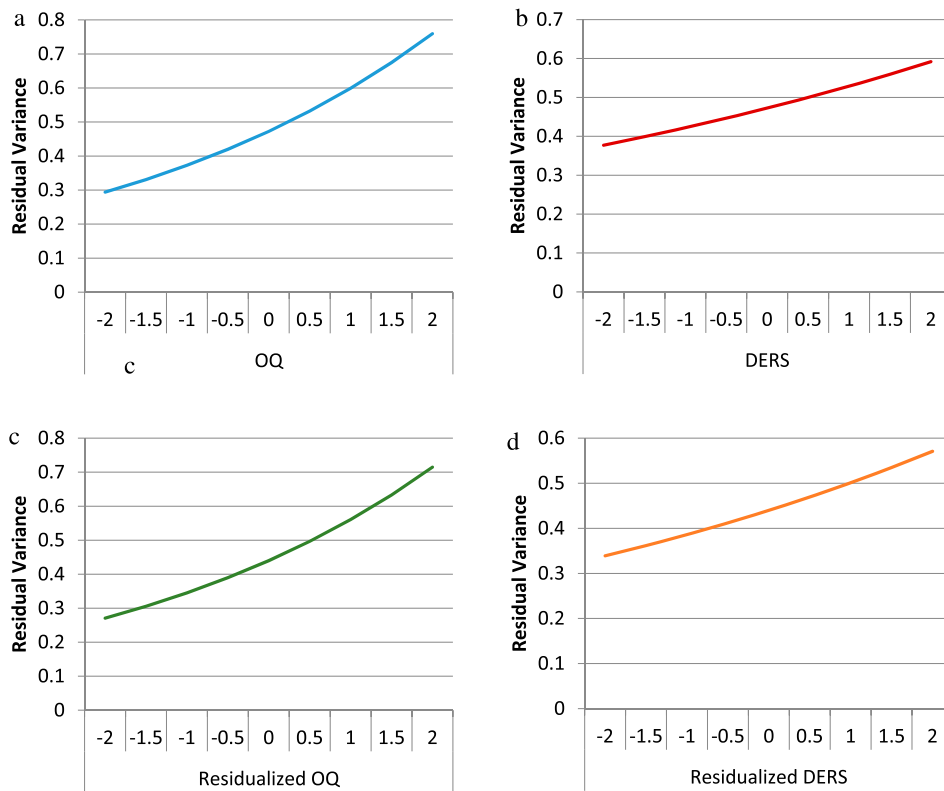
Appendix 2

Figure 1. Model-predicted residual variance for emotional experience (EE-SR) by pre-treatment symptoms (OQ-45) (a), pre-treatment emotion regulation (DERS) (b), residualized post-treatment symptoms (OQ-45) (c), and residualized post-treatment emotion regulation (DERS) (d).