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Lessening of the pervasiveness of interpersonal patterns in borderline personality disorder explains symptom decrease after treatment: A process analysis

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Abstract

Background: Problematic interpersonal patterns, as defined by the core conflictual relationship theme (CCRT) method, are part of the clinical presentation of clients with borderline personality disorder (BPD). So far, we do not know whether the pervasiveness of interpersonal patterns changes and if this change explains therapy outcome.

Methods: In a secondary analysis of a randomized controlled trial on a brief version of psychiatric treatment for BPD, a treatment with a psychodynamic focus, the present study included $N = 39$ clients. One early session and one late session of the treatment were transcribed and analyzed using the CCRT method.

Results: It appeared that pervasiveness of the predominant CCRT decreased over the course of the brief treatment; this effect was robust across treatment conditions. Change in pervasiveness in any CCRT component explained a small

portion of variance of the decrease in borderline symptoms observed at the end of treatment.

Discussion: Lessening of pervasiveness of problematic in-session interpersonal patterns may be hypothesized as potential mechanism of effective treatment for BPD which should be tested in controlled designs.

KEYWORDS

borderline personality disorder, interpersonal patterns, pervasiveness, process, psychotherapy

1 | INTRODUCTION

Borderline personality disorder (BPD) is one of the most debilitating and severe psychological disorders, with a high prevalence in psychiatric populations (Lewis et al., 2019), high use of mental health services (Soeteman et al., 2011) and a burden of disease that affect clients, families and the entire society. From a recent meta-analysis (Storebo et al., 2020), one can conclude that, in general, psychotherapy for BPD is moderately effective: the standardized mean difference on reduction of the specific borderline symptoms for psychotherapy, as compared to treatment as usual for BPD, is 0.52. Despite these important advances in relationship with psychotherapy outcome in treatments for BPD, the actual processes of change, or ultimately mechanisms of change, explaining the effects observed are still elusive (Kazdin, 2009; Kramer, 2019).

1.1 | Interpersonal patterns in borderline personality disorder

Interpersonal patterns may be understood as repetitive schematic relationship templates, which are formed based on typical interactions with attachment figures from the past. As such, they affect the quality of current interactions and relationships in clients with a variety of psychiatric disorders (Luborsky & Crits-Christoph, 1998), which is particularly reflected in BPD where such templates tend to be particularly inflexible and fixed. Gunderson and Lyons-Ruth (2008) assumed that interpersonal hypersensitivity may be a central mechanism of psychopathology of BPD, explaining the oftentimes rapidly changing affective states and symptomatic presentations of these clients. Clients are thought to move through a series of dynamically changing attachment states, ranging from secure, over threatened and isolated to dissociated attachment states. This conception also outlines possible pathways clients may employ to move from one state to the next, and possible therapist interventions helping the client to move back to a securely attached relationship state, by increasing the client's awareness of these dynamics. Each attachment state of the interpersonal hypersensitivity model is assumed to produce specific symptoms in BPD. The increase in client's awareness of these situation-related dynamics and in mentalizing, and the client's decrease in reacting unwillingly to the interpersonal stressor, are thought to contribute to attachment security and prevent further outbreak of symptoms. As such, it is assumed that change in interpersonal patterns, and the observed decrease in their repetitiveness, may be a central process explaining outcome in treatments for BPD.

Interpersonal patterns is a multifaceted construct and encompasses a variety of socio-cognitive and interactional processes. Socio-cognitive difficulties in BPD include difficulties in perspective taking, in developing emotional and cognitive empathy for the other's experience, and specific disturbances in theory of mind, mentalizing and metacognitive abilities (Hoglend & Hagtvet, 2019; Schnell & Herpertz, 2018), though specific functions,

including mind-reading, are preserved in BPD (Fertuck et al., 2009). Hoglend and Hagtvet (2019) showed that both the client's improved insight of their interpersonal patterns, *and* the client's awareness of their emotion seem to be explanatory mechanisms in psychodynamic psychotherapy, in particular in the context of therapeutic work on the transference relationship. The contents of interpersonal patterns may be assessed reliably by the core conflictual relationship theme (CCRT; Luborsky & Crits-Christoph, 1998; Luborsky & Diguer, 1998) case formulation method. A central advantage of focusing on the content of interpersonal patterns is the clinical relevance, because of individualized assessment procedures related with the case formulation. Using this method, it was shown that clients with BPD may present with interactions that highlight an Ego-ideal, a dependent-depressive interaction ("I wish to be dependent, the other is self-conscious and I feel depressed"), a passive-submissive interaction pattern, or sadomasochistic interaction ("I wish to be hurt, the other is not accepting and I feel guilty;" Drapeau & Perry, 2009; Drapeau et al., 2009, 2012). Note the regressive nature of the wishes in this study, which may itself reveal interesting for case formulation purposes, using the CCRT, and may be contrasted with more progressive wishes (e.g., "I wish to be understood"). Interestingly, for a sample with clients presenting with depression, the presence of certain CCRT patterns predicted treatment response in a negative way. Clients with less wish satisfaction in terms of CCRT, that is, more negative relationships between their innermost wishes and the responses from others and from the self, had a suboptimal, and slower, response to evidence-based treatment (Hegarty et al., 2020).

1.2 | Do interpersonal patterns change over the course of treatment for borderline personality disorder?

Assuming a broad definition of interpersonal patterns and associated processes, some evidence points to the conclusion that they may be amenable to change through psychotherapy for clients with BPD (Kramer et al., 2020). From the studies in this review, we can tentatively conclude that change in variables underlying the repetitiveness in interpersonal patterns—toward more cognitive flexibility, less pervasiveness and more effective social interaction—is observable and may explain parts of outcome variance.

There is evidence that the pervasiveness of the individualized CCRT formulation may be affected by psychotherapy. One study has shown for clients with a variety of psychiatric disorders (including 33% of personality disorders) undergoing long-term psychodynamic psychotherapy (Crits-Christoph & Luborsky, 1998) that CCRT pervasiveness is amenable to change between early and late psychotherapy. An omnibus effect was found for lessening of CCRT pervasiveness across all components (wish [W], response from other [RO] and response from self [RS]). These changes were related with levels of symptoms at intake and moderately related with symptom change after treatment (Crits-Christoph & Luborsky, 1998). Change in CCRT pervasiveness was consistently found in different types of long-term psychodynamic psychotherapy (Staats et al., 1998; Wilczek et al., 2004), although it is not always clear whether these changes are related with symptom changes. In study on brief psychodynamically-oriented psychotherapy from the Vanderbuilt II sample; Lunnen et al., 2006) showed overall no change in CCRT pervasiveness indicators across therapy (except for a small effect found for increased pervasiveness for the response of the other component); no link was found with outcome at the end of treatment. It remains unclear if change in pervasiveness may also be observed in clients with BPD undergoing brief treatment and if this change relates to symptom change.

1.3 | Brief treatment for borderline personality disorder: An opportunity and a challenge

A current trend toward offering brief treatment to clients with BPD, within stepped care treatment conceptualizations, is observable (Choi-Kain et al., 2016; Grenyer, 2014). First-line treatment may represent the

substrate of a "good-enough" brief intervention, which is a widely available option for addressing the core problems of BPD (Choi-Kain et al., 2016; Gunderson, 2016), before a client may eventually move—step up—toward a more complex evidence-based psychotherapy. Essentials contained in such brief treatments involve the discussion of the interpersonal hypersensivity model (Gunderson & Lyons-Ruth, 2008; see above), the discussion of the diagnoses and other problems, as well as the building of collaboration, trust and motivation for change. Preliminary evidence suggests that such brief psychiatric treatments, lasting up to 4 months, may have initial benefits for symptom change and the therapeutic alliance for clients with BPD (Kramer et al., 2014).

1.4 | The present study

The present study focuses on the role of the client's in-session problematic interpersonal patterns, and their pervasiveness, over the course of brief psychodynamically informed psychiatric treatment. With this study, we aim to explore whether (1) the pervasiveness of the CCRT decreases between early and late brief psychiatric treatment (i.e., we assume a decrease in pervasiveness of all three CCRT-components W, RO, and RS between sessions 1 and 9 of treatment), (2) change in pervasiveness of the problematic interpersonal patterns (as assessed in session by the CCRT formulation method) explains symptom change at the end of treatment (i.e., we assume a link between decrease in pervasiveness of all three CCRT-components W, RO, and RS, as well as decrease in overall pervasiveness, and symptom change at the end of treatment).

2 | METHODS

The present process-outcome study is a secondary analysis of a two-arm randomized controlled trial which aimed to demonstrate the effect of the add-on motive-oriented therapeutic relationship (MOTR) in addition to a 10-session brief version of a psychodynamically informed General Psychiatric Management (GPM; Kramer et al., 2014; Kramer et al., 2017). This main study has described small to medium between-group effect sizes ($0.06 < d < 0.64$) favoring the added component in the decrease in psychological distress, over 4 months of brief treatment.

2.1 | Sample

A total of $N = 57$ clients were included (see the original study by Kramer et al. [2017]). Inclusion criteria for the present study, in addition for the ones described by the original study, were a sufficient number of tape- or video-recorded sessions of sufficient quality and complete outcome data at two time points. The computation of the CCRT pervasiveness, the central variable in the present study, requires an additional inclusion criteria. The pervasiveness denoting the relative frequency (in %) based on ocurrence of a particular CCRT component within a session, it is meaningful to exclude sessions in which 0 relationship episode were coded (yielding a theoretical default pervasiveness of 0%) and sessions in which 1 relationship episode was coded (yielding a theoretical default pervasiveness of 100%). Given that the present study has an inclusion criteria of two sessions of coded process, we needed to exclude $n = 18$ cases from our sample, thus yielding $n = 39$ cases with two coded process according to the criteria above. While all cases ($N = 57$) were coded for the CCRT (and results will be reported for exploratory purposes for the full sample; see Table 1), in what follows, the specific analyses related with pervasiveness focus on the sub-sample of $n = 39$.

Twenty-eight (72% of $n = 39$) clients were female. The clients had a mean age of 34.7 years ($SD = 9.9$; ranging from 20 to 55). All clients were French-speaking and had a DSM-IV diagnosis of BPD, as diagnosed by the

TABLE 1 Characteristics of the clients as a function of group at baseline ($N = 39$)

	Condition			
	GPM and MOTR ($n = 19$)	GPM ($n = 20$)		
Variables	***n* (%)**	***n* (%)**	**$\chi^2(1)$**	***p***
Gender (Female)	12 (63)	16 (80)	1.37	0.30
Marital status			2.40	0.30
Never married	6 (32)	10 (50)		
Married	8 (42)	4 (20)		
Separated, divorced	5 (26)	6 (30)		
Employment			0.31	0.86
Unemployed	14 (74)	16 (80)		
Part-time	2 (11)	0 (0)		
Full-time	3 (16)	4 (20)		
Medication	13 (68)	15 (75)	0.21	0.65
	M (*SD*)	**M (*SD*)**	***t* (1, 37)**	***p***
Age (years)	36.11 (9.27)	33.40 (10.44)	0.85	0.40
Number of BPD symptoms	7.16 (1.26)	6.65 (1.31)	1.23	0.23
N current axis I disorder	2.11 (1.45)	1.80 (0.83)	0.81	0.42
N current axis II disorder	0.58 (0.77)	0.75 (0.85)	0.66	0.52
GAF	61.37 (7.75)	57.00 (6.96)	1.85	0.07

Note: All diagnostic information in co-morbidity with DSM-IV-TR Borderline Personality Disorder (BPD). GPM: 10-session version of General Psychiatric Management; MOTR: Motive-Oriented Therapeutic Relationship.

Structured Clinical Interview for DSM-IV Axis II Personality Disorders (First et al., 2004). All additional diagnostic information with regard to this sample is summarized in Table 1.

2.2 | Treatments and treatment integrity

The present process-outcome study used data from an add-on trial, the basic treatment was a 10-session short version of GPM (Charbon et al., 2019). Interventions according to the GPM model aim at increasing the client's awareness in the dynamics related to interpersonal hypersensitivity. Thus, psychoeducation is provided which discuss situational material where fluctuation of attachment-states alternative and the therapist provides an integrative explanation of the client's response patterns to the interpersonal stress (Gunderson & Lyons-Ruth, 2008). The add-on component was the use of the individualized case formulation method called the Plan Analysis (Caspar, 2007) and the implementation of the responsive interventions according to the case formulation (the MOTR) during the 10 therapy sessions. Treatment integrity was assessed by applying the two scales validated within each of the therapy models. As reported by Kramer et al. (2014), there was excellent treatment integrity for both the GPM condition (GPM adherence scale: mean = 4.32; $SD = 0.37$) and the MOTR condition (mean = 4.37; $SD = 0.26$), which did not differ between the conditions ($t(1, 38) = 0.58$; $p = 0.57$). Greater adherence to MOTR in the GPM plus MOTR condition (mean = 1.55; $SD = 0.44$), compared to the GPM condition (mean = 0.48; $SD = 0.39$; $t(1, 56) = 10.53$, $p = 0.00+$), was found.

2.3 | Instruments

2.3.1 | Outcome Questionnaire-45.2 (Lambert et al., 1996)

This self-report questionnaire encompasses 45 items and measures the level of distress. The validation coefficients of the original English version are satisfactory, as well as for the French version used in the present study. Cronbach's alpha for this sample was 0.95.

2.3.2 | Inventory of Interpersonal Problems (Horowitz et al., 1987)

This is a self-report measure assessing interpersonal functioning with 64 items. The validation coefficients of the original English version are satisfactory, as well as for the French version used in the present study. Each item was rated on a 5-point Likert scale (from 0 = not at all to 4 = very much). Cronbach's alpha for this sample was 0.91.

2.3.3 | Borderline Symptom List (Bohus et al., 2009)

This self-report questionnaire assesses specific borderline symptomatology using 23 items. It is a short version of the original Borderline Symptom List (BSL)-95 for which excellent psychometric properties; the same was true for the short version (Bohus et al., 2009). The items are assessed using a Likert-type scale ranging from 0 (=absent) to 4 (=clearly present); an overall mean score is computed. Cronbach's alpha for the current sample was $\alpha = 0.95$.

2.3.4 | Core conflictual relationship theme (Luborsky & Crits-Christoph, 1998)

The CCRT method is an observer-rated method to psychodynamic case formulation based on research criteria (Luborsky, 1998a, 1998b), aiming at a process assessment of interpersonal patterns. The method identifies relationship episodes—an episode involving an explicit description of an interaction with others or with the self—in transcripts of psychotherapy sessions. These should be broken down into several components, starting with the identification of the "object" or the "Other" with whom the interpersonal pattern in being played out. The method distinguishes between (a) Wish (W), (b) Respose from Other (RO), and (c) Response from Self (RS). The CCRT judge, after formal training, identifies these components in this order and scores each relationship episode with regard to the three components identified. There may be multiple Ws, ROs and RSs in each relationship episode. Scores are reported in a coding sheet with time-stamp and all three components. According to Luborsky (1998a, 1998b; Appendix, pp. 40–42), each individual component may be associated with a specific cluster (eight possible clusters for each component W, RO, and RS). The latter are the level of analysis we are interested in this study. CCRT pervasiveness is computed for each individual session as overall score, and for each of the three components separately (W, RO, and RS). To do that, we used Crits-Christoph and Luborsky's (1998) recommendation and defined each session's pervasiveness as the relative frequency of the most prevalent cluster found in each CCRT component. For example, if the most frequent cluster (e.g., Cluster 5) is coded in 6 out of 10 instances in specific session for a specific component (and this is per se the most frequent cluster within this component), the CCRT pervasiveness of this specific component in this specific session would be 60%. The change score on CCRT-pervasiveness is computed as the difference score d = Pervasiveness (late session)—Pervasiveness (early session). Reliability and validity have been reported for the method (Barber et al., 1995; Crits-Christoph & Luborsky, 1998; Luborsky & Diguer, 1998).

2.4 | Procedure

Outcome (using the Outcome Questionnaire [OQ-45], Inventory of Interpersonal Problems [IIP], and BSL) was assessed pre- and post-therapy, and residual gain scores were computed for each of the outcome measures. We selected two sessions per case for process analyses: early (session 1) and late (session 9). Session 1 was chosen to have information on the very first contact and session 9 (or penultimate) was chosen to access information from the late process (i.e., we did not choose the last session because it entailed a more structured process). All interviews were video- or audio-recorded. These $N = 114$ therapy sessions (for the $N = 57$ sample, two per case) were transcribed word by word (out of which $n = 39$ ($n = 78$ sessions) were used to analyze pervasiveness due to exclusion criteria). The transcripts were anonymized and given a code, so the inference which session it was, was prevented to a large extent. All raters had at least 3 months of training before study; reliability was checked in the end of the training phase using different material and the results were satisfactory (Intra-Class Correlation Coefficients [ICCs] > 0.75). Raters were unaware of the study hypotheses.

2.5 | Data analytic strategy

For the preliminary analyses, a series of *t*-tests, and independent Paired Sample *t*-tests were conducted. To test hypothesis 1, we conducted a series of Paired Sample *t*-tests for each of the components of the CCRT, comparing early vs late-in treatment, and to test hypothesis 2, we conducted Pearson's correlations between symptom change and change in CCRT pervasiveness over time, as well as a logistic regression on the dichotomous change score of the overall CCRT pervasiveness. For the latter, each individual received a dichotomous score (0 = no change vs. 1 = change in pervasiveness between early and late sessions) for each three CCRT components. To compute change in pervasiveness in *any* CCRT component, we classified individuals with any change (i.e., on any of the three components), as opposed to individuals whose percentage of pervasiveness did not change in all the three CCRT components. This specific score was defined given the short intervention: we wanted to know whether between intake and 4 months of treatment, any change on pervasiveness would be associated with symptom change differently than no change at all.

3 | RESULTS

3.1 | Preliminary results

Table 1 reports the between-group comparisons for a number of sociodemographic variables (gender, marital status, employment, and age) and clinical variables (medication, number of BPD symptoms, number of current axis I disorders and number of current additional personality disorders). All these comparisons demonstrate between-group equivalence for our sample. Since the main analyses were carried out on the sub-sample of $n = 39$, given the inclusion criteria, we compared this sub-sample ($n = 39$) with the full sample ($N = 57$) on all indexes reported in Table 1. All these comparisons demonstrate between-group equivalence. The sub-sample represents sufficiently well the larger sample.

Table 2 reports the within-participant comparisons for the symptom levels (general distress, interpersonal problems and borderline symptoms) which demonstrates the potential effect of the treatment on outcome (although the design does not allow to firmly conclude that these effects are attributable to treatment). All tests revealed to be statistically significant, which speaks in favor of pre-post symptom reduction. To demonstrate between-group equivalence in terms of pre-post symptom reduction, we performed additional paired samle *t*-tests (on each change variable) which yielded no between group-differences (OQ: $t(1, 37) = 1.52$, $p = 0.14$; IIP: $t(1, 37) = 1.85$, $p = 0.07$; BSL: $t(1, 37) = -0.68$, $p = 0.50$).

TABLE 2 Outcome (paired sample *t*-test) for brief treatment of borderline personality disorder ($N = 39$)

Variable	Pretreatment	Posttreatment	*t*(1, 38)	*p*
OQ-45	96.25 (25.74)	77.08 (23.26)	2.51	0.02
IIP	1.81 (0.60)	1.50 (0.64)	4.33	0.00+
BSL	1.86 (1.08)	1.51 (1.02)	2.44	0.02

Abbreviations: BSL, Borderline Symptom List – 23; IIP, Inventory of Interpersonal Problems; OQ-45, Outcome Questionnaire – 45.2.

Inter-rater reliability for the coding of the CCRT was established using ICCs (1, 2) on a randomly selected subsample of 24 sessions (21% reliability sample) using pairwise comparisons between eight different raters. These were established for each CCRT component on the level of the clusters (8 per component); for Wish the average reliability was 0.77 ($SD = 0.10$; ranging between 0.56 and 0.95), for Response from Other the average reliability was 0.79 ($SD = 0.10$; ranging between 0.61 and 0.98) and for Response from Self the average reliability was 0.80 ($SD = 0.09$; ranging between 0.63 and 0.94).

In total, $N = 640$ relationship episodes were analyzed in this sample ($n = 346$ for early sessions and $n = 294$ for late sessions, for the initial sample of $N = 57$ clients). For the early session, we found the following clusters being the most frequent. Clients presented with the wishes to be loved and understood (22%), to be controlled, hurt and not responsible (21%), to assert oneself and to be independent (14%) and to be distant and avoid conflicts (14%). They presented with the response from others in terms of the other being rejecting and opposing (49%), the other being helpful (14%) and the other being upset (11%), and they presented with a response from self in terms of being disappointed and depressed (27%), being helpless (20%) and being respected and accepted (12%). For the late session, we found the following clusters being the most frequent. Clients presented with the wishes to be loved and understood (20%), to be close and accepting (19%) and to achieve and help others (16%); they presented with the response from others in terms of the other being rejecting and opposing (46%), the other being helpful (12%), the other being bad (9%), the other being upset (9%) and the other liking the self (9%), and they presented with a response from self in terms of being disappointed and depressed (32%), being respected and accepted (14%) and being helpless (13%).

3.2 | Lessening of the pervasiveness of the core conflictual relationship themes over time

A paired sample *t*-test revealed that pervasiveness of the CCRT-Wish did not change between sessions 1 and 9. The mean wish pervasiveness at session 1 was 42.07% ($SD = 17.03$), at session 9 41.80% ($SD = 14.72$; t (1, 38) = 0.08; 95% confidence interval [CI]: −6.10 to 6.62; $p = 0.93$).

A paired sample *t*-tests revealed that pervasiveness of the CCRT-Response from Other did not change between sessions 1 and 9. The mean response from other pervasiveness at session 1 was 57.16% ($SD = 24.17$), at session 9 56.85% ($SD = 18.29$; t (1, 38) = 0.08; 95% CI: −7.89 to 8.49; $p = 0.94$).

A paired sample *t*-tests revealed that pervasiveness of the CCRT-Response from Self changed between sessions 1 and 9. The mean response from self pervasiveness at session 1 was 46.93% ($SD = 17.69$), at session 9 40.66% ($SD = 9.80$; t (1, 38) = 1.78; 95% CI: −0.85 to 13.38; $p = 0.048$).

3.3 | Relating change in pervasiveness to symptom change

A series of Pearson correlations revealed no significant links between change scores on any of the CCRT pervasiveness change for each component (Wish, Response from Other, and Response from Self) with any of the

symptom change variables (general distress, interpersonal problems, and borderline symptoms). These correlations ranged between −0.19 and 0.22 (all nonsignificant).

A binary logistic regression using the dichotomous change score of CCRT pervasiveness (all three components together) revealed a different picture. We found that this CCRT pervasiveness dichotomous change score did not predict change in OQ-45 (B = −0.03; ES = 0.02; Wald = 1.32; $p = 0.25$; Rsquare Nagelkerke = 0.05) and did not predict change in IIP (B = −0.77; ES = 0.90; Wald = 0.73; $p = 0.39$; Rsquare Nagelkerke = 0.03), but it did predict change in BSL (B = −0.86, ES = 0.52: Wald = 2.72: $p = 0.047$; Rsquare Nagelkerke = 0.13). Thus, the latter result represents the only significant relationship with outcome, with a small percentage of variance explained.

4 | DISCUSSION

The present process-outcome analysis had as objective to explore whether the pervasiveness of interpersonal patterns, as assessed with the CCRT formulation method, changes over the course of brief treatment for BPD, and whether such changes are related with symptom relief. As such, the present study represents an additional step to investigate whether socio-cognitive processes play a key role in the salutogenesis explaining recovery in personality disorders—as psychodynamic theory would predict.

Our study suggested that the pervasiveness of clinically relevant, and individualized formulation of the contents of client's core conflictuality, using the CCRT, tended to decrease over the course of brief treatment. This was specifically observed on the level of the more fluctuating, and state-dependent, component that is the Response from the Self, while the CCRT components of the Wish and the Response from the Other remained unchanged on average. This observation is consistent with earlier reports on change in CCRT pervasiveness across long-term psychodynamic psychotherapy (Crits-Christoph & Luborsky, 1998; Staats et al., 1998; Wilczek et al., 2004). While our results highlight a significance for the Response from Self, which tends to fluctuate more strongly than the other two components (Crits-Christoph & Luborsky, 1998), they are still remarkable, because (a) the disorder studied is thought to require long-term treatment for core psychopathology to change, and because (b) the treatment studied was a time-limited treatment not longer than 4 months. This result is particularly noteworthy, because our observations are not consistent with a rather small sample of $N = 24$ clients undergoing brief psychodynamic treatment (Lunnen et al., 2006) which did not find any changes in CCRT pervasiveness. Our results may be explained by BPD's core psychopathology: according to Gunderson and Lyons-Ruth (2008), we may expect change in interpersonal patterns related with BPD's core hypersensitivity—in particular the aspects related with the Self explaining possibly an increase in the client's agency for change—, despite the long-standing disorder.

From a qualitative-descriptive viewpoint, it is interesting to note that our sample presented with specific conflictual CCRT components. In the early therapy session, the clients presented mostly with wishes in the cluster related with wanting to be loved and understood (including to be accepted and liked), with responses from others being rejecting and opposing (including disliking, opposing and hurting the Self) and with responses from the Self as feeling disappointed and depressed (including being angry and jealous). Note that this detailed qualitative analysis revealed that in the beginning of treatment, clients displayed both regressive and progressive wishes, while in the end, only progressive wishes were present. This observation toward more progressive wishes may represent as seed for change which may only become visible later in the trajectory of the client's recovery. From a quantitative viewpoint, the most frequent CCRT constellation appeared to only slightly shift over the course of treatment, echoing both the significant change in Response from Self—pervasiveness and the mean stability of the other two CCRT components.

Changes in CCRT pervasiveness are conceived to be central in psychodynamic psychotherapy for BPD. As formulated core of BPD, *interpersonal hypersensitivity*—and the client's capacity to make use of the state-dependent shifts from secure to insecure (and back to secure) interpersonal patterns—may be understood as a central explanatory mechanism of change in treatment, irrespective of the treatment modality. In psychiatric treatments

informed by psychodynamic theory, such as studied in the present report, the client's increased capacity to make productive use of the model of interpersonal hypersensitivity to regulate his/her emotions and to effectively respond to interpersonal stress, is put forward. For this reason and because of the brevity of the treatment, it is important to investigate the links between changes in pervasiveness in *each* CCRT component, as well as a global change in the pervasiveness in *any* CCRT component. Interestingly, when taken separately—component by component—, no relationships with the symptom reduction after 4 months of treatment were found. However, when defining the change in pervasiveness as a change in *any* component of the CCRT, we found a small effect explaining the reduction of borderline symptoms by the decrease in CCRT pervasiveness. This effect was not found for general symptom load and distress, nor for interpersonal problems, making this result particularly specific to an effect possibly related to a BPD specific treatment.

According to Kazdin (2009), a mechanism of change in psychotherapy is empirically confirmed when a series of conditions are present, including theoretical embedding, the association between the mechanism and outcome, consistency across studies, a time-sensitive measurement plan, specificity from other constructs, the dosage being related with the gradient of change, and demonstration in experimental contexts. While change in the pervasiveness of interpersonal patterns is theoretically relevant for the studied disorder and treatment (Gunderson & Lyons-Ruth, 2008) and the present study tentatively suggested association between any change in pervasiveness and change in borderline symptoms, adding up to consistency across studies on socio-cognitive change variables in psychotherapy (e.g., Hoglend & Hagtvet, 2019), the other criteria outlined by Kazdin remain unaddressed. To confirm socio-cognitive change as more convincing mechanism of change in treatments for BPD, research should use time-sensitive measurement plans of the mechanism and the outcome (Hoglend & Hagtvet, 2019; Kramer et al., 2017), differentiate and compare in the same study design socio-cognitive change from other change variables (such as emotional change, to demonstrate conceptual specificity; Hoglend & Hagtvet, 2019), control dosage and carry out a controlled study where this particular mechanism is tested experimentally.

The current study presents with a number of clinical implications. Case formulation using CCRT may be used in psychotherapy training and the effect of such a formulation should be assessed in further studies. Formulating precisely the individual's inner conflictuality may help increase empathy for the client, and help develop specific contents for psychodynamically accurate interpretations (Luborsky, 1998c; Perry et al., 2019). This may also contribute to a productive working-through of the core conflicts as they emerge in the transference relationship with the psychotherapist. We would advise therapists working with client with BPD to focus on the Response from Self component of the CCRT early in therapy, which may be paralleled to the use of specific interventions targeting defense mechanisms, fostering change in clients toward more health-oriented progressive expressions of wishes.

The current study presents with a number of limitations. Given the exploratory nature of the process analysis, the number of observations is limited, although our statistical approach was adjusted to the limited power and conclusions are formulated tentatively. Symptom levels were only assessed by the clients themselves (i.e., self-reported). The observation that a certain number of clients had at least one session (out of two assessed) with less than two relationship episodes, requiring them to be excluded from the computation of the central hypothesis, limits generalizability and also limits the application of the CCRT to all psychiatric treatments for which a central discussion point concerns symptomatic management, at the expense of relationship episodes. By definition, CCRT codings require the information from the relationship episodes which may also be collected in structured research interviews such as the relationship anecdote paradigm, or the adult attachment interview. Pervasiveness was only assessed twice for each individual in the study. This prevented us to conduct a formal analyses of the mechanistic role of change in CCRT-pervasiveness, requiring several time points of assessment over time, to be able to differentiate the effect of the mechanism from the effect of the treatment (Kramer et al., 2017), which was confounded in the present design. Therefore, it cannot be ruled out that the early-in-treatment symptom change drives the change in CCRT-pervasiveness. In addition, we did not assess the therapist impact on the CCRT components which, in particular in treatments with clients with PDs, may be both a possibly relevant antecedents and consequences to the client in-session presentation in terms of activated interpersonal patterns.

Nevertheless, the present study is adding to the literature of understanding the psychological underpinnings of psychotherapy for borderline personality disorder. One particular strength of the present study is the use of a process-based methodology which focused on the in-session contents of problematic interpersonal patterns, as assessed by validated methodology. This study was able to show that the pervasiveness of the specific component of core interpersonal conflictuality related with the response from the Self, as assessed by the CCRT formulation method, lessens, and this change may be related with specific symptom change in brief psychiatric treatment.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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PEER REVIEW

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