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Changes in Mentalization in Patients With Personality Disorders During Sequential Brief—Adlerian Psychodynamic Psychotherapy: The Role of Therapists' Technique and Countertransference

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Mentalization, that is the capacity to understand our and others' behaviors in terms of intentional mental states, represents one of the core features of personality disorders (PDs) and can be related to therapists' countertransference (CT) and interventions. **Aims:** The aim of the present work was to study the relationship between therapists' technique, therapists' CT, and patients' mentalization, in a sample of patients with PDs undergoing a 40-session program of sequential brief-adlerian psychodynamic psychotherapy, a psychodynamic therapeutic model specifically developed for the treatment of PDs in public mental health services. **Method:** Eighty-seven patients with PD and their therapists completed ratings of mentalization (mentalization imbalances scale and reflective functioning questionnaire), CT (therapist response questionnaire), and therapists' intervention (comparative psychotherapy process scale) at five different time points (Sessions 5, 10, 20, 30, and 40). **Results:** Results showed that patients' mentalizing problematics decreased over time. Moreover, we found a reduction of therapists' disengaged CT, and an increase in positive CT over time. Regarding therapists' techniques, psychodynamic-interpersonal interventions were on average higher than cognitive-behavioral, but both techniques were used increasingly over time. Our results also showed significant and clinically coherent interactions between therapist's CT and techniques and between patient's mentalization imbalance and therapist's response. Our results highlighted the importance of early stages in therapy, since the most significant relationships between the various process variables (patient's mentalizing imbalances, therapist's techniques, and emotional responses) are observed between t_1 and t_2 , corresponding to the initial phases of the treatments. Clinical implications will be discussed.

Keywords: personality disorders, mentalization, countertransference, psychodynamic therapy, mental health services

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Mentalizing is the mental process by which an individual implicitly and explicitly interprets the actions of himself and others as meaningful on the basis of intentional mental states such as personal desires, needs, feelings, beliefs, and reasons (Bateman & Fonagy, 2016). It is a species-specific and evolutionarily prewired ability, rooted in

the capacity for joint attention (Tomasello & Vaish, 2013). Mentalization represents a multidimensional capacity, which results from the interaction of four different dimensions (Bateman & Fonagy, 2016): self/other, cognitive/affective, automatic/controlled, and internal/external.

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The self and other dimensions refer to the object of mentalization, while the automatic and controlled dimensions refer to the possibility to automatically (implicitly) mentalize (e.g., when we have a conversation and we regulate turn-taking) or to control mentalization in a more explicit way (as when, in a conversation, we ask the other person “how are you feeling right now?”). Cognitive mentalization refers to the possibility to “think about thinking,” and to recognize the representational nature of thoughts (i.e., the fact that each of our thoughts is only one of the billions of possible constructions of reality), while affective mentalization refers to the possibility to express, recognize, and regulate emotions. Internal and external dimensions refer to the focus of our mentalizing activity which could be related to the inner world (internal mentalization) or the external facets of it (e.g., body posture, prosody, voice tune).

If mentalizing is indeed a species-specific capacity fundamental for humans to navigate the interpersonal world, it can be assumed that most forms of psychopathology could be characterized by impairments in mentalizing (Luyten et al., 2024). Indeed, there is an increasing body of evidence which suggests that most forms of psychopathology, such as personality disorders (PDs), eating disorders, depressive disorders, and psychosis are characterized by impairments in mentalizing (Bateman & Fonagy, 2016; Debbané et al., 2016; Gagliardini, Gullo, et al., 2020; Luyten et al., 2020; Robinson et al., 2019; Taubner et al., 2011) and that mentalizing impairments are a marker of disturbed personality functioning (Antonsen et al., 2016). Moreover, different types of personality disorders could be associated with impairments on specific dimensions of mentalization, which can be expressed in different mentalizing profiles (Gagliardini et al., 2023; Luyten et al., 2020). Considering the four bipolar dimensions above described that constitute mentalization is possible to differentiate the different PDs for imbalances on these specific dimensions (Gagliardini et al., 2023): for example, literature suggested that borderline PD (BPD) patients are characterized by imbalances on the automatic, affective, and external dimensions of mentalization (Gagliardini et al., 2018).

Mentalizing imbalances in relation to the cognitive/affective dimension of mentalization seem to characterize all PD patients, while different dimensions of mentalization have a different impact on specific PDs, for example, the automatic/controlled dimension which seems to characterize Cluster B patients but not Cluster C patients (Gagliardini et al., 2018). It has been hypothesized, for example, that narcissistic PD patients could be characterized by a marked capacity to cognitively mentalize and at the same time to a detachment from some facets of the affective experience (Drozek & Unruh, 2020). At the same time, previous studies have enlightened difficulties of patients with narcissistic PD at mentalizing emotions (i.e., an affective imbalance; Gagliardini et al., 2018), probably related to specific emotions such as shame and anger. Similarly, borderline and histrionic PDs seem to be linked to imbalances in affective mentalization (De Meulemeester et al., 2018; Gagliardini et al., 2018; Semerari et al., 2014) and a lack of certainty about feelings (Beeney et al., 2018) which does not seem to be paired by the capacity to cognitively mentalize. Some authors have also hypothesized that Cluster C patients, that is, patients with dependent, obsessive-compulsive, and avoidant PDs, may share problems related to alexithymia and may be characterized by an imbalance in the cognitive dimension of mentalization.

A specific treatment program has been developed in relation to mentalization, that is, mentalization-based treatment (MBT) for personality disorders (Bateman & Fonagy, 2016). MBT is a 1-year program in

which therapists work by using a curious stance and all the possible supportive-expressive therapeutic interventions. The decision to use specific interventions depends on patients' level of arousal and mentalizing capacities at the time of the intervention, since mentalization capacities can be context-dependent and change dramatically from one time to the other. Therapists must maintain a curious, inquisitive stance, and encourage the exploration of affects and thoughts in patients. Moreover, MBT therapists must help patients at overcoming prementalizing modalities of thought and at developing a more mature, adequate mentalizing stance (Bateman et al., 2023).

MBT therapy has proven to be effective in different studies, especially in relation to PD patients, for whom it has been found that mentalization-oriented therapies are associated with significant symptom reduction (Drozek & Unruh, 2020; Vogt & Norman, 2019). Although MBT represents a therapeutic model specifically developed to enhance mentalization in patients with PDs, the authors who have developed this therapy program have stated different treatment models, while emphasizing different principles, enhancing mentalization even though neither treatment model was designed with this goal in mind: “The potential effectiveness of all treatments depends not so much on their frame but on their ability to increase a patient's capacity to mentalize” (Bateman & Fonagy, 2004; p. 46). Mentalization could be a common factor of therapeutic change masquerading as a specific factor.

Interventions that aim to improve the patient's capacity to mentalize are supposed to contribute to the patient feeling recognized as an independent agent through contingent responding and may increase their ability to reflect on problems from another perspective (the therapist's point of view) and move toward shared intentionality. Different forms of treatment specifically built to address PDs probably share the “potential to recreate an interactional matrix of attachment in which mentalization develops and sometimes flourishes. [...] The crux of the value of psychotherapy with BPD is the experience of another human being having the patient's mind in mind” (Bateman & Fonagy, 2004, p. 47). From this point of view, specific therapist interventions that facilitate mentalization could be probably responsible for part of the effectiveness of all PDs treatment models.

In line with this, some researchers suggested that mentalizing can significantly change also during psychotherapies which are not explicitly focused on it and in relation to different disorders such as Cognitive Behavioral Therapy for anxiety and depressive disorders (Babl et al., 2022), interpersonal psychotherapy for depression disorders (Ekeblad et al., 2023), general psychiatric program for personality disorders (Chiesa et al., 2021), transference-focused therapy (TFP) for borderline personality disorder (Fischer-Kern et al., 2015). Psychotherapy in patients with personality pathology has been hypothesized to be associated with improvements in mentalizing (Chiesa et al., 2021; De Meulemeester et al., 2018). Some results suggest that especially psychodynamic treatments could lead to changes in mentalization also if they are not created especially as MBT to intervene in patients' mentalization. For example, in a study based on a sample of 175 patients with BPD who received long-term hospitalization-based psychodynamic treatment that integrates mentalization-based interventions and principles with more traditional, insight-oriented psychoanalytic work, the authors assessed mentalizing, and symptomatic distress at the admission, 12 and 24 weeks into treatment and at discharge (De Meulemeester et al., 2018). Using a parallel process growth modeling approach, results showed that treatment was associated with significant decreases in mentalizing impairments (uncertainty about mental states),

as assessed with the reflective functioning questionnaire (RFQ), and symptomatic distress and improvements in mentalizing were strongly associated with the rate of decrease in symptomatic distress over time.

Another study, based on a sample of 90 BPD patients, reported findings from a 1-year randomized controlled trial where they compared TFP with dialectical behavior therapy and psychodynamic supportive therapy. Results indicated that all three groups showed significant change in borderline personality disorder symptomatology, but only the TFP group improved significantly in reflective function scored on the adult attachment interview after 1 year (Levy et al., 2006). Similarly, in another randomized controlled trial involving 104 patients with BPD receiving either TFP or treatment by experienced community therapists, only patients in the TFP group showed significant improvements in reflective functioning (RF) assessed using the RF scale (RFS; Fischer-Kern et al., 2015) at the adult attachment interview after 1 year. These findings suggest that increases in mentalizing may indeed in part explain therapeutic change in the treatment of BPD, but more research is needed to further substantiate these conclusions.

An important issue related to the aforementioned studies which enlighten a change in mentalization in therapies which are not explicitly focused on it, is related to which techniques could affect patients' mentalizing capacities. In a study based on the evaluation of mentalization applying RF scale to session transcripts ($N = 128$) of different brief therapies (Cognitive Behavioral Therapy, Interpersonal Psychotherapy, brief psychodynamic) showed that positive features of the psychotherapy process (e.g., "therapist accurately perceives the therapeutic process") were associated with high RF scores while negative aspects ("patients reject therapist's comments and observations") were associated with low RF scores and this was evident across different forms of treatments (Karlsson & Kermott, 2006).

In another study, that assessed RF at the beginning and after 1 year of treatment and evaluated the relationship between therapist adherence (measured with the Psychotherapy Process Q-set) to TFT, Dialectical Behavioral Therapy, and supportive therapy and improvements in patients' RF results suggested that higher adherence to TFP principles during TFP therapy and greater adherence to mentalizing principles during supportive therapy led to greater changes in RF (Kivity et al., 2019). In another study based on a sample of 15 BPD patients (two sessions each $n = 30$), MBT adherence and competence predicted higher in-session RF, even while controlling for pretreatment RF. In addition, therapists' interventions directed toward exploring mental states predicted higher RF in the following patient's responses (Möller et al., 2017).

A different study on psychodynamic psychotherapy with children demonstrated that mentalization can change during session depending on the expression of negative emotions, symbolic play, and affect regulation (Halfon et al., 2019). In other words, it is possible that different therapies, which are not explicitly focused on mentalization, use interventions which enhance mentalization. However, the empirical literature on this topic is quite scarce since studies on the efficacy and effectiveness of treatment modalities often validate the whole therapeutic model, without analyzing the influence of specific interventions on the level of functioning of the patients.

Therapist's Interventions and Therapist's Countertransference

Over the years several authors have focused on the study of common and relational factors from one side and technical and specific factors

related to the process and outcome of psychotherapies (Cuijpers et al., 2019; Norcross & Lambert, 2018). In the investigation of the role of relational factors in psychotherapy, many efforts have been made to study the countertransference (CT) responses of the therapists and their effect on the process and outcome of treatment (Hayes et al., 2018). As suggested by Kernberg (1965), CT has been defined at least in two different ways: classical and totalistic. The classical point of view defined CT as the unconscious reaction of the clinicians, based on their unresolved conflicts, to the patient's transference and conceptualized it as an obstacle to the psychotherapy process. From a totalistic perspective, CT was described as the set of therapist's reactions to the patient (conscious and unconscious, emotional and cognitive, intrapsychic and behavioral), which were considered as inevitable and related in part also to the patient's inner world and interpersonal way of being because CT is seen as a complement or counterpart to the patient's relational style. Sequential brief-adlerian psychodynamic psychotherapy (SB-APP), the treatment model studied in the present work, considers CT as a facet of the whole, collaborative, patient/therapist experience (Rovera, 2015), which regards not only the implicit memory and the reemergence of previous experiences, but also the real relationship between the two participants at the interaction. In the present study, we have adopted a conceptualization, and therefore an operationalization, of CT which is closer to the MBT model: we have focused mostly on the conscious feelings of the therapists, rather than on unconscious processes, and we did not consider these responses on the whole as a consequence of patients' projections. As in MBT, in this work, we posit that mentalization is a relational process and that clinicians' mental states, which could be influenced by their emotional responses, can affect patients' mental states and the psychotherapeutic process as well (Bateman & Fonagy, 2016).

With the advent of intersubjective and relational theories, we saw a change in the conceptualization of the therapeutic relationship and of the mechanisms that underlie the link between technique and relationship (Aron, 2001; Mitchell, 1988). An important consequence of this conceptualization of the psychotherapy process was that therapeutic interventions were not considered uniquely as the product of a technical decision, since they are also affected by the dynamics of the relationship in the here and now, and therefore were considered as indirect ways by which therapists coregulated the relationship with the patient and communicated their feelings during the sessions. Following this, approach therapists' interventions were seen as complex relational events because they communicated something very important about what sort of relatedness is possible between the patient and the therapist (Mitchell, 1988) and were considered as an emerging product of the patient-therapist interaction structures (Jones, 2000). From a relational and bi-personal point of view, investigating technical factors without considering relational ones could lead to misleading or partial results.

Some authors have tried to study conjunctively therapist techniques and therapist emotional responses. These studies investigated the effects of therapist interventions aimed at analyzing the patient-therapist relationship studied within the context of patients' personality pathology and therapists' in-session self-reported feelings (H. J. Dahl et al., 2017; H. S. Dahl et al., 2014). These studies have suggested that disengaged feelings may have a negative influence on the effects of the transference work, especially with low-functioning patients with a history of poor, nonmutual, and complicated relationships (H. J. Dahl et al., 2017). At the same time, therapists' parental feelings were differentially associated with long-term effects of the relationship work, depending on the level of

patients' personality pathology. In the context of low therapists' parental feelings, relationship work had positive effects for all patients. However, when parental feelings were stronger, the specific effects of such interventions were even more positive for patients with high levels of personality pathology, but negative for patients with low levels of personality pathology (H. S. Dahl et al., 2014).

In another study, researchers have evaluated the relationship between the interpersonal context and therapists' intervention style during low and moderate hostile episodes in psychotherapy. Results indicated that during episodes characterized by higher levels of hostility, clinicians tended to use more interpretations and expressive interventions, compared to moments characterized by lower levels of hostility (Anderson et al., 2012). In another study, the authors investigated the mediating role of therapist CT responses in relation to patient level of functioning and therapist supportive expressive intervention level and found that protective feelings were associated with a more supportive stance by therapist despite patient personality level of functioning while a more expressive stance resulted associated with criticized/maltreated feelings in therapists (Colli et al., 2022).

Aims and Hypothesis

The aim of the present work, that was not preregistered, was to study the relationship between therapists' technique, therapists' feelings toward patients, and patients mentalization, in a sample of patients with PDs undergoing a 40-session program of SB-APP, a psychodynamic therapeutic model specifically developed for the treatment of PDs in public mental health services (Ferrero, 2012).

Given that the clinical literature and some empirical research have suggested the transversality across various personality disorders, and in relation to different clusters, of problematics in the cognitive and affective dimensions of mentalization, in this study, we focused on these two dimensions. Regarding the clinician's emotional responses, we focused on the involvement/detachment dimension, as well as the positive responses, since previous studies have indicated the influence of these experiences on the therapist's interventions (H. J. Dahl et al., 2017; H. S. Dahl et al., 2014). We expect to observe an increase in RF, measured with the RFQ, from the beginning to the end of the treatment, and that this will also coincide with a reduction in cognitive and affective imbalances (as assessed with the mentalization imbalances scale [MIS]). Additionally, we hypothesized a circular relationship between patients' mentalization and clinicians' emotional responses. Regarding techniques, we hypothesized that techniques may impact mentalization and, in turn, be influenced by clinicians' emotional responses. Given the exploratory nature of our study and the limited literature, we did not make specific hypotheses regarding the interaction between these variables over time.

Method

Sample

Patients

The initial sample consisted of 265 patients referred to the psychotherapy unit and the Center for Prevention and Treatment of Personality Disorders in Adolescence and Adulthood, Mental Health Department, ASL Turin 4, Piedmont–Italy during the enrollment period, from January 2017 to December 2019. All patients aged ≥ 18 years with a *diagnosis of personality disorders (DSM-5,*

APA Task Force, 2013) were included; patients under the age of 16 and patients with comorbidities with neurodevelopmental disorders, neurocognitive disorders, schizophrenia spectrum and other psychotic disorders, and substance-related and addictive disorders were excluded. The PD diagnosis was made by a psychiatrist, on the basis of *DSM-5* criteria, within three clinical-diagnostic assessment interviews and through the administration of patient-report tools on personal and psychopathological functioning (TCI, BIS-1.1, STAXI-2) and on clinical symptomatology (SCL-90-R, BDI-II, STAI-Y).

Of the 87 patients who met these inclusion and diagnostic criteria, seven did not agree to participate in the research and one subsequently asked to be removed from the research database; the remaining 79 subjects represent the potential sample involved in the study.

Potential patient participants that had at least data in three time points and were selected for the study. The final sample of 77 patients included 20 (25.97%) men and 57 (74.03%) women. Their mean age was 31.61 years ($SD = 11.35$, range 18–59). All the patients had a *DSM-5* (APA Task Force, 2013: 22 BPD, 13 histrionic PD, five narcissistic PD, four obsessive–compulsive PD, one dependent PD, one avoidant PD, two mixed PD, 29 PD-not otherwise specified), and 31 patients (40.26%) had one or more other *DSM-5* diagnoses in comorbidity, most frequently mood disorders ($N = 12$), anxiety disorders ($N = 9$), and eating disorders ($N = 4$).

Therapists

Treatments were delivered by 24 therapists, including 20 (83.3%) women and 4 (16.7%) men. Their mean age was 37.12 years ($SD = 8.30$; range 29–60). The average length of their clinical experience as a psychotherapist was 7.38 years ($SD = 6.18$; range 3–31). Among them, nine therapists (37.5%) were fully trained in SB-APP (80 hr of theoretical and methodological SB-APP training, minimum 80 hr of specific supervision, and a continuous updating training program), while the other 15 therapists (62.5%) were basically trained in it (20 hr of theoretical and methodological SB-APP). All therapists were fortnightly supervised by a SB-APP trainer. According to the needs of the service, patients were assigned, according to the therapists' experience, with severe PD patients and the waiting list. Each therapist treated an average of 3.21 patients, with a minimum of one and a maximum of seven patients per therapist.

Treatment Conditions: SB-APP. All patients were treated with SB-APP, with 40 weekly sessions. SB-APP was initially developed as part of a multidisciplinary health program for PDs (Ferrero, 2012, 2018) and represents a time-limited treatment with 40 weekly sessions. SB-APP has its roots in the more recent psychodynamic developments of the individual adlerian psychology (Eife et al., 2020), which emphasizes the role of the social feeling (Adler, 1912, 1920) and the intersubjective facets of the therapist/patient relationship (Wininger, 2014).

The therapeutic and clinical aims of the SB-APP are not only related to symptom reduction, but also to the specific underlying mechanisms of mental processes (Sauer-Zavala et al., 2023). SB-APP posits that therapeutic interventions are related to patient's personality organization level (Babl et al., 2019; Ferrero et al., 2016; Immel et al., 2022; Stone, 2022). When working with PD patients, for example, psychodynamic expressive interventions such as confrontations or interpretations are used very cautiously. Regarding the use of these psychodynamic techniques, SB-APP

differs from other psychodynamic-oriented PD therapies, such as transference-focused psychotherapy (Levy et al., 2006). There are, however, similarities with different psychodynamic therapies for PD (Gabbard et al., 1994) which emphasize the importance of avoiding interpretations with patients whose level of personality integration is not adequately structured. Patients with problematics in personality integration should benefit more, according to some authors, from a balanced use of empathic validation, clarification, supportive, and empathic interventions (vs. more expressive interventions; Ogrodniczuk & Piper, 1999). SB-APP takes into account the implicit and unconscious defenses which manifest in the CT reactions and, in line with MBT, posits that therapists should first consider their conscious reactions in relation to the patient (Ferrero, 2012, 2018). MBT and SB-APP share different common features, however there are some important differences in relation to the explicit focus on mentalizing process in the therapeutic work, and also on the focus of the therapy, which is more related to early and current attachment relationships in MBT and to the quality of the pathological personality organization and its phenomenological features in SB-APP (Koelen et al., 2012).

There is preliminary evidence of the effectiveness of SB-APP for the treatment of patients with BPD. A randomized clinical trial on 35 patients of the public mental health service of Chiavasso, Turin, Italy, has shown that the group of patients treated with SB-APP had a better outcome, compared to the group of patients undergoing the usual treatments, in relation to hospitalizations, intakes, therapeutic alliance, and dropout. Moreover, SB-APP was more effective than the control group in relation to the following symptoms: identity problematics, dissociative symptoms, paranoia, affective instability, disturbed relationships, and abandonment issues. The follow-up was administered after 6 and 12 months, and showed that the positive effects were maintained, moreover suicidal attempts, feelings of loss, and symptoms severity were reduced (Amianto et al., 2011; Leichsenring et al., 2024; Storebø et al., 2020).

Measures

Comparative psychotherapy process scale (CPPS; Hilsenroth et al., 2005) is a descriptive measure of the psychotherapeutic process that evaluates the therapist's activities and techniques during a psychotherapy session. The scale includes 20 items divided into two subscales: the psychodynamic-interpersonal (PI) scale (10 items), which describes PI techniques and the cognitive-behavioral (CB) scale (10 items), which includes CB interventions. In both subscales, items are rated on a 7-point Likert scale ranging from 0 (*not at all characteristic*) to 2 (*somewhat characteristic*), 4 (*characteristic*), and 6 (*extremely characteristic*). The global score for each subscale consists of the mean score of all items included in the subscale. The CPPS can be completed by a therapist, patient, or external observer. In the present study, we used the therapist version of the scale. The reliability and clinical validity of the CPPS have been largely demonstrated. CPPS studies have highlighted excellent interrater reliability and internal consistency and have also generated significant results across different contexts and samples (Hilsenroth, 2007; Hilsenroth et al., 2001, 2006). The Italian version of the CPPS has been validated in previous studies and has shown good psychometric properties (Colli et al., 2016; Gentile et al., 2020). For the study purposes, CPPS was modeled in the cross-lagged models as a unique score calculated as linear combination of PI score minus CB score;

in this shape, CPPS scores ranged from -7 to 7 , with positive values indicating the prevalence of PI interventions and negative values of CB interventions.

MIS (Gagliardini et al., 2018): The MIS is a clinician report for the assessment of imbalances in mentalization in adult patients. It is composed of 22 items rated on a Likert scale from 0 (*absolutely not descriptive*) to 5 (*absolutely descriptive*) and represents an assessment measure of mentalizing imbalances on the basis of six subscales related to self, others, affective, cognitive, automatic, and external imbalances. In the present study, we focused on the affective and cognitive imbalances subscales: affective imbalance (four items), indicates a hyperactivation of affects and emotions not adequately balanced by cognition. This leads the person to experience emotions as uncontrollable, and often the person lacks words to describe their feeling. On the contrary, the cognitive imbalance subscale (five items) indicates an excessive focus on the cognitive facets of mentalization, which can lead to intellectualizing, and that is not balanced by the affective facets of experience. The MIS has been used in previous studies (Carrera et al., 2018; Gagliardini et al., 2023, Gagliardini, Gatti, & Colli, 2020, Gagliardini, Gullo, et al., 2020) in which it has shown a good reliability. In relation to the validity of the MIS scale, two studies (Gagliardini et al., 2018, 2023) have previously investigated the factor structure of the scale and suggested that it can be considered adequate. Moreover, the MIS scales predicted the presence of a PD diagnosis (Gagliardini et al., 2018); and mentalization impairment profiles obtained by the combination of the six MIS subscales were significantly and coherently associated with PD pathology in a sample of 400 patients with PDs (Gagliardini et al., 2023) and with eating disorders in a different study (Gagliardini, Gullo, et al., 2020). Moreover, in the same study, clinicians' ratings of mentalization, with the MIS, were significantly related to patients' self-report measures of RFQ, emotional dysregulation (DERS), interpersonal problems (IIP 47), and empathy (BES). The MIS, as well as all the clinician-report measures adopted in the present study, was rated at the end of the considered psychotherapy session. In the present study, we focused on the cognitive and affective subscales of the MIS, since previous studies have indicated that the PDs considered in the present study were characterized mostly by problematics in those areas (compared to different mentalizing dimensions; Gagliardini et al., 2018).

RFQ (Fonagy et al., 2015). The RFQ is an eight-item self-report measure of mentalizing abilities in relation to the degree of certainty and uncertainty about mental states, with items regarding the measure to which individuals utilize mental state information to understand their own and others' behavior. The RFQ is composed of two subscales: (a) the uncertainty about mental states subscale (RFQ-u) captures poor use of mental state information and a stance characterized by a lack of knowledge about mental states and (b) the certainty about mental states subscale (RFQ-c) captures better use of mental state information and adaptive levels of certainty about mental states. In this study, we used only the uncertainty scale and used the scoring procedure suggested by Müller et al. (2022).

Therapist response questionnaire (TRQ; Betan et al., 2005; Tanzilli et al. 2016; Zittel Conklin & Westen, 2003) The TRQ is a clinician-report measure designed to provide a psychometrically valid instrument for assessing CT patterns in psychotherapy. TRQ's 79 items measure a wide range of thoughts, feelings, and behaviors expressed by therapists toward their patients that range from relatively specific feelings (e.g., "I feel bored in sessions

with him/her”) to complex constructs, such as “projective identification” (e.g., “More than with most patients, I feel like I’ve been pulled into things that I didn’t realize until after the session was over”). Those statements are written in everyday language, without jargon, so that clinicians of all theoretical orientations can use the instrument without bias. The clinicians assess each item on a 5-point Likert scale, ranging from 1 (*not true*) and 5 (*very true*). The factor structure of the TRQ comprises eight CT dimensions: (a) overwhelmed/disorganized (nine items) indicates a desire to avoid or flee the patient and strong negative feelings, including dread, repulsion, and resentment; (b) helpless/inadequate (nine items) describes feelings of inadequacy, incompetence, hopelessness, and anxiety; (c) positive (eight items) indicates the experience of a positive working alliance and close connection with the patient; (d) special/overinvolved (five items) describes a sense of the patient as special relative to other patients, and includes “soft signs” of problems in maintaining boundaries, including self-disclosure, ending sessions on time, and feeling guilty, responsible, or overly concerned about the patient; (e) sexualized (five items) describes sexual feelings toward the patient or experiences of sexual tension; (f) disengaged (four items) describes feeling distracted, withdrawn, annoyed, or bored in sessions; (g) parental/protective (six items) is marked by a wish to protect and nurture the patient in a parental way, above and beyond normal positive feelings toward the patient; and (h) criticized/mistreated (18 items) describes feelings of being unappreciated, dismissed, or devalued and feelings of hostility toward the patient. The scales’ scores are obtained by calculating the average score of the items that make up each CT factor.

Statistical Analysis

Preliminary analyses were conducted to test the possible presence of significant longitudinal trends in relation to mentalizing domains, therapists’ techniques, and CT. Longitudinal data have been inspected by using analysis of variance for repeated measures, testing change over time (throughout linear, quadratic, cubic, and fourth order shape), and effect of the interaction of Therapist \times Time. Subsequently, the main analysis was conducted by a cross-lagged panel model (CLPM), currently more and more used in the psychotherapy process research to longitudinally estimate the temporal links between variables, in other terms, to establish causal relationship between variables at different times. Recently, Falkenström et al. (2022) have strongly recommended using fully dynamic structural equation modeling models such as the random intercept cross-lagged panel model. The random intercept cross-lagged panel model allows us to standardize the cross-lag regression coefficients and to compare their relative strength to determine which is the variable with the strongest causal influence (Bentler & Speckart, 1981).

The present study aims at testing the relationships between patients’ mentalization (as assessed by therapists), therapists’ techniques, and therapists’ CT. These relationships are modeled on five time points which analyze the relationships between the variables, respectively, at the fifth, 10th, 20th, 30th, and 40th session. The model has been initially tested by temporally securing the between-variables relationship, thus assuming that the relationships would stay the same over the five time points. Afterward, these constraints were eliminated. By comparing the different fits of the two models (constrained vs. free), we found the best model.

In addition to autoregressive paths, and between-variables relationships assessed in the different time-points, in the panel, we

modeled the covariance relationships between the tree variables in each of the five considered time-points. The results of the analyzed models will be described and commented in relation to the significance levels in the five different time points considered in this study (Sessions 5, 10, 20, 30, and 40).

Cross-lagged analyses allow for the simultaneous exploration of cross-lagged effects, specifically, the level of CT that therapist demonstrates in relation patient’s mentalization through techniques the same therapist used as well as any reciprocal relations among these variables over time. By using a cross-lagged modeling technique, the pattern of effects is conceptually replicated at each time point. The current study used cross-lagged analysis to attempt to identify causal predominance, which occurs when one variable influences other variables without the additional reciprocal influence (Burkholder & Harlow, 2003). Consistent with Hoyle and Panter’s (1995) recommendations, we considered multiple indexes to evaluate model fit. We considered the ratio of the χ^2 value to the degrees of freedom in the model (absolute fit), with ratios in the range of 2:1 suggesting better fitting models (see Carmines & McIver, 1981). We also considered the comparative-fit index (CFI; Bentler, 1990; incremental fit) and goodness-of-fit index (Tanaka & Huba, 1985), are measures of how well the model fits the data, with values .90 or over indicating better fitting models (see Hoyle & Panter, 1995); the root-mean-square error of approximation (RMSEA; Steiger, 1990; parsimony-adjusted fit), with values of .08 or less indicating adequate fit (Browne & Cudeck, 1992); and the Akaike’s information criterion (Akaike, 1974) and the Bayesian information criterion (Schwarz, 1978).

For each of the hypothesized model, we compared two submodels testing whether the cross-lagged effects were time-invariant. In the models “cons” the six cross-lagged paths were constrained to be equal across time (i.e., fixed), whereas in models “uncons” the cross-lagged paths were released and free to vary. Model comparison was based on three criteria of changes in fit indices: $\Delta\chi^2$ significant at $p < .05$, $\Delta CFI \geq .010$, and $\Delta RMSEA \geq .015$ (Chen, 2007; Cheung & Rensvold, 2002). If the constrained model does not differ from the unconstrained model based on these criteria, the constrained model is preferred as a more parsimonious model. Analyses were conducted with the “lavaan” package in the statistical software “R,” Version 3.6.3. Analyses use a $p < .05$ significance level. Data and materials are available upon request to the corresponding author.

Results

Preliminary analyses were conducted to explore change over time for the variables included in the study. Linear, quadratic, cubic, and fourth-order shapes were inspected, revealing that the linear trend was the best descriptor for longitudinal change of the variables (data not shown, see in the online supplemental materials). Table 1 summarizes the descriptive, effect of linear change, and interaction between time and therapist. The two MIS imbalance scores showed a significant linear decrease from Time 1 to Time 5, indicating a reduction of difficulties of mentalization over time throughout therapy. This result was consistent with the self-assessment of patients who reported a significant pre–post reduction in the uncertainty scale of the reflective function questionnaire (RFQ, Fonagy et al., 2015). At the same time, the positive scale of TRQ, and psychodynamic and cognitive scales of CPPS increased in a significant way, while the disengaged scale of TRQ showed a pretty stable trend. Finally, the interaction Term Time \times Therapist

Table 1
Descriptive and ANOVA for Repeated Measures of All the Study Variables

Measures	ANOVA repeated measures					Time 5 M (SD)	Time 4 M (SD)	Time 3 M (SD)	Time 2 M (SD)	Time 1 M (SD)	Sum squares	gl	Quadr mean	F	Significance	η^2
	Time (linear)	Time × Therapist	Time (linear)	Time × Therapist	Time (linear)											
CPPS_PI	4.25 (1.07)	4.22 (0.97)	4.17 (0.86)	3.96 (0.80)	3.72 (0.96)	5.520	4	5.509	10.430	.003	.215					
CPPS_CB	3.43 (1.02)	3.12 (1.28)	3.07 (1.17)	2.18 (1.08)	2.05 (1.26)	24.426	72	.339	1.284	.138	.536					
MIS_cog	2.22 (1.12)	2.31 (1.04)	2.45 (1.04)	2.63 (1.11)	2.59 (1.30)	13.981	4	3.495	14.945	.000	.300					
MIS_aff	2.23 (0.98)	2.50 (1.03)	2.77 (1.14)	2.86 (1.13)	2.87 (1.07)	44.770	72	.622	1.294	.131	.538					
TRQ_dis	1.09 (0.20)	1.07 (0.15)	1.10 (0.19)	1.05 (0.13)	1.15 (0.20)	6.234	4	1.558	5.381	.001	.197					
TRQ_pos	2.66 (0.72)	2.60 (0.67)	2.55 (0.62)	2.55 (0.61)	2.46 (0.57)	37.670	76	.496	1.711	.008	.596					
RFQ_uncert	3.46 (0.79)	—	—	—	3.71 (0.77)	10.107	4	2.527	6.793	.000	.236					
						28.841	76	.379	1.020	.462	.468					
						.076	4	.019	1.094	.365	.047					
						2.143	76	.028	1.634	.013	.585					
						2.977	4	.744	6.075	.000	.216					
						11.127	76	.146	1.195	.209	.508					
						$t_{(41)} = 2.380$	$p = .022$	95% CI = [-0.059, 0.721]								
						Pre-post test										

Note. MIS_cog = mentalization imbalances scale, cognitive imbalance; MIS_aff = mentalization imbalances scale, affective imbalance; CPPS_PI = comparative psychotherapy process scale, psychodynamic interpersonal interventions; CPPS_CB = comparative psychotherapy process scale, cognitive-behavioral interventions; TRQ_pos = therapist response questionnaire, positive CT; TRQ_dis = therapist response questionnaire, disengaged CT; CT = countertransference; RFQ = reflective functioning questionnaire; ANOVA = analysis of variance; CI = confidence interval.

showed a significant effect for the disengaged scale of TRQ, whereas it appears not to have a significant impact on the other variables.

Cross-Lagged Analyses

To examine the longitudinal relationships between MIS, CPPS, and TRQ, we tested two autoregressive cross-lagged models composed of Times 1–5: time-invariant, or constrained (cons), model was initially assumed by constraining to be equal autoregressive and cross-lagged paths, whereas residual (co)variances were estimated freely. Subsequently, time variant, or unconstrained (uncons), model was implemented by relaxing the stationarity assumption and freely estimating the autoregressive and cross-lagged parameters.

Cognitive Imbalance, Psychodynamic and Cognitive Technique, and Disengaged CT

In the first time-invariant models (#1A_cons), we tested cross-lagged effects between MIS cognitive imbalance, CPPS PI interventions, and TRQ disengaged scales. Fit indices are reported in Table 2. The model showed poor-to-acceptable fit. Comparing Model #1_cons with the time-variant #1A_uncons model, in which the stationarity assumption was relaxed, and autoregressive and cross-lagged parameters were free to vary, resulted in the difference that satisfied all the three criteria of changes in fit indices. Therefore, having demonstrated its superiority Model #1A_uncons was therefore retained. In a similar way, Model #1B_uncons was preferred to the constrained model since the differences between them satisfied all three criteria in favor of the former (Table 3).

Table 4 and Figure 1 display significant and nonsignificant paths for both #1A and #1B models. Regarding the model that considered therapist’s PI technique (#1A), first-order autoregressive paths were significant for therapist’s disengaged response (β_{zz}) from time t_1 to t_2 and t_4 to t_5 , for therapist’s technique (β_{yy}) from time t_3 to t_4 and t_4 to t_5 , and for MIS cognitive (β_{xx}) from time t_4 to t_5 . Time 1 psychodynamic intervention significantly predicted decreases in time t_2 therapist’s disengagement ($\gamma_{yz} = -.37$); and in a reciprocal way, time t_1 higher disengagement predicted decrease in time t_2 psychodynamic interventions ($\gamma_{zy} = -.33$). Model #1B 3, with therapist’s CB technique, showed significant autoregressive paths for MIS cognitive (β_{xx}) from t_4 to t_5 , for CPPS cognitive technique (β_{yy}) from t_1 to t_2 , t_3 to t_4 , and t_4 to t_5 , and for TRQ disengaged response (β_{zz}) from t_1 to t_2 and t_3 to t_4 . Two significant cross-lagged paths were found in the model, higher cognitive imbalance at time t_3 predicted decrease in disengagement at t_4 ($\gamma_{xz} = -.57$), and higher use of cognitive interventions in t_1 predicted decrease in disengagement at t_2 ($\gamma_{yz} = -.69$).

Cognitive Imbalance, Psychodynamic and Cognitive Technique, and Positive CT

In the second time-invariant model (#2A_cons), we tested cross-lagged effects between MIS cognitive imbalance, CPPS PI, and TRQ positive scales. Fit indices are reported in Table 2. The model showed poor-to-acceptable fit. Compared with the #2A_cons, the time-variant #2A_uncons model showed differences that meet all the three criteria of changes in fit indices, thus was

Table 2

Model Fit From Different Cross-Lagged Models for MIS (Cognitive: Models #1A and #2A and Affective: Models #3A and #4A), Therapist's Psychodynamic Intervention (Models A), and Therapist's CT (Disengaged: Models #1A and #3A and Positive: Models #2A and #4A)

Model	CFI	GFI	RMSEA	AIC	BIC	χ^2 (df)	<i>p</i>
#1A_cons	.925	.986	.081	1,121	1,255	112.23 (76)	.004
#1A_uncons	.989	.989	.039	1,117	1,313	54.44 (49)	.275
Δ #1A cons-uncons	-.064	-.003	.042	4	-58	57.79 (27)	.001
#2A_cons	.974	.974	.053	1,788	1,922	91.16 (76)	.113
#2A_uncons	.998	.976	.008	1,800	1,996	49.25 (49)	.463
Δ #2A cons-uncons	-.024	-.002	.045	-12	-74	41.91 (27)	.033
#3A_cons	.914	.988	.091	1,058	1,192	121.66 (76)	.001
#3A_uncons	.992	.947	.020	1,583	2,004	46.42 (49)	.058
Δ #3A cons-uncons	-0.78	.041	.071	-525	-812	75.24 (27)	.001
#4A_cons	.976	.973	.052	1,709	1,844	90.85 (76)	.118
#4A_uncons	.992	.968	.036	1,948	2,150	53.87 (49)	.285
Δ #4A cons-uncons	-.016	.005	.016	-239	-306	36.98 (27)	.094

Note. MIS = mentalization imbalances scale; CT = countertransference; CFI = comparative-fit index; GFI = goodness-of-fit index; RMSEA = root-mean-square error of approximation; AIC = Akaike's information criterion; BIC = Bayesian information criterion.

preferred to illustrate the associations among variables. Similarly, unconstrained Model #2B showed a better fit on all the three indices and was retained for subsequent analyses.

Table 5 and Figure 1 display significant and nonsignificant paths for both #2A and #2B models. Model #2A presented data for psychodynamic technique. Results showed that first-order autoregressive paths were significant for MIS cognitive from t_4 to t_5 , for CPPS psychodynamic intervention from t_2 to t_5 and for TRQ positive CT from t_1 to t_2 and from t_3 to t_5 . Cross-lagged results showed that significant paths were found from t_3 to t_4 . Time t_3 higher psychodynamic intervention predicted decreases in t_4 positive TRQ responses ($\gamma_{xz} = -.61$); and t_3 higher CPPS PI intervention predicted decreases in t_4 positive therapist's response ($\gamma_{yz} = -.87$) and in t_4 cognitive imbalance ($\gamma_{yx} = -.69$). Model #2B in Table 5 presented data for cognitive technique. First-order autoregressive paths were significant for MIS cognitive from t_4 to t_5 , for CPPS cognitive intervention from t_1 to t_2 and from t_3 to t_5 , and for TRQ positive CT from t_3 to t_5 .

Cross-lagged paths showed that higher cognitive imbalance in Time t_1 predicted increases in t_2 disengaged therapist's response ($\gamma_{xz} = .21$), while later in therapy, higher cognitive imbalance in t_3

predicted decreases in t_4 disengagement ($\gamma_{xz} = -.51$). Finally, higher cognitive interventions in time t_1 predicted decreases in t_2 disengaged therapist's response ($\gamma_{yz} = -.56$), and higher positive responses at t_4 predicted increases in cognitive interventions at t_5 ($\gamma_{zy} = .42$).

Affective Imbalance, Psychodynamic and Cognitive Technique, and Disengaged CT

The third time-invariant model (#3A_cons) tested cross-lagged effects between MIS affective imbalance, CPPS PI, and TRQ disengaged scales. Fit indices are reported in Table 2. The model showed an acceptable fit. Comparing Model #3A_cons with the time-variant #3A_uncons model, showed differences that satisfied all the three criteria of change fit. Thus, the time-variant model was preferred to illustrate the associations among variables. Similarly, unconstrained model #3B showed a better fit on all the three indices and was retained for subsequent analyses.

Table 6 and Figure 1 show significant and nonsignificant paths for models #3A and #3B concerning psychodynamic and cognitive technique, respectively. Model #3A showed that all autoregressive

Table 3

Model Fit From Different Cross-Lagged Models for MIS (Cognitive: Models #1B and #2B and Affective: Models #3B and #4B), Therapist's Cognitive Intervention (Models B), and Therapist's CT (Disengaged: Models #1B and #3B and Positive: Models #2B and #4B)

Model	CFI	GFI	RMSEA	AIC	BIC	χ^2 (df)	<i>p</i>
#1B_cons	.947	.986	.070	1,263	1,397	102.44 (76)	.024
#1B_uncons	.999	.991	.002	1,258	1,454	44.44 (49)	.665
Δ #1B cons-uncons	-.052	-.005	.068	5	-57	58 (27)	.001
#2B_cons	.941	.950	.081	1,933	2,067	112.16 (76)	.004
#2B_uncons	.998	.976	.008	1,800	1,996	49.25 (49)	.463
Δ #2B cons-uncons	-.057	-.026	.073	133	71	62.99 (27)	.001
#3B_cons	.942	.988	.076	1,197	1,331	107.69 (76)	.010
#3B_uncons	.981	.986	.055	1,203	1,398	59.42 (49)	.145
Δ #3B cons-uncons	-.037	.002	.021	-6	-67	48.27 (27)	.007
#4B_cons	.965	.961	.065	1,853	1,988	99.85 (76)	.039
#4B_uncons	.988	.961	.047	1,865	2,061	56.12 (49)	.205
Δ #4B cons-uncons	-.023	.000	.018	-12	-73	43.73 (27)	.022

Note. MIS = mentalization imbalances scale; CT = countertransference; CFI = comparative-fit index; GFI = goodness-of-fit index; RMSEA = root-mean-square error of approximation; AIC = Akaike's information criterion; BIC = Bayesian information criterion.

Table 4

Standardized Parameter Estimates From Retained Cross-Lagged for Model #1A: MIS Cognitive (X), Therapist's Psychodynamic Technique (Y), and Therapist's Disengaged CT (Z); #1B: MIS Cognitive (X), Therapist's Cognitive Technique (Y), and Therapist's Disengaged CT (Z)

Model	β_{xx}	β_{yy}	β_{zz}	γ_{xy}	γ_{xz}	γ_{yx}	γ_{yz}	γ_{zx}	γ_{zy}
#1A_uncons									
$t_1 \rightarrow t_2$	.31	.36	.51**	-.03	.22	-.16	-.33*	.20	-.37*
$t_2 \rightarrow t_3$	-.20	.26	.65	-.25	.01	.44	-.01	.17	-.34
$t_3 \rightarrow t_4$	-.29	.66**	.47	-.02	-.44	.39	-.42	-.10	-.21
$t_4 \rightarrow t_5$	.55*	.69**	.59**	-.04	-.22	.06	-.04	-.03	.05
#1B_uncons									
$t_1 \rightarrow t_2$	.26	.89**	.33*	.03	.21	.56	-.69**	.25	-.05
$t_2 \rightarrow t_3$	-.26	.33	.23	.36	.05	.28	-.05	.27	-.50
$t_3 \rightarrow t_4$	.21	.92**	.47*	-.01	-.57*	.35	.07	-.23	-.19
$t_4 \rightarrow t_5$	.63**	.94**	.41	-.24	-.40	-.06	.14	-.08	.33

Note. β_{xx} = autoregressive path MIS cognitive at t_{i-1} and t_i ; β_{yy} = autoregressive path CPPS PI at t_{i-1} and t_i (#2A); β_{yy} = autoregressive path CPPS CB at t_{i-1} and t_i (#2B); β_{zz} = autoregressive path TRQ disengaged at t_{i-1} and t_i ; γ_{xy} = cross-lagged effect MIS cognitive at t_{i-1} on CPPS PI at t_i (#2A); γ_{xy} = cross-lagged effect MIS cognitive at t_{i-1} on CPPS PI at t_i (#2B); γ_{xz} = cross-lagged effect MIS cognitive at t_{i-1} on TRQ disengaged at t_i ; γ_{yx} = cross-lagged effect of CPPS PI at t_{i-1} on MIS cognitive at t_i (#2A); γ_{yx} = cross-lagged effect of CPPS CB at t_{i-1} on MIS cognitive at t_i (#2B); γ_{yz} = cross-lagged effect of CPPS PI at t_{i-1} on TRQ disengaged at t_i (#2A); γ_{yz} = cross-lagged effect of CPPS CB at t_{i-1} on TRQ disengaged at t_i (#2B); γ_{zx} = cross-lagged effect of TRQ disengaged at t_{i-1} on MIS cogn at t_i ; γ_{zy} = cross-lagged effect of TRQ disengaged at t_{i-1} on CPPS PI at t_i (#2A); γ_{zy} = cross-lagged effect of TRQ disengaged at t_{i-1} on CPPS CB at t_i (#2B); MIS = mentalization imbalances scale; CT = countertransference; CPPS PI = comparative psychotherapy process scale, psychodynamic interpersonal interventions; CPPS CB = comparative psychotherapy process scale, cognitive-behavioral interventions; TRQ = therapist response questionnaire.
* $p < .05$. ** $p < .01$.

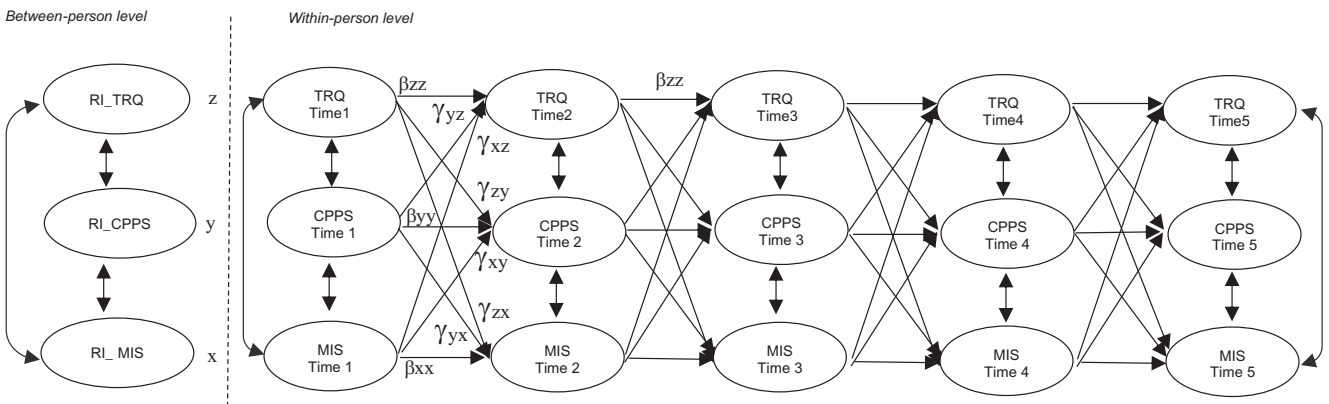
paths were significant for T's technique and MIS affective imbalance from t_1 to t_5 , whereas for T's disengaged response autoregressive paths from t_2 to t_5 were significant, but from t_1 to t_2 were not. Cross-lagged paths showed that level of affective imbalance influenced therapist's technique and response. Specifically, higher MIS affective imbalance in t_1 predicted increases in subsequent t_2 TRQ disengaged response ($\gamma_{xz} = .30$), whereas higher MIS affective imbalance in t_4 predicted increases of psychodynamic interventions in t_5 ($\gamma_{xy} = .46$). Autoregressive paths in model #3B were significant for MIS affective imbalance and T's cognitive technique from time t_1 to t_5 , whereas autoregressive paths for TRQ response resulted significant from t_2 to t_5 . Significant cross-lagged paths were found between time t_1 to t_3 . Specifically, higher affective imbalance and use of cognitive intervention at time t_1 predicted lower positive responses in t_2 ($\gamma_{xz} = -.71$, and $\gamma_{yz} = -.61$, respectively), and in turn lower positive responses in t_2 predicted less use of cognitive intervention in t_3 ($\gamma_{zy} = -.29$).

Affective Imbalance, Psychodynamic and Cognitive Technique, and Positive CT

The last time-invariant model (#4A_cons) tested cross-lagged effects between MIS affective imbalance, CPPS, and TRQ positive scales. Although, the model had good fit indices; comparison with the time-variant #4A_uncons model showed the latter had a better fit. The differences between the two models met two out of three criteria of change fit. However, considering that $\Delta\chi^2$ showed a trend toward significance ($<.010$) and the other two indices showed a better fit for unconstrained solution, the #4A_uncons model was preferred to illustrate the associations among variables (Table 2). Comparison between the _cons and the _uncons Model #4B revealed that the latter had better fit on all the three considered indices, thus it was preferred for further analyses (Table 3).

Table 7 and Figure 1 show significant and nonsignificant paths for Models #4A and #4B concerning psychodynamic and cognitive

Figure 1
Model #1_uncons Significant and Nonsignificant Paths



Note. MIS = mentalization imbalances scale; TRQ = therapist response questionnaire; CPPS = comparative psychotherapy process scale.

Table 5

Standardized Parameter Estimates From Retained Cross-Lagged for Model #2A: MIS Cognitive (X), Therapist's Psychodynamic Technique (Y), and Therapist's Positive CT (Z) and Model #2B: MIS Cognitive (X), Therapist's Cognitive Technique (Y), and Therapist's Positive CT (Z)

Model	β_{xx}	β_{yy}	β_{zz}	γ_{xy}	γ_{xz}	γ_{yx}	γ_{yz}	γ_{zx}	γ_{zy}
#2A_uncons									
$t_1 \rightarrow t_2$	.33	.15	.60**	-.07	.06	.04	-.13	.39	-.68*
$t_2 \rightarrow t_3$	.21	.62**	.38	-.26	.29	-.39	-.33	.11	-.03
$t_3 \rightarrow t_4$	-.64	.65*	.62*	-.09	-.61*	-.69*	-.87*	.27	-.15
$t_4 \rightarrow t_5$	.54**	.72**	.82**	-.12	.06	.02	.08	-.17	-.03
#2B_uncons									
$t_1 \rightarrow t_2$	.24	.87**	.42	.02	.21*	.49	-.56**	.30	-.08
$t_2 \rightarrow t_3$	-.41	.40	.68	.36	.00	.31	.10	.33	-.47
$t_3 \rightarrow t_4$	.04	.96**	.58*	.00	-.51*	.47	.09	-.06	.08
$t_4 \rightarrow t_5$	.63**	-.90**	.50**	-.21	-.31	-.06	.15	-.04	.42*

Note. β_{xx} = autoregressive path MIS cognitive at t_{i-1} and t_i ; β_{yy} = autoregressive path CPPS PI at t_{i-1} and t_i (#2A); β_{yy} = autoregressive path CPPS CB at t_{i-1} and t_i (#2B); β_{zz} = autoregressive path TRQ positive at t_{i-1} and t_i ; γ_{xy} = cross-lagged effect MIS cognitive at t_{i-1} on CPPS PI at t_i (#2A); γ_{xy} = cross-lagged effect MIS cognitive at t_{i-1} on TRQ positive at t_i ; γ_{yx} = cross-lagged effect of CPPS PI at t_{i-1} on MIS cognitive at t_i (#2A); γ_{yx} = cross-lagged effect of CPPS CB at t_{i-1} on MIS cognitive at t_i (#2B); γ_{yz} = cross-lagged effect of CPPS PI at t_{i-1} on TRQ positive at t_i (#2A); γ_{yz} = cross-lagged effect of CPPS CB at t_{i-1} on TRQ positive at t_i (#2B); γ_{zx} = cross-lagged effect of TRQ positive at t_{i-1} on Mis cogn at t_i ; γ_{zy} = cross-lagged effect of TRQ positive at t_{i-1} on CPPS PI at t_i (#2B); MIS = mentalization imbalances scale; CT = countertransference; CPPS PI = comparative psychotherapy process scale, psychodynamic interpersonal interventions; CPPS CB = comparative psychotherapy process scale, cognitive-behavioral interventions; TRQ = therapist response questionnaire. * $p < .05$. ** $p < .01$.

technique, respectively. Autoregressive paths in Model #4A were significant for MIS affective imbalance and T's psychodynamic technique from time t_2 to t_5 . Autoregressive paths for T's positive response were not significant. Cross-lagged results demonstrated that affective imbalances in t_2 increased T's psychodynamic interventions in t_3 ($\gamma_{xy} = .30$); and affective imbalances in t_3 decreased T's positive responses in t_4 ($\gamma_{xz} = -.51$). Regarding cognitive technique, the model #4B showed that all autoregressive paths were significant for T's technique and MIS affective imbalance from t_1 to t_5 , whereas only from t_4 to t_5 autoregressive path was significant for T's disengaged response. The model also showed significant interaction between MIS and TRQ, in particular, higher affective imbalance in t_2 and in t_3 predicted decrease disengagement in t_3 and t_4 , respectively ($\gamma_{xz} = -.73$; $\gamma_{zx} = -.78$).

Discussion

The aim of the present study was to test the relationship between patients' mentalization, therapists' techniques, and therapists' CT in SB-APP. The results of the present study show a significant improvement in patients' mentalizing capacities during the SB-APP. In the current study, we have focused on the affective and cognitive imbalances in mentalization, which can be differently impaired in PDs (Gagliardini et al., 2018), and found that mean scores of cognitive and affective mentalizing imbalances decreased from Time 1 to Time 5, indicating a decrease in difficulties of mentalization over time throughout therapy. This was coherent with the self-assessment of patients who reported a significant pre-post reduction in the uncertainty scale of the RFQ (Fonagy et al., 2015). This result can

Table 6

Standardized Parameter Estimates From Retained Cross-Lagged for Model #3A: MIS Affective (X), Therapist's Psychodynamic Technique (Y), and Therapist's Disengaged CT (Z) and Model #3B: MIS Affective (X), Therapist's Cognitive Technique (Y), and Therapist's Disengaged CT (Z)

Model	β_{xx}	β_{yy}	β_{zz}	γ_{xy}	γ_{xz}	γ_{yx}	γ_{yz}	γ_{zx}	γ_{zy}
#3A_uncons									
$t_1 \rightarrow t_2$	.65*	.73*	.34	.24	.30*	.28	-.51	.06	-.07
$t_2 \rightarrow t_3$	.62*	.68**	.86**	.33	-.51	.32	.43	.10	-.18
$t_3 \rightarrow t_4$	.82**	.87**	.51**	-.01	-.05	.15	.09	.01	-.04
$t_4 \rightarrow t_5$	.73**	.82**	.62**	.46*	-.02	.26	.04	.10	.04
#3B_uncons									
$t_1 \rightarrow t_2$	.70**	.87**	.28	-.01	-.71*	.18	-.61*	.11	-.06
$t_2 \rightarrow t_3$	.65**	.71**	.83**	.25	-.23	.26	.27	.15	-.29*
$t_3 \rightarrow t_4$	.84**	.92**	.45*	.04	.16	.12	-.08	.20	.04
$t_4 \rightarrow t_5$	.76**	.71**	.60**	.11	.08	.18	.01	.14	-.02

Note. β_{xx} = autoregressive path MIS affective at t_{i-1} and t_i ; β_{yy} = autoregressive path CPPS PI at t_{i-1} and t_i (#2A); β_{yy} = autoregressive path CPPS CB at t_{i-1} and t_i (#2B); β_{zz} = autoregressive path TRQ disengaged at t_{i-1} and t_i ; γ_{xy} = cross-lagged effect MIS affective at t_{i-1} on CPPS PI at t_i (#2A); γ_{xy} = cross-lagged effect MIS affective at t_{i-1} on TRQ disengaged at t_i ; γ_{yx} = cross-lagged effect of CPPS PI at t_{i-1} on MIS affective at t_i (#2A); γ_{yx} = cross-lagged effect of CPPS CB at t_{i-1} on MIS affective at t_i (#2B); γ_{yz} = cross-lagged effect of CPPS PI at t_{i-1} on TRQ disengaged at t_i (#2A); γ_{yz} = cross-lagged effect of CPPS CB at t_{i-1} on TRQ disengaged at t_i (#2B); γ_{zx} = cross-lagged effect of TRQ disengaged at t_{i-1} on mis cognitive at t_i ; γ_{zy} = cross-lagged effect of TRQ disengaged at t_{i-1} on CPPS PI at t_i (#2A); γ_{zy} = cross-lagged effect of TRQ disengaged at t_{i-1} on CPPS CB at t_i (#2B); MIS = mentalization imbalances scale; CT = countertransference; CPPS PI = comparative psychotherapy process scale, psychodynamic interpersonal interventions; CPPS CB = comparative psychotherapy process scale, cognitive-behavioral interventions; TRQ = therapist response questionnaire. * $p < .05$. ** $p < .01$.

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Table 7

Standardized Parameter Estimates From Retained Cross-Lagged for Model #4A: MIS Affective (X), Therapist's Psychodynamic Technique (Y), and Therapist's Positive CT (Z) and Model #4B: MIS Affective (X), Therapist's Cognitive Technique (Y), and Therapist's Positive CT (Z)

Model	β_{xx}	β_{yy}	β_{zz}	γ_{xy}	γ_{xz}	γ_{yx}	γ_{yz}	γ_{zx}	γ_{zy}
#4A_uncons									
$t_1 \rightarrow t_2$	.56	.66	.16	.33	-.23	.37	-.46	-.04	-.01
$t_2 \rightarrow t_3$	.67**	.74**	-.04	.30*	-.28	.32	.40	.00	.05
$t_3 \rightarrow t_4$	.99**	.97**	.03	-.05	-.51*	.06	.38	.09	-.08
$t_4 \rightarrow t_5$	.62**	.96**	.40	.04	-.20	.32	-.22	-.06	.02
#4B_uncons									
$t_1 \rightarrow t_2$	.54*	.92**	.18	-.02	.26	.49	.30	-.11	.11
$t_2 \rightarrow t_3$	.66*	.90**	.13	.08	-.73*	.28	.30	.03	.03
$t_3 \rightarrow t_4$	.87**	.98**	.24	.04	-.78**	.03	.29	.10	-.04
$t_4 \rightarrow t_5$	.55*	.92**	.53*	.02	.03	.53	.28	-.14	.06

Note. β_{xx} = autoregressive coefficient for MIS; β_{yy} = autoregressive coefficient for therapist's technique; β_{zz} = autoregressive coefficient for therapist's CT; γ_{xy} = reciprocal coefficients; β_{xx} = autoregressive path MIS affective at t_{i-1} and t_i ; β_{yy} = autoregressive path CPPS PI at t_{i-1} and t_i (#2A); β_{yy} = autoregressive path CPPS CB at t_{i-1} and t_i (#2B); β_{zz} = autoregressive path TRQ positive at t_{i-1} and t_i ; γ_{xy} = cross-lagged effect MIS affective at t_{i-1} on CPPS PI at t_i (#2A); γ_{xy} = cross-lagged effect MIS affective at t_{i-1} on CPPS PI at t_i (#2B); γ_{xz} = cross-lagged effect MIS affective at t_{i-1} on TRQ positive at t_i ; γ_{yx} = cross-lagged effect of CPPS PI at t_{i-1} on MIS affective at t_i (#2A); γ_{yx} = cross-lagged effect of CPPS CB at t_{i-1} on MIS affective at t_i (#2B); γ_{yz} = cross-lagged effect of CPPS PI at t_{i-1} on TRQ positive at t_i (#2A); γ_{yz} = cross-lagged effect of CPPS CB at t_{i-1} on TRQ positive at t_i (#2B); γ_{zx} = cross-lagged effect of TRQ positive at t_{i-1} on Mis cognitive at t_i ; γ_{zy} = cross-lagged effect of TRQ positive at t_{i-1} on CPPS PI at t_i (#2A); γ_{zy} = cross-lagged effect of TRQ positive at t_{i-1} on CPPS CB at t_i (#2B); MIS = mentalization imbalances scale; CT = countertransference; CPPS PI = comparative psychotherapy process scale, psychodynamic interpersonal interventions; CPPS CB = comparative psychotherapy process scale, cognitive-behavioral interventions; TRQ = therapist response questionnaire.

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

be considered a partial first proof that changes in imbalances of mentalization, in this case specifically cognitive and affective ones, are associated with changes in RF in PD patients. In the future, it will be interesting to see if this data will be confirmed also in relation to other imbalances and in different samples.

This result is also in line with previous studies suggesting that mentalization can improve when it is not the explicit focus of treatment (Allemand & Flückiger, 2017) especially in psychodynamic therapy (De Meulemeester et al., 2018) and further calls for the need to identify which common translational processes are implied in the treatment of PDs (Chapman & Dixon-Gordon, 2015). We must consider that this result could also be due to the fact that, as we have seen, SB-APP therapy shares some characteristics with MBT in the treatment of patients with PD, such as a supportive attitude, a focus on the affective dimension, and prioritizing validation before proceeding to exploration. On the other hand, in the present study, we did not assess either the adherence or the competence of clinicians to the specific therapy model under investigation (SB-APP). This limitation should also be considered in light of the fact that the majority of our therapist sample had not received a complete training in SB-APP. In other words, we do not know to what extent the therapists in our study adhered to the reference model, but we cannot even exclude also the possibility that therapists have adopted interventions close to the technical principles of MBT. We must however add that all therapists were fortnightly supervised by a SB-APP trainer, and this could partially mitigate these concerns.

Our results also enlightened a reduction of therapists' disengaged CT, that can be considered a negative CT reaction and an increase in positive CT. It is likely that the change over time in the clinician's experiences may be an indicator of an improved relational climate within the session, derived also probably from the increased RF of the patients, especially in the treatment of PD's patients.

Regarding therapists' techniques, in our study, there was on average a prevalence of PI interventions, but also CB techniques were present: this result is in line with previous researches that highlighted

how clinicians tend to interact with patients, even in controlled situations, providing also interventions that are not specified in their therapy manual (Ablon et al., 2006). Moreover, PI and CB techniques were used increasingly over time, and both resulted significantly linked to the mentalizing imbalance perceived in the patient, and to the emotional response of the therapist (see cross-lagged effect). Further insights could be provided from the observation of the interaction between therapists' techniques, CT, and patients' mentalization.

A result that emerges across our analysis model involves the observation that the most significant relationships between the various process variables (patient's mentalizing imbalances, therapist's techniques, and emotional responses) are observed between t_1 and t_2 , corresponding to the initial phases of the treatments (Sessions 5 and 10). This result could be explained by considering the importance of the early stages in therapy that can be more challenging for both the patient and the therapist.

The greater influence of relational aspects on technique, especially in the early phases, may indicate how clinicians are more likely to experience heightened emotional intensity in these stages (perhaps influenced by the patient's mental states, especially in the relationship with patients with PD), which soon affects their mode of intervention.

It should be noted that while there is a gap of five sessions between t_1 and t_2 , the interval between the subsequent assessments (t_2, t_3, t_4) is longer (10 sessions). This might suggest that the interaction effect between these variables is evident within a shorter time frame. In relation to the cognitive imbalance, results showed that therapists' who experienced high disengaged CT at Time 1 showed less psychodynamic interventions significantly subsequently in Time 2; vice versa, a greater use of both psychodynamic and cognitive interventions at time1 entails a reduction of therapist's disengagement at Time 2 (Tables 4 and 5)

We could hypothesize that feeling detached leads the therapists, regardless of their intervention style, to withdraw from the therapeutic

process, resulting in less involvement and less interventions. It must be noted that, when high cognitive imbalance persists at Time 3, therapists seem to react (perhaps reflecting the patient's cold style?) with less emotional engagement (Time 4). The link between CT and technique was also confirmed in other models tested (see also Models #2A, #2B, and #3B), and it occurred more frequently in the first half of therapy (between Time 1 and Time 3).

Contrary to what was expected, there were only few significant paths between the technique used and changes in mentalization: an increase of PI intervention tends to predict an decrease in the cognitive imbalance, whereas higher affective imbalance resulted associated with subsequently increased use of PI interventions.

The lack of other significant paths between patient's mentalization imbalance and therapist's technique can be due to several reasons. In this study, we considered scores from both cognitive and psychodynamic subscales. However, these scales are composed of interventions that can potentially have very different effects on mentalization. For example, the PI scale of the CPPS includes interventions where the therapist explores the patient's emotions as well as more interpretative interventions. In future research, it would be beneficial to investigate the effects of specific interventions on mentalization. Another possible explanation, related to the previous point, is that the impact of therapist interventions on patient mentalization may be better observed at a microanalytic level, in the exchange between the patient and therapist, rather than considering a broad time frame as in the current study.

Given that the SB-APP tailors its interventions to patient level of personality organization, it can be hypothesized that the observed changes in mentalization imbalances are due not primarily to technical aspects but to the fact that patients may have felt recognized as intentional subjects. In this regard, particular attention is given, in both SB-APP and MBT, to the unconscious fear of these patients that their fragile identity may collapse and the condition of "chronic epistemic mistrust" that makes them resistant to receiving new information for processing (Fonagy et al., 2015).

However, although this study assumes a conservative choice of not using this benchmark, it should be emphasized that some of these values (see γ_{xy} and γ_{yx} in Table 4) are high enough ($>.12$) to be considered by some authors to have a high effect size (Orth et al., 2022).

Regarding the relationship between clinician's emotional responses and mentalization, it is interesting to note that longitudinally, the connection between these two variables does not appear to be as circular as one might expect.

Imbalances in mentalization seem to be associated over time with negative clinician's emotional responses: for example, when faced with forms of DERS resulting from imbalances in affective mentalization, therapists seem to experience over time a sense of discomfort in relation to the therapeutic relationship (negative CT) or to distance themselves from such experiences, perhaps in order to counterbalance the patients' emotional excess (disengaged CT). These results seem to confirm the hypothesis that mentalization failures can lead to different emotional responses in clinicians (Bateman et al., 2023).

Contrary to our expectations, the clinician's emotional responses do not seem to influence the patient's mentalization over time. If we consider therapists' CT as an indirect indicator of therapist's mentalization (Barreto & Matos, 2018), perhaps its influence on the patient's mentalization is more immediate and evident at session level than across phases of treatment, occurring within individual sessions rather than having a slow-release effect over time. In other words, we do not believe that our results confute the idea

that patient and therapist mentalization mutually influence each other, but rather that the timing of this influence may differ depending on the direction of the influence.

Altogether, our results indicate the importance of considering mentalization in therapeutic process and outcome research, the importance of evaluating specific facets of mentalization in order to tailor the intervention on the patients, and the importance of using specific and differentiated techniques in relation to patients' functioning. Moreover, results confirm the importance of therapists' CT for the therapeutic process.

Conclusion

In conclusion, this study is the first to investigate longitudinal changes in patients' mentalization at different time-points during psychodynamic psychotherapy, more specifically SB-APP, in a public health service. Practicing psychotherapy research in public health services represents an important challenge and is crucial for determining the effectiveness of clinical practice in an ecological setting, thus increasing the clinical usefulness of empirical research.

In the current work, there are some limitations that must be addressed.

First, the present sample is composed by patients diagnosed with PDs, therefore our results cannot be generalized to different clinical populations. Moreover, a part of our sample (40.5%) had also a clinical diagnosis in comorbidity and we cannot exclude the possible influence of this data on our results. In our sample, therapists had different training levels and we cannot exclude the possible influence of the clinical experience on the use of specific therapeutic techniques. Future studies could address this limitation by increasing the sample size and performing analyses specifically in relation to senior versus junior clinicians. However, we must add that all therapists were fortnightly supervised by a SB-APP trainer, and this could partially mitigate these concerns.

Another element that limits the interpretability of the data consists in the nested nature of our data. It is possible that data from patients with the same therapist are more similar to each other than from patients with different therapists. Preliminary analyses indicated the presence of nonsignificant Therapist \times Time Effects, but we cannot exclude that there could be an effect of therapist in the model. It must also be noted that this is a convenience sample, and no control group is provided: both these limitations have implications for the generalizability of our results.

In the present study, clinicians were the main source of analyzed data so we cannot exclude the possibility of circularity in our data and the influence on results of rater bias and that part of the variance of our findings could be shared with other process measures evaluated from the same perspective. Several research suggested that clinicians tend to make highly reliable evaluations if their observations and inferences are quantified using psychometrically sophisticated instruments (Blagov et al., 2012). The assessment of the therapeutic process, and of patients' mentalization, from a therapist's perspective has many advantages, including the possibility to mentalization by observing how their patients interact with them and it should be noted that in the present study, changes in mentalization, assessed by the clinician using the MIS align with the patients' assessments of reflective function through the RFQ. Notwithstanding these considerations, we cannot exclude the possibility of circularity in our data and that during evaluations clinicians unconsciously tried to give a

sort of coherence to their evaluations. Finally, in this present study, we focused on various aspects of the therapeutic process but did not report data regarding treatment outcomes. In future studies, we will assess the potential impact of mentalization and therapist interventions on treatment outcomes.

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