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The complexity of therapeutic action in DBT: preliminary studies on process and outcome

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Abstract

Dialectical Behavior Therapy (DBT; Linehan, 1993, 2014) is a structured, complex and comprehensive cognitive-behavioral treatment program for patients with Borderline Personality Disorder (BPD) and severe dysfunctional behaviors (repeated suicidal attempts, self-harm behaviors, relational instability, other impulsive behaviors). Up to now, DBT proved its effectiveness in several studies: suicide attempts and dysfunctional behaviors decreased, while emotional regulation and general functioning improved.

The present research aimed at assessing the effectiveness of DBT and its mechanisms of action, evaluating both outcome and process dimensions.

The first part of the thesis is dedicated to the presentation of the DBT model, examining its theoretical foundations, the agreements underlying the treatment, the modalities of therapeutic program, and the strategies of intervention.

The second part of the thesis is an evaluation of the effectiveness of DBT, examining the course over time of the target variables. The study is longitudinal, single-blind, with a two-arm parallel design, conducted following the international guidelines for the outcome studies on intention-to-treat samples. DBT was compared with another treatment program comparable by patient type, objectives, and complexity of interventions. The sample was comprised by 95 outpatients, assigned to groups with the minimisation procedure and assessed every three months. Since the individual variability was expected to be consistent, Hierarchical Linear Models with random effects were used. Results showed that suicidality, self-harm, emotional and behavioral dysregulation decreased in both groups after one year; unconditional growth models indicated that subjects differed in the elevation and in the rate of change. Moreover, results on the completers' subsample suggested that the group setting and the intensity of treatment could represent specific therapeutic mechanisms.

The third part of the thesis is composed by process studies with a single-case design, in the strand of the process-outcome research: the empirical evaluation of two therapeutic couples, one with a favorable outcome and one with a partial outcome, was conducted. The patients were two young women with a diagnosis of Borderline Personality Disorder, different for personality profile and dysfunctional behaviors at the beginning of treatment; they followed a DBT standard program with the same therapist, a male experienced clinician. Sessions over the first year of treatment were examined ($N_1 = 38$; $N_2 = 37$). The technical and the relational dimensions

of the therapeutic process were assessed and examined through a macroanalytic and microanalytic perspective. Results showed that some aspects are present in both couples: namely, the adherence to the treatment model and the attitude of the therapist oriented towards collaboration. On the other hand, specificities relating to each therapeutic couple emerged. In the treatment of the patient with positive outcomes, there was a globally positive relational climate; furthermore, therapist and patient can deal even with episodes of misunderstanding. Instead, in the treatment of the patient with partial outcomes, therapist and patient struggled to find an attunement and to work in synergy, remaining trapped in problematic relational patterns and without fully achieving the therapeutic objectives previously agreed.

Taken together, results confirmed the effectiveness and the complexity of DBT. More specifically, they shed light on overlaps and differences between DBT and other theoretical models, in particular interventions promoting reflective functioning. Furthermore, the importance of a collaborative relationship between therapist and patient was confirmed. Overall, results suggested that mechanisms of action in DBT can be understood only in light of the dynamics of the therapeutic process in which they occur.

Keywords: Borderline Personality Disorder; Dialectical Behavior Therapy; Psychotherapy research; Effectiveness research; Psychotherapy process

Preface

The aim of the present work is to evaluate the effectiveness of Dialectical Behavior Therapy (DBT; Linehan, 1993, 2014), a structured, complex and comprehensive cognitive-behavioral treatment program which is strictly defined in terms of targets, aims, phases, and strategies. DBT was developed for patients with Borderline Personality Disorder and severe dysfunctional behaviors (repeated suicidal attempts, self-harm behaviors, relational instability, other impulsive behaviors). Even if DBT proved its effectiveness up to now in several studies, its mechanisms of action are still unclear. Thus, the aims of the present work are to demonstrate on one side the complexity of DBT, and on the other side the specificity of therapeutic action along with the specificity of each patient.

The first section of the thesis will focus on the illustration of the theoretical foundations of DBT, on the therapeutic targets that characterize it, on the modalities of intervention and on the strategies. The aim is to offer a sufficiently informative framework in order to give orienting for the following sections, ensuring a broad and adequately complete overview. It is not intended a comprehensive deal of the subject; rather, the focus will be on what is relevant to the aims of the study.

The second section of the thesis will examine the efficacy of DBT in a group of patients monitored over one year, evaluating the changes found in the target variables. This study was conducted in compliance with the international guidelines for outcome research. DBT has been compared with another therapeutic program, with different theoretical foundations, but which aims to intervene on the same patients, with the same clinical targets and similar therapeutic modalities: the objective is to exclude factors – such as the complexity of the interventions or the structuring of the program – that may interfere with the possibility of detecting specific effects on the outcome indices. Stated the hypothesis that individual variability is an extremely important factor in the outcome of a treatment, the analyzes will be conducted with statistical models that allow to measure the effect of individual components on change.

The third section of the thesis aims to investigate what happens in individual DBT sessions, examining both the technical aspects and the interventions, as well as the relational dimension. The individual sessions of two patients will be examined, two young women diagnosed with Borderline Personality Disorder, different for personality profile, problematic

behaviors and therapeutic outcome. In fact, although followed by the same therapist – an experienced clinician, whose team has received a formal DBT certification –, the two patients will have different outcomes: one will be positive, the other partial. The difference in outcome will allow to investigate the relationships between the process and the outcome, while the differences in personality between the two patients will help in detecting specific relational patterns for each of the two therapeutic copies. The objective of the third section is to demonstrate the complexity of DBT, its technical richness and the variability of the therapeutic pathways that can take shape within it. Furthermore, we aim to demonstrate how the technical and relational dimensions, examined in different aspects, are themselves complex, multifaceted, partly overlapping and partly distant. Finally, since different instruments will be used to assess the therapeutic process, it is intended to evaluate how these instruments reveal similar dimensions or, rather, different nuances of constructs that are only partly superimposable.

The starting point is a feeling of clinical and therapeutic responsibility, in the face of patients who, although encouraged by DBT itself to maintain a critical and collaborative attitude with their therapists, rely on them, hoping to overcome a painful, limiting and distressing condition of life. Does DBT, which has so far given ample and solid evidence of efficacy, also work on Italian patients? On what aspects? Does it work better or worse than another comparable treatment for targets, organization of clinical work, theoretical complexity and methods of intervention?

Other questions could follow. For example, on which patients, on the other hand, can DBT be ineffective? Or again, how does it work? Why is it useful for some people, while for others not? The studies will answer only in part to these last questions, offering suggestions for subsequent works, since these are issues that require a certain level of processing before being translated into further experimental protocols.

PART ONE

Overview of Dialectical Behavior Therapy

Architects have to dream.

We have to search for our Atlantises,

to be explorers, adventurers,

and yet to build responsibly and well.

Renzo Piano

Interview at *The Guardian* by Jonathan Glancey

29th March 2002

1.1. Dialectical Behavior Therapy

Dialectical Behavior Therapy (DBT; Linehan, 1993, 2014) is a structured, comprehensive and manualized cognitive-behavioral treatment program for patients with Borderline Personality Disorder. It was originally developed for women with high suicide risk and then adapted for patient with Borderline Personality Disorder, self-harm behaviors and repeated suicide attempts (Linehan, Armstrong, Suarez, Allmon, & Heard, 1991).

Up to now, modifications of the original protocol allow to apply DBT also to other clinical conditions, such as substance abuse and dependence (Dimeff & Linehan, 2008), eating disorders (Safer, Telch, & Chen, 2009), suicide and self-harm behaviors in adolescents (Rathus & Miller, 2002, 2014).

DBT proved its effectiveness reducing suicide attempts and dysfunctional behaviors, and improving emotional regulation and general functioning (e.g., Linehan et al., 2015; McMain et al., 2009, 2012; Wilks et al., 2016). DBT also reduced a negative self-referential attitude, even compared with treatments provided by experienced clinicians (Bedics, Atkins, Comtois & Linehan, 2012a, 2012b; Bedics, Atkins, Harned & Linehan, 2015).

1.1.1. *Fundamentals*

DBT specificity is grounded in its fundamentals: in other words, DBT is principle-driven (Linehan, 1993, 2014). Theoretical fundamentals are behavioral science, dialectic, and mindfulness practice (Linehan & Wilks, 2015).

Regarding DBT as a behavioral science, the term "behavior" refers to the person's activities, functions or reactions, that is, everything that an organism does and performs in terms of action and reaction to stimuli (Linehan, 1993). There are three types of behavior: motor (manifest and implicit behaviors of the musculoskeletal system), cognitive-verbal (thinking, problem-solving, perception, fantasy, imagination, language) and physiological (activity of autonomic nervous system). Emotions, central to DBT, are responses that involve and integrate the three types of behavior (Selby & Joiner, 2009). Thus, learning theories are equally applicable to all them regarding their function, rather than the content (Hayes, 2004).

Dialectics in DBT can be understood as a way of seeing reality, or as a method of persuasion (in this sense it is part of stylistic strategies). His basic assumption implies the presence of a thesis, an antithesis that is opposed to it, and a synthesis that integrates and surpasses them, placing itself in turn as a new thesis (Linehan, 1993). Dialectic has to deal with a continual resolution or synthesis of opposite positions: the reality is view as systemic since it arises from complex causal connections, heterogeneous and oppositional phenomena, and it is continuously changing (Lynch, Chapman, Rosenthal, Kuo & Linehan, 2006).

Maintaining a dialectical attitude means understanding that it is not possible to consider individual aspects of reality without looking at a holistic perspective in which the parts relate to each other: in other words, it is about recognizing the two polarities, distancing oneself from them and considering the truth relative of both – none of the two positions, paradoxically, is true in the absolute sense (Lynch, Chapman, Rosenthal & Linehan, 2006). The subjective perception of the constant existence of opposite characteristics or polarities in things is our way of simplifying the representation of reality, but this, by its nature, is much more complex and integrated. Moreover, dialectics makes it possible to grasp that all experiences are caused and transitory, therefore intrinsically changeable: the process of change is inherent in existence.

Likewise, dialectics understood as a strategy refers to the maintenance of a position of balance between the acceptance of the present and the push for change in view of identified objectives.

Finally, along with the *third wave* of cognitive therapies (Hayes, 2004), DBT emphasizes mindfulness and Zen practice, such as focusing on the current moment, seeing reality as it is and accepting it without judgement. Mindfulness is a complex construct, whose definition is not unambiguous. The definition Ruth A. Baer and colleagues (2006) can be considered sufficiently comprehensive: a multi-faceted construct, which includes paying attention to current experiences, translating them into words, acting with awareness, maintaining an attitude towards each sensation, external or internal to us; acceptance, benevolence and curiosity.

1.1.2. *The conceptualization of Borderline Personality Disorder within DBT framework*

Borderline Personality Disorder (BPD), as defined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association [APA], 2013), is a pervasive mode of instability of interpersonal relationships, of the image of self, of affections, and of marked impulsiveness that begins in early adulthood and manifests itself in a variety of contexts. In DSM-5 alternative model (APA, 2013), Borderline Personality Disorder is defined by a maladaptive "pattern of perceiving, relating to, and thinking about the environment and oneself" (p. 763), characterized by moderate-to-severe impairments in personality, interpersonal, and general functioning (e.g., Powers & Oltmanns, 2013; Zimmerman, Chelminski, Young, Dalrymple, & Martinez, 2012).

European and US epidemiological studies show that this disorder has a high prevalence, about 1-2% in the general population and about 10-20% in the clinical population of psychiatric outpatients, usually more common in women (about 70% of Borderline Personality Disorder patients; Leichsenring, Leibing, Kruse, New, & Leweke, 2011; Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004; Torgensen, Kringlen, & Cramer, 2001). These patients show an important impairment at psychopathological and psychosocial level. More than 75% of Borderline Personality Disorder patients engage in nonsuicidal self-injurious behaviors (NSSI; Oldham, 2006; Zanarini, Frankenburg, Hennen, Reich, & Silk, 2006). Moreover, a large amount of patients with Borderline Personality Disorder makes at least a suicide attempt lifetime, with a rate of 70-80% (Homan, Sim, Fargo, & Twohig, 2017); the rate of completed suicide is between 8% and 10% (Black, Blum, Pfohl, & Hale, 2004), a percentage fifty times greater than the general population (Torgensen et al., 2001). Because of the high degree of impairment resulting from this condition, Borderline Personality Disorder is associated with high health care utilization (Bender et al., 2001; Dubovsky & Kiefer, 2014).

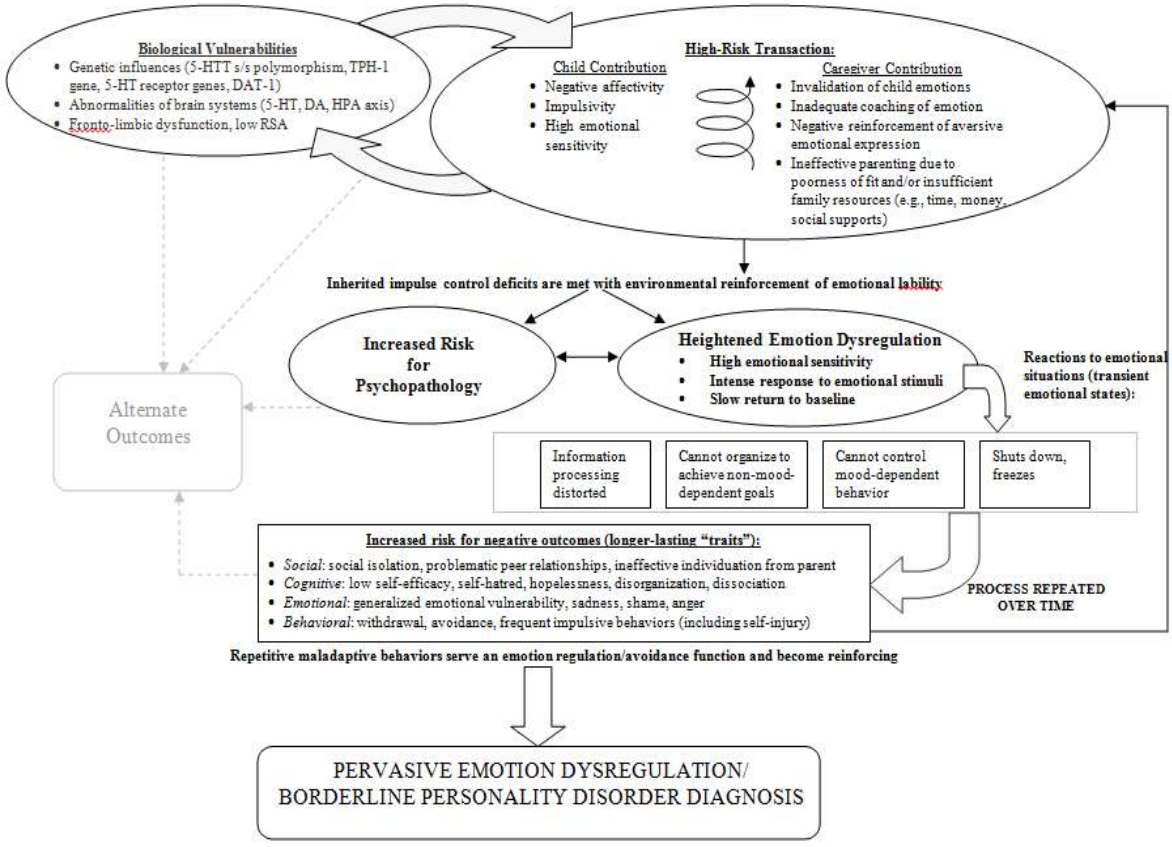
International scientific literature agrees to recognize intense negative emotions, identity instability, interpersonal and behavioral relationships as core features of Borderline Personality Disorder. More recently, regarding the descriptive characterization of the disorder, several Authors agree in identifying three macro-areas: identity, affectivity and impulsivity (for a comprehensive review, see Maffei, 2008).

On the other side, research has progressively focused on the factors that can cause and maintain dysfunctionality. Research findings are consistent in defining difficulties in regulation of emotions (Glenn & Klonsky, 2009) and impulsivity (Sebastian, Jacob, Lieb, & Tüscher, 2013) as core aspects of Borderline Personality Disorder, also supported by functional brain correlates of these skills (i.e., dysfunctions in the dorsolateral prefrontal cortex and limbic regions; Schulze, Schmahl & Niedtfeld, 2016)

Despite these results, clinical practice showed wide heterogeneity within Borderline Personality Disorder patients in psychiatric symptomatology, behavioral dimensions (i.e., dysfunctional behaviors), psychological functioning (e.g., mentalization abilities, personality profile), quality of interpersonal relationships, and social functioning (Cooper, Balsis, & Zimmerman, 2010; Ellison, Rosenstein, Chelminski, Dalrymple & Zimmerman, 2016). Clinicians consider descriptive diagnosis alone quite restricted and strongly recommend to tailor treatment programs and targets on aspects such as the severity of Personality Disorder (PD) diagnosis, core dimensions of personality functioning or specific dysfunctional behaviors (Dimaggio, 2014; Norcross & Wampold, 2011b; Zimmerman et al., 2013).

The model proposed by Marsha M. Linehan (1993) predicts that the essential alteration in Borderline Personality Disorder regards the regulating systems of emotional responses. From an etiopathogenetic point of view, this conception has its foundation in the biosocial personality theory, according to which the functional alteration results from mutual interactions and transactions over time between a biologically based constitutional vulnerability and dysfunctional or inadequately compensatory characteristics of the environmental context. According to Crowell, Beauchaine and Linehan (2009), "BPD […] has temperamental and behavioral precursors that emerge at different times over the course of development and with varying levels of predictive specificity" (p. 502). In the pathogenesis of Borderline Personality Disorder, the transactions between temperamental vulnerabilities and environmental difficulties would be repeated in a vicious circle of ingravescence, compromising the mechanisms of activation and emotional regulation (**Figure 1.1;** for a more detailed description, see Crowell, Beauchaine & Lenzenweger, 2008; Crowell, Beauchaine & Linehan, 2009). For these reasons, the model is defined as biosocial and transactional.

Figure 1.1. Illustration of the biosocial developmental model of Borderline Personality Disorder in DBT (Crowell, Beauchaine & Lenzenweger, 2008, p. 528).



Note. 5-HT, serotonin; 5-HTT, serotonin transporter; TPH-1, tryptophan hydroxylase 1; DA, dopamine; DAT-1, dopamine transporter 1; HPA, hypothalamic–pituitary–adrenocortical; RSA, respiratory sinus arrhythmia.

More specifically, the model of Borderline Personality Disorder within the biosocial theory identifies emotional vulnerability as a stable and central feature (Linehan, 1993). This consists of four aspects, described below:

- High sensitivity to emotional stimuli, in other words a low threshold of reactivity: events and situations that would leave almost indifferent the majority of people (for example, minimal frustration or slight social disapproval) produce immediate reactions;
- High intensity of the emotions tested: the reactions to minimally emotional stimuli are extreme. The abrupt and intense emotional activation determines a narrowing of the attentional field only to activating stimuli (Posner et al., 2002);

- Slow return to the basic state: the emotional reactions have a longer duration than expected. This cascade pervasively influences other cognitive processes, such as the selective re-evocation of memories and the learning of new experiences having the same emotional tonality; moreover, it directs interpretations and expectations in a manner consistent with the mood, facilitating the emotional response to a following stimulus (Selby & Joiner, 2009);
- High level of basal activation: refers to the feeling of having a constant moderately high level of activation, so that an additional even minimal load may be enough to make the already precarious self-control feel lost.

On the other side, invalidating environments criticize and indiscriminately reject the expression of internal states and personal initiative, determining the inability to value subjective sensations, to recognize emotions and to regulate them effectively. Consequently, children who grow up in a predominantly invalidating context will develop their tendency to seek out confirmations on what they should try or think, and how they should behave.

Furthermore, the so-called invalidating environments give intermittent reinforcements to the escalation of emotional responses, causing a certain inability to express emotions and to communicate suffering, the baseline arousal increase (Shenk & Fruzzetti, 2011), and the oscillation between inhibition and extreme expression of emotions. Finally, it is typical of invalidating environments to simplify and trivialize personal goals and choices, thus hindering the development of the ability to tolerate suffering and to use functional coping strategies, and instead supporting unrealistic expectations and hypersensitivity to failure.

The constant devaluation and invalidation of internal experiences, also very strong and difficult to regulate, develops in the subject the inability to recognize and adequately modulate them; moreover, it involves the need to lean on others to get safe indications about the interpretation of reality and the behaviors to be followed, increasing an excessive sensitivity to environmental stimuli (Sauer & Baer, 2010). Since in the dimension of invalidation only the extreme or striking behavioral manifestations are considered capable of soliciting a response of help from the others, a continuous oscillation is observed between the pole of inhibition and that of the excessive intensity of emotions and their expression, with detrimental repercussions for interpersonal relationships and for the pursuit of life goals.

In light of the above, it is clear that in the biosocial model a central problem of individuals with Borderline Personality Disorder is constituted by the lack of some skills necessary to face

life issues, especially social problems, or the inability to implement skills possessed. Some behaviors, which appear dysfunctional compared to a good adaptation to reality, are framed as unsuitable attempts to face problems.

Marsha M. Linehan (1993) in his dialectical-behavioral model re-elaborates the nine criteria of the DSM-IV in five categories, seen in relation to the specific skills taught in the skills training modules (**Table 1.1**). In DBT, Borderline Personality Disorder is conceptualized as a pervasive disorder of the emotional system due to biological vulnerabilities and dysfunctional familiar environment (Crowell, Beauchaine, & Linehan, 2009). DBT considers problematic impulsive behaviors (i.e., self-injury, alcohol or substance abuse, binge eating) as attempts to face with difficult life situation and to regulate overwhelming affects, although ineffective, with harmful consequences and negative secondary emotions (Linehan, 1993). The main goal of DBT is to regulate behaviors and emotions through practicing an acceptant attitude and effective coping strategies, in order to build a life worth living (Linehan, 2014).

Table 1.1. Re-organization of Borderline Personality Disorder criteria and relation with DBT skills training modules (Linehan, 2014).

Borderline Personality Disorder criteria re-organized: dysregulation in…	**DBT skills training modules**
Self-representation • Identity disturbances (criteria 3) • Feelings of emptiness (criteria 7)	**Mindfulness**
Emotions • Affective instability (criteria 6) • Difficulties in anger regulation (criteria 8)	**Emotion regulation**
Behaviors • Impulsivity (criteria 4) • Self-harm and/or suicidal behaviors (criteria 6)	**Distress tolerance**
Cognitive functioning • Transient, stress-related paranoid ideation or severe dissociative symptoms (criteria 9)	
Interpersonal functioning • Unstable and intense interpersonal relationships (criteria 2) • Frantic efforts to avoid real or imagined abandonment (criteria 1)	**Interpersonal effectiveness**

1.1.3. ***Dialectic dilemmas***

From the dialectical perspective in Linehan's theory (1993), Borderline Personality Disorder represents a dialectical failure, because it is blocked in dilemmatic positions, in the inability to realize a synthesis between contradictory phenomena or behavior. The discomfort associated with each polarity causes the patients to oscillate continuously, within each dimension, between an extreme and its opposite: the patients' inability to maintain a dynamic equilibrium between the polarities, which would represent the synthesis, constitutes the central dilemma of therapy. The dialectical dilemmas of subjects with Borderline Personality Disorder are summarized below; for a more exhaustive discussion, please refer to Linehan (1993).

It is important to note that the ultimate aim of the treatment and overall purpose of the DBT is represented by the development in the borderline subject of dialectical behavioral patterns. Treatment stimulates the patient to accept his own experiences and to adopt dialectical modes of thought, balanced, integrated and adherent to reality.

1.1.3.1. EMOTIONAL VULNERABILITY VS. SELF-INVALIDATION

It consists in the oscillation between intense and uncontrollable emotional reactions, and the general attribution of the causes of behavior to the lack of will in controlling oneself or one's emotional vulnerability, relying on others to have indications on the external reality. The inability of the subject to rely on his own rational abilities, compromised by the high emotional activation, leads him to experience feelings of shame and thoughts of self-evaluation.

1.1.3.2. ACTIVE PASSIVITY VS. APPARENT COMPETENCE

Active passivity means the tendency to face situations with a pessimistic attitude, involving others and delegating problem solving: they alternate in the person painful feelings of impotence and low self-efficacy, at moments of anger and aggression towards those who should have helped him, facing the issues in place of his, but he was not able to.

The apparent competence consists in showing oneself able to face problematic aspects in certain situations, while in other contexts one behaves as if these competences had never been acquired. The explanation is twofold: on the one hand, there may be the influence of emotional states conditioning learning, which, intervening to an important extent in some

contexts (for example, sentimental ones), compromise the individual's rational capacities. In other cases, the competence could only be of a façade, since it was not realized starting from a dialectical synthesis of personal ambivalences, but rather on the basis of the negation of emotional states - that is, on the invalidation of oneself.

1.1.3.3. UNRELENTING CRISES VS. INHIBITED GRIEVING

The episodes in which the individual feels overwhelmed by emotions and tries to manage them with dysfunctional behaviors are the result of repeated stressful events and concomitant emotional hyperreactivity. On the contrary, there is a tendency to avoid or deny the experiences and expressions related to the most acutely painful emotional situations, due to the inability to process them; however, the avoidance strategy involves exacerbating the effects of each stressful event.

1.1.4. ***Stages of treatment***

The purpose of overcome dialectic dilemmas is gained through consecutive stages. After pre-treatment, devoted to orientation and commitment, Stage 1 addresses suicidal and other severe impulsive behaviors in order to achieve behavioral and emotional control. Stage 2 aims to elaborate suffering past memories and it is particularly suitable for clients with an history of trauma. Stage 3 focused on ordinary life problems, while Stage 4 aims to enhance the capacity for joy, also through religious values.

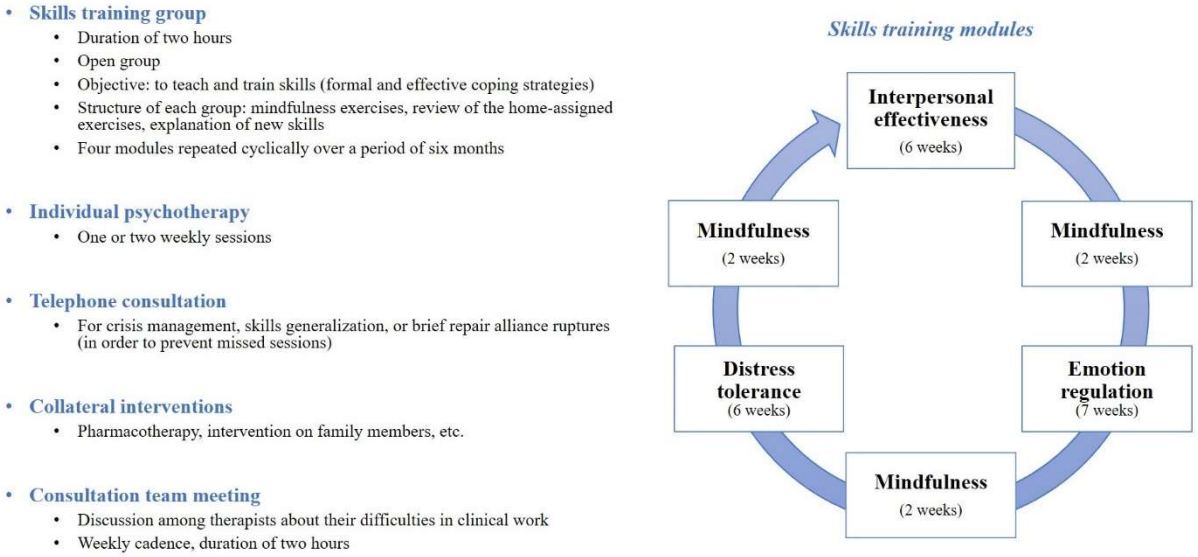
Within each stage of treatment, DBT focuses on a hierarchy of behavioral targets, in terms of behaviors to increase and behaviors to decrease. The hierarchy helps ensure that the most important behaviors are attended to first. **Table 1.2** summarizes therapeutic targets, distinguishing the different phases of the treatment.

Stage 1 is the only manualized (Linehan, 1993). Its treatment modes include individual sessions, skills training groups, phone coach, and ancillary intervention (i.e., pharmacotherapy), moreover consultation team meeting were run weekly. **Figure 1.2** depicts the organization of DBT program in the first phase of treatment.

Table 1.2. Treatment target in DBT: determining interventions (Linehan, 2014, p. 41 Vol. I).

PATIENT CHARACTERISTICS AND TREATMENT TARGETS	SUGGESTED INTERVENTIONS
DBT Stage 1	
1. Life-threatening behaviors: Suicide attempts Suicide crisis behaviors Deliberate self-harm Other imminent life-threatening behaviors **2. Serious therapy-interfering behaviors:** Noncollaborative behaviors Noncompliance Nonattending behaviors Behaviors that interfere with other patients Behaviors that interfere with therapists' ability to treat **3. Severe quality-of-life-interfering behaviors:** Incapacitating and/or severe mental disorder Extreme poverty/deprivation/homelessness Criminal behaviors with high imminent risk of jail Domestic violence Behavior dyscontrol with serious consequences **4. Severe skills deficits**	**Standard DBT: Outpatient** DBT skills training + Skills coaching between sessions + DBT individual therapy **or** Intensive case management + DBT suicide protocol + Crisis plan with area crisis line **Standard DBT: Inpatient, residential, day treatment programs** DBT skills training + Skills coaching between sessions + DBT individual therapy **DBT skills training while on waiting list**
DBT Stage 2	
1. Post-Traumatic Stress Disorder (PTSD) **2. Residual mental disorders with moderate severity not treated in Stage 1:** Anxiety disorders, Eating disorders, Mood disorders **3. Emotion dysregulation, dysfunctional intensity or duration of emotions:** Shame, guilt, sensitivity to criticism; anger, disgust, envy, jealousy; loneliness, inhibited grieving; emptiness, excessive sadness; fear	**Standard DBT: Outpatient** (see above) + DBT PTSD protocol + prolonged exposure or other evidence-based PTSD treatment **DBT skills training curriculum for:** Eating disorders Emotion dysregulation Treatment-resistant depression
DBT Stage 3	
Problems in living: Mild-severity disorders Difficulties in setting and/or achieving life goals Difficulties with problem solving Low self-efficacy/self-esteem Inadequate quality of life Relationship/marital distress Employment difficulties/distress Mild emotion dysregulation Indecision/desire for consultation Need for check-ins, checkups, tune-ups	**DBT skills training** + as-needed individual treatment (DBT or non-DBT) + as-needed skills coaching
DBT Stage 4	
Incompleteness: Desire for spiritual fulfillment/spiritual direction Desire for peak experiences/experience of reality as it is Boredom End of life issues	**DBT skills training** (modules of reality acceptance and mindfulness skills) + mindfulness retreats

Figure 1.2. Organization of DBT interventions in Stage 1 of treatment and skills training modules (Linehan, 1993, 2014).



1.1.5. *Modes of treatment*

As specified in the manual (Linehan 1993), the DBT treatment is performed by a group of therapists, in an outpatient setting or day-hospital setting. The therapeutic team meets once a week in structured consultation meetings.

The DBT treatment provided to patients is based on some assumptions (**Tables 1.3 and 1.4**) and provides for various therapeutic measures, as already stated: individual psychotherapy, group of skills training, telephone consultation, any additional interventions (family group, psychopharmacological treatment, etc.).

The general objective of the DBT is to put patients in the condition of having "a life worth living", that is dignified and satisfying. Treatment goals are agreed with the patient and must consider the level of impairment of functioning, determined by the share of behavioral, emotional and cognitive control. More specifically, the primary objectives of the first phase of treatment are to reduce the behaviors that put the patient's safety at risk, which interfere with the treatment or which compromise the quality of life; to achieve this, the acquisition and

generalization of the skills learned and trained in the groups of skills training (mindfulness skills, emotional regulation skills, tolerance skills of psychic suffering, interpersonal effectiveness skills) are encouraged. The secondary objectives consist in the resolution of dialectical dilemmas.

DBT individual sessions are organized according to a structure that includes certain constraints.

Firstly, during the session, the therapist is encouraged to create and foster a welcoming emotional atmosphere, so that the patient can feel understood, accepted and treated with adequate respect and dignity.

Secondly, the therapist and the patient review the weekly diary card (see **Fig. 1.3**), on which the patient has daily noted problematic behaviors, emotions and impulses to act. The objective is to monitor the implementation (or the impulse to implement) the dysfunctional behaviors considered as the treatment target. To do this, the patient therapist analyzes the behavioral chains through the so-called chain analysis (that is, the sequences of events, thoughts and emotions that have led to problematic behavior; see **Fig. 1.4**), identify emotions and the level of impulsivity, discuss alternative strategies.

In a more advanced phase of treatment, or when the therapist believes it is useful and effective, the therapeutic couple can focus on dialectical dilemmas as problematic behaviors, identifying the nature and polarity of the patient's antidialectic positions.

Thus, patient's resources are incentivized and supported, while problematic behaviors are identified, investigated with respect to the triggers, vulnerabilities and protective factors, and their replacement is supported by more effective behavioral. However, distinguishing itself from traditional cognitive-behavioral therapies, DBT is not only directed towards learning skills and modifying behavior, but also to the acceptance of emotional states, particularly the painful ones. Furthermore, the validation of the patient's abilities and of the changes he makes as an application of dialectics to self-representation is central to therapy.

During treatment, the therapist constantly supports and encourages an active and collaborative attitude on the part of the patient, involves him, maintains a dialectical attitude and pays attention to what may remain unexplained, unidentified – such as, for example, fears, difficulties or perplexity about change. The goal is to foster a path of conscious, collaborative and satisfying change.

Table 1.3. Assumptions in DBT (Linehan, 1993).

Assumptions concerning patients

- Patients are doing the best they can
- Patients want to improve
- Patients must learn new behaviors in all contexts
- Patients can not fail in DBT
- Patients may not have caused their problems but must still work to resolve them
- Patients need to feel better, to put it all together, and/or to be motivated to change
- The lives of people at high suicidal risk are difficult to bear

Assumptions concerning therapists

- The most therapeutic action is to help the patient change his life according to the achievement of shared goals
- Clarity, precision and compassion are of the utmost importance in conducting the treatment
- The therapeutic relationship is a real relationship between peers
- Behavioral principles are universal and concern therapists in the same way as patients
- DBT therapists can fail
- DBT can fail even if the therapist does not fail
- Therapists who treat patients with Borderline Personality Disorder need support

Table 1.4. Mutual commitments in DBT (Linehan, 1993).

Patients' commitments

- Stay in therapy for at least a year
- Attend individual sessions *
- Attend training skills meetings *
- Reduce the behaviors that put life at risk
- Reduce the behaviors that interfere with the quality of life
- Collaborate in therapy

** After four consecutive missed sessions, the treatment is interrupted*

Therapists' commitments

- Do everything possible to help the patient achieve the positive goals he has set himself
- Comply with the usual ethical standards
- Be available as much as possible, defining the telephone contact mode: crisis, support for skills generalization in everyday life, solving interpersonal problems with the therapist
- Respect the patient
- Keeping professional secrecy (except in the case of life risk)
- Commitment to pay regular sessions
- Availability to record sessions (having a copy)
- Availability to use data for research

Figure 1.3. DBT diary card (Linehan, 2014, p. 73 vol. I).

Dialectical Behavior Therapy Diary Card	Name:	Filled Out in Session? Y N	How Often Did You Fill Out? __ Daily __ 2–3x __ 4–6x __ Once	Last Day Filled Out: Month __ Year __ Day __

Circle Start Day / Day of week	Highest Urge To:			Highest Rating for Each Day			Drugs/Medications							Actions			Emotions		Optional	
	Commit Suicide	Self-Harm	Use Drugs	Emotion Misery	Physical Misery	Joy	Alcohol #	Alcohol What?	Illegal Drugs #	Illegal Drugs What?	Meds. as Prescribed Y/N	p.r.n./Over-the-Counter Meds. #	p.r.n./Over-the-Counter Meds. What?	Self-Harm Y/N	Lied #	Used Skills* 0–7				
	0–5	0–5	0–5	0–5	0–5	0–5														
MON																				
TUE																				
WED																				
THUR																				
FRI																				
SAT																				
SUN																				

Med. Change This Week

Homework Assigned and Results This Week:

***Used Skills**

0 = Not thought about or used
1 = Thought about, not used, didn't want to
2 = Thought about, not used, wanted to
3 = Tried but couldn't use them
4 = Tried, could do them but they didn't help
5 = Tried, could use them, helped
6 = Automatically used them, didn't help
7 = Automatically used them, helped

Urges to:	Coming into Session (0–5)	Belief I Can Change or Regulate My:	Coming into Session (0–5)
Quit Therapy		Emotions	
Use Drugs		Actions	
Commit Suicide		Thoughts	

Skills Focus This Week:

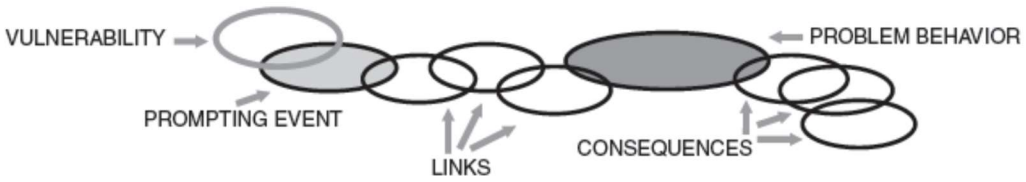
DBT Diary Card	Filled out this card? __ Daily __ 2–3x __ 4–6x Once __ In session		Check skills; circle days skill was practiced						
			MON	TUE	WED	THUR	FRI	SAT	SUN
	Mindfulness	Wise mind	MON	TUE	WED	THUR	FRI	SAT	SUN
		Observe: Just notice	MON	TUE	WED	THUR	FRI	SAT	SUN
		Describe: Put words on, just the facts	MON	TUE	WED	THUR	FRI	SAT	SUN
		Participate: Enter into the experience	MON	TUE	WED	THUR	FRI	SAT	SUN
		Nonjudgmentally	MON	TUE	WED	THUR	FRI	SAT	SUN
		One-mindfully: Present moment	MON	TUE	WED	THUR	FRI	SAT	SUN
		Effectively: Focus on what works	MON	TUE	WED	THUR	FRI	SAT	SUN
	Interpersonal Effectiveness	DEAR	MON	TUE	WED	THUR	FRI	SAT	SUN
		MAN	MON	TUE	WED	THUR	FRI	SAT	SUN
		GIVE	MON	TUE	WED	THUR	FRI	SAT	SUN
		FAST	MON	TUE	WED	THUR	FRI	SAT	SUN
		Walked the middle path; Dialectics	MON	TUE	WED	THUR	FRI	SAT	SUN
		Validation	MON	TUE	WED	THUR	FRI	SAT	SUN
		Strategies to change behavior	MON	TUE	WED	THUR	FRI	SAT	SUN
	Emotion Regulation	Checked the facts	MON	TUE	WED	THUR	FRI	SAT	SUN
		Did opposite action	MON	TUE	WED	THUR	FRI	SAT	SUN
		Problem-solved	MON	TUE	WED	THUR	FRI	SAT	SUN
		Accumulated positive emotions A	MON	TUE	WED	THUR	FRI	SAT	SUN
		Built mastery B	MON	TUE	WED	THUR	FRI	SAT	SUN
		Coped ahead C	MON	TUE	WED	THUR	FRI	SAT	SUN
		Reduced vulnerability: PLEASE	MON	TUE	WED	THUR	FRI	SAT	SUN
		Mindfulness of current emotion	MON	TUE	WED	THUR	FRI	SAT	SUN
	Distress Tolerance	CRISIS STOP skill	MON	TUE	WED	THUR	FRI	SAT	SUN
		SURVIVAL Pros and cons	MON	TUE	WED	THUR	FRI	SAT	SUN
		TIP	MON	TUE	WED	THUR	FRI	SAT	SUN
		Distracted	MON	TUE	WED	THUR	FRI	SAT	SUN
		Self-soothed	MON	TUE	WED	THUR	FRI	SAT	SUN
		Improved the moment	MON	TUE	WED	THUR	FRI	SAT	SUN
		REALITY Radical acceptance	MON	TUE	WED	THUR	FRI	SAT	SUN
		ACCEPT Half-smiling, Willing Hands	MON	TUE	WED	THUR	FRI	SAT	SUN
		Willingness, Mindfulness of Current Thoughts	MON	TUE	WED	THUR	FRI	SAT	SUN

DEAR (Describe, Express, Assert, Reinforce)
MAN (Mindful, Appear confident, Negotiate)
GIVE (Gentle, Interested, Validate, Easy manner)
FAST (Fair, no Apologies, Stick to values, Truthful)
ABC (Accumulate positive emotions, Build mastery, Cope ahead)
PLEASE (Care: PhysicaL ills, Eating, Avoid mood-altering substances, Sleep, Exercise)
TIP (Temperature, Intense Exercise, Paced Breathing, Paired muscle relaxation)

Figure 1.4. Chain analysis of a dysfunctional behavior (Linehan, 2014, p. 20 vol. II).

Chain Analysis

TO UNDERSTAND BEHAVIOR, DO A CHAIN ANALYSIS.



Step 1: Describe the **PROBLEM BEHAVIOR.**

Step 2: Describe the **PROMPTING EVENT** that started the chain of events leading to the problem behavior.

Step 3: Describe the factors happening before the event that made you **VULNERABLE** to starting down the chain of events toward the problem behavior.

Step 4: Describe in excruciating detail the **CHAIN OF EVENTS** that led to the problem behavior.

Step 5: Describe the **CONSEQUENCES** of the problem behavior.

To change behavior:

Step 6: Describe **SKILLFUL** behaviors to replace problem links in the chain of events.

Step 7: Develop **PREVENTION PLANS** to reduce vulnerability to stressful events.

Step 8: REPAIR important or significant consequences of the problem behavior.

1.1.6. *DBT strategies*

The conduction of individual DBT sessions involves the use of specific, diversified and targeted strategies. More specifically, therapeutic strategies were "designed to enhance therapist effectiveness in applying the treatment adherently while remaining maximally responsive to the client" (Heard & Swales, 2016, p. 3). **Table 1.5** summarizes DBT strategies.

Table 1.5. DBT strategies (Linehan, 1993).

STRUCTURAL STRATEGIES
Start of treatment: pre-treatment phase (on average four sessions)
The primary task at the beginning of treatment is to develop a collaborative therapeutic relationship. In the pre-treatment phase, the patient is provided with the main information on the biosocial model, on the assumptions and on the mutual commitments, as well as on the methods, rules and limits of the treatment. Furthermore, the therapist must verify and solidify the patient's commitment to follow and respect the therapeutic program, using communication strategies that encourage critical thinking. For example, the twenty-four hours rule for phone calls: if a patient has performed life-threatening behavior without calling the therapist and contacting him later, the therapist will not answer his phone calls for an entire day.
Conducting the session
The primary task at the beginning of each session is to facilitate a welcoming emotional atmosphere, where it is essential to repair any breakages in the collaborative process with the patient. The topics covered respect the target behaviors (for example, revision of the weekly diary card). In DBT two diary cards are used, both weekly: one in which the intensity of emotions, the intention and the implementation of problem behaviors are examined (self-injurious acts, suicidal attempts, substance or drug abuse, etc.), intention to abandon therapy, use and perceived effectiveness of skills. In the second diary, it is required to mark the skills implemented day by day.
NUCLEAR STRATEGIES
Validation (dialectic acceptance pole)
Validation means the explicit communication of the logic and comprehensibility of the patient's behavior in the light of the context in which it takes place. There are three phases: active observation (collection of information through observation and exploration of behaviors, emotions, thoughts of patients), mirroring (the therapist is attentive and interested, and uses a lively colloquial style) and direct validation (the therapist identifies in the patient's behavior and experience what appears understandable in the light of the context, detecting its meaning and functionality). Validation can take place on the emotional, behavioral or cognitive side, depending on whether it is aimed at subjective states, behaviors and standards, or cognitive schemes, especially when these are imposed in place of a correct perception of reality.

Assessment of problems and problem solving (dialectical pole of change)

All the dysfunctional behaviors that occur within the sessions and / or in the patient's life are considered as problems to be solved, and must therefore be detected in their intensity, duration, frequency and topography (actions actually performed). In case of a particularly relevant problem, the therapist can make a chain analysis of the specific episode, identifying antecedents, situation and consequences. It is very important to formulate hypotheses with the patient about the variables that influence or maintain problematic behavior. Problem solving strategies balance didactic-explanatory contents with critical reflections on objectives, alternative solutions, anticipation of difficulties.

CHANGE PROCEDURES

Contingency procedures

They refer to the functional correlations between a result and a given behavior that produced it: the therapist reinforces adaptive behavior with respect to the objectives and extinguishes non-adaptive behaviors, using shaping principles to reinforce the former for the benefit of the latter. Among the contingency procedures is the definition of the limits by the therapist: he communicates them explicitly, monitors them and respects them, adapting them to modify them only if necessary.

Cognitive strategies

These include the procedures for clarification of contingencies, in which the therapist helps the patient to identify the relationship between behavior and its effects, and the procedures of cognitive restructuring, aimed at the cognitive style and the discrepancies between facts and interpretations.

Skills training procedures

They are related to the acquisition of skills through role-playing, modeling, self-disclosure, examples, etc. The therapist promotes the repetition of the behaviors that must be learned and favors generalization, helping the patient to shape the environment.

Exposure procedures

They are aimed at countering the avoidance of experiences and encouraging the use of skills.

STYLIST STRATEGIES

Dialectical strategies

The therapist tries during the session to find the best balance between acceptance and change, using examples of dialectical thinking and behavior, emphasizing the paradoxes present in the patient's communications, using metaphors and encouraging the patient's resources. It proves to know how to accept natural changes during therapy.

Mutual communication strategies

The therapist is responsive, authentic and seeks harmony with the patient.

Irreverent strategies

Given a respectful attitude and a positive relational climate, the therapist uses the critical spirit and irony to comment on the maladaptive behaviors and their effects, and to compare the patient on these. It adopts a detached style to counter excessive patient involvement, for example with paradoxical declarations on their own impotence or omnipotence.

1.1.7. *Therapeutic relation in DBT*

> My emphasis on the therapeutic relationship as crucial to progress in DBT comes primarily from my work in interventions with suicidal individuals. At times, this relationship is the only thing that keeps them alive.
>
> (Linehan, 1993, p. 21).

> The therapist must work to establish a strong, positive interpersonal relationship with the patient right from the beginning. This is essential because the relationship with the therapist is frequently the only reinforcer that works for a borderline individual in managing and changing behavior. With a highly suicidal patient, the relationship with the therapist is at times what keeps her alive when all else fails. Finally, similar to many schools of psychotherapy, DBT works on the premise that the experience of being genuinely accepted and cared for and about is of value in its own right, apart from any changes that the patient makes as a result of therapy (Linehan, 1989). Not much in DBT can be done before this relationship is developed.
>
> (Linehan, 1993, p. 98)

As stated by Linehan (1993), in DBT therapeutic relationship plays a central role.

First of all, patient and therapist have an equal relationship in terms of value, because each contributes sharing experiences and skills (Linehan, 1993): the therapist as a professional, the patient as the only "expert" of their way of life.

Since the beginning of the treatment, the therapeutic couple moves trying to balance two dialectical tensions: acceptance of experienced experiences and change in the way of dealing with situations, and exercise of control (respect of agreed rules) and freedom (feeling of agency and self-realization). To do this, the therapist commits himself from the beginning, since treatment makes sense only within a relationship of care, therefore aimed at modifying dysfunctional attitudes and behaviors: without the patient's commitment to respecting the goals and agreements of the therapeutic contract – the so-called commitment – therapy can not continue.

Marsha M. Linehan (1993) observes that it is frequent with patients with Borderline Personality Disorder to experience very intense feelings, both in positive valence, as a strong involvement and emotional closeness, as in negative valence, such as the tendency to get angry and become hostile towards them. The solution, for the therapist, is to walk the middle path between the two positions, maintaining a welcoming attitude that actively transmits the positive disposition, even with non-verbal communication (posture, tone of voice, etc.).

The reception of the therapist may encounter obstacles, since in no human relationship the availability towards the other is total: in these cases, Linehan (1993) suggests to the therapists to confront the consultation group, to reconsider their personal limits and if the reaction is linked to the patient's attitudes interfering with the therapy, discuss their concerns in session.

The expression in the session of the patient's anger can also induce anger in the therapist, especially when it is accompanied by complaints about the ineffectiveness of the treatment or from doubts about the continuation of the therapy. Linehan (1993) suggests that the therapist should first accept this emotional state and, through the skills of mindfulness, observe it in its transitory nature. If, on the other hand, it tends to persist, personal problems of the therapist have probably been touched and it may be necessary to confront a supervisor.

The therapist must consider that the anger expressed by the patient does not intend to hurt him as a person, but rather represents a compromise solution; however, to the extent that the patient's attitude leads the therapist to be ill-disposed towards him, it is opportune to reflect with him on the consequences, and therefore on the effectiveness, of behavioral choices.

The possibility of living an authentic interpersonal relationship allows the patient to understand that even in a good relationship there are natural and arbitrary limits: for this reason it is important that the therapist first respects his role and explicates it to the patient.

In DBT therapists use strategies that adopt irony as a comparative tool, in any case combined with strong and deep feelings of welcoming towards the patient. The irreverent communication strategies and unconventional reformulations are intended to capture the patient's attention, to modify his affective responses and to support the development of different perspectives. It is essential to ensure that the patient is not in a psychic condition such that he considers communication as real or refusing: for this reason, irreverence must be followed by interventions of validation and understanding of feelings of despair. In other words, reciprocity and irreverence must be in dialectical balance, and the choice of the times is a central question.

Some recent studies, conducted by Jamie D. Bedics and Marsha M. Linehan (Bedics, Atkins, Comtois & Linehan, 2012a, 2012b), suggest that the benefits of DBT extend beyond symptomatic reduction and involve aspects related to representation In fact, the patients treated with DBT, examined during the course of treatment and one year of follow-up, no longer show hostile and self-injurious thoughts, but have an attitude based on benevolence towards internal states and self-care. The improvement is higher compared to a non-DBT treatment provided by expert therapists – the so-called Community Treatment By Experts (CTBE; Bedics et al., 2012a).

The therapeutic relationship in DBT involves complex dynamic balances between affiliation, affirmation and control, in accordance with the therapeutic model based on the balance between heat, structuring and incentive to commitment (Linehan, 1993). The use of validation, specific to the DBT and not to the CTBE, allows therapists to balance between acceptance and assertiveness: the use of dialectics in therapy by the practitioners has proved to be effective in improving the acceptance and self-care of patients, as well as the reduction of non-suicidal self-injurious acts (Bedics et al., 2012a). However, not with all patients this strategy is useful: indeed, the therapist's perception of the patient, not the patient or the therapist, influences the choice of strategies to be used (Bedics et al., 2012b). Only if the choice is adequate and not rigid will it be effective - for example, with some patients it may be necessary to focus more on validation, while others may need the help of the consultation team to understand and manage a strong hostility on their part (Bedics et al., 2012b).

Comparing the DBT with a client-centered therapy in a naturalistic study, Ralph M. Turner (2000) noted that the quality of the therapeutic alliance, as measured by the *Helping Relationship Questionnaire* (HRQ; Luborsky, 1984), explains a share of the much greater outcome of the treatment model, considering psychological parameters, symptomatology and indices of psycho-social functioning. Although on average the DBT produced major changes, the effectiveness of individual therapists was variable compared to the treatment model.

The analysis of two single cases, extrapolated from a larger sample involved in a research on the efficacy of DBT (McMain et al., 2009), was conducted by Lisa A. Burckell and Shelley F. McMain (2011). The two patients, called Marie and Dean, both initially had a wary and hostile attitude towards the therapeutic team, as evidenced by low levels of collaboration measured by administering to patients and their therapists the *Working Alliance Inventory* (WAI; Tracey & Kokotovic, 1989). In the course of the treatment, only Dean's alliance

remained critical and was accompanied by a minimum change outcome, while for Marie the alliance and general functioning progressively improved.

The authors have formulated several explanatory hypotheses: it is possible that there were different levels of commitment of the two patients with respect to the objectives of therapy - explicitly recalling one of the dimensions of the therapeutic alliance identified by Bordin - or that the Dean therapist did not adequately test the commitment in the pre-treatment phase. As noted by Linehan (1993), to deal with the necessary firmness the interfering behaviors with the therapy it is necessary a clear agreement with the patient on the objectives and strategies of the treatment, also it is necessary that the quality of the bond is strong: only in this way In fact, the therapeutic relationship can be used by the patient as an elective context in which to apply skills, experimenting with dialectic thoughts and behaviors with the therapist.

According to Burckell and McMain (2011), another key aspect in the therapeutic relationship is the ability of the practitioner to understand the emotions he experiences in therapy in light of the patient's habitual relational patterns, also supported by the consultation team. This awareness allows him/her to translate subjective sensations into clinical information, which can become the object of discussion in the session, keeping the experiences of discomfort, personal, separated from a welcoming and validating attitude, proper to the therapeutic role.

The studies conducted so far are very interesting, but not exhaustive. It is interesting to comment on Bedics and collaborators (2012a): "The therapeutic relationship in DBT is fluid and dynamic, since clinicians are required to be flexible enough to assume a variety of interpersonal attitudes depending on the dominant dialectic presented in the session. [...]. Given the fluid nature of the therapeutic relationship, a natural extension of the current study would be to examine the moment-to-moment interpersonal process in individual DBT sessions using observer evaluations. Such a methodology would offer more refined lenses to better capture the dynamic movement, speed and flow of a DBT session, including the therapist's contingent use of affirmations and control in relation to patient behavior" (pp. 75- 76).

Linehan (1993, p.453) cites Safran and Segal (1990, p.286): "Therapists who hide behind the certainty of the conceptual structure presented in this book, instead of risking authentic human encounters, which could allow them to transcend all the roles and preconceptions of how they should be, preclude the possibility of those experiences of human relationships that could cure their patients".

Due to the complexity of BPD personality functioning and the heterogeneity of clinical symptoms, the first phase of DBT treatment needs to last at least for one year and the therapeutic relationship is supposed to be a crucial factor in retaining clients in therapy and in achieving treatment goals (Linehan, 1993; Bedics, Korslund, Sayrs & McFarr, 2013). The therapeutic relationship is viewed dialectically as neither sufficient for promoting change, nor simply a facilitator for therapeutic strategies: instead, it is conceptualized as a process characterized by reciprocity, uniqueness and meaningfulness within each therapeutic couple, in a way that do promote change both in patient and in therapist (Lynch et al., 2006; Robins & Koons, 2000; Heard & Swales, 2009). Linehan (1993) described the therapeutic relationship in DBT as a real relationship, in which the therapist is committed to be honest, genuine, and present. Therapeutic relationship is a strong motivator of change and must be used wisely by therapist to reward desired changes or to extinguish maladaptive behaviors in patients following reinforcement principles (Robins & Koons, 2000). Most of all, accordingly with social learning theory and behavioral contingencies (Heard & Swales, 2009), patient's in-session behaviors toward the therapist are supposed to reflect patterns of behavior in other meaningful relationships, and thus are considered precious opportunities to change problematic interpersonal behaviors (Lynch et al., 2006). In order to use the relationship in a therapeutic way, it must be grounded in reciprocal confidence and collaboration, and the bond with the therapist must be highly valued by the patient (Robins & Koons, 2000). On the other side, Linehan (1993) stressed the importance to adapt treatment's strategies, tasks and therapist's personal style to the individual needs of each patient. From this perspective, DBT therapeutic relationship is similar to the definition of therapeutic alliance of Bordin (1976), which conciliate the dimensions of the interpersonal processes and the technical procedures. Bordin stated that a collaborative relationship consists of agreement on treatment's goals of the treatment, agreement on tasks and techniques, and a reciprocal positive bond between therapist and patient. The Author suggested that such a working alliance would affect positively the outcomes, sustaining feelings of trust and commitment in patient.

Therapeutic relationship is a specific factor contributing significantly to the adherence to DBT model. In fact, specific DBT strategies are devoted to shape the style of the interaction between therapist and patient (Bedics et al., 2013). The therapeutic style in DBT is dynamic and flued, often compared to dance movements (Linehan, 1993, 2014). Therapist needs to be actively engaged and to quickly adjust his behavior in order to elicit more balanced responses from the patient. More specifically, DBT describes two main communication styles (Linehan,

1993): reciprocal (warm and responsive) and irreverent (direct and sometimes destabilizing, however not invalidating) communication. DBT therapists are expected to balance compassion and acceptance with determination and firmness by maintaining adherence to DBT principles, but avoiding rigidity (Lynch et al., 2006; Robins & Koons, 2000; Heard & Swales, 2009).

PART TWO

Effectiveness studies

Ethical axioms are found and tested

not very differently from the axioms of science.

Truth is what stands the test of experience.

Albert Einstein

Out of my later years

"The laws of science and the laws of ethics" (1950)

2.1. Outcome research

2.1.1. *Main topics*

Research in psychotherapy has developed by examining three main aspects in the subjects involved in therapeutic programs (Lingiardi, 2006):

1) the outcome of treatments, that is, the presence of changes in some critical dimensions (Strupp, Horowitz, & Lambert, 1997);
2) the effectiveness of the treatments, measured by evaluating whether the changes observed are due to the therapeutic program or to factors external to therapy (Haaga & Stiles, 2000);
3) the process of change, aimed at identifying the factors and therapeutic actions responsible for the changes observed (Rice & Greenberg, 1984).

Psychotherapy outcome research aims to investigate whether a treatment produces the desired and expected clinical results, in term of relevant changes in target behaviors, relations, or psychological functioning (Gelo, Pritz & Rieken, 2015).

Systematic quantitative research on the outcome of psychotherapy began in the 1950s, to a large extent provoked by a negative report by Eysenck (1952), who claimed whether psychotherapy had any positive effects. In his review, the percentage of improved patients was lower with psychotherapy than without treatment, and lower with intensive psychoanalytic therapy than with standard treatments provided at that time.

Despite the negative report, a highly productive field of research began to develop over the next sixty years, and subsequent reviews showed more favorable results (e.g., Lambert, 2013; Roth & Fonagy, 2004; Wampold & Imel, 2015). These overviews have led to the conclusion that psychotherapy is effective, and that no school of psychotherapy is generally more effective than another (Gold, 2015). Also, psychotherapy research focused on treatment outcome facilitate a dialogue between scientist practitioners and the public and private sector (Comer & Kendall, 2013). However, the search for the best methodologies and the debate on the right interpretation of scientific literature continue until today (Gold, 2015).

2.1.2. ***Methodologies***

Treatment studies include four basic methodological elements: time, a program or treatment, observations or measures, and groups or individuals. These elements can be combined to create a design that is appropriate for the treatment research question and for the setting of the study (Ogles, 2013).

In the field of research on the effectiveness of treatments, the term *Evidence-Based Medicine* (EBM) has become popular since the 1990s. Originally, it was defined as "conscientious, explicit, and judicious use of current best evidence in making decisions about the *care* of *individual* patients" (Sackett et al., 1996, p. 71; italics added for explanatory purposes). Regarding psychotherapy, it is important to note that the definition speaks of care, not of medical treatment, and of individuals, not of medical diagnoses (Gold, 2015). Nevertheless, although the original definition of EBM did not explicitly refer to any study design, in the twentieth century its methodology started to be refined and it became largely about randomized controlled trials and systematic reviews or meta-analyses, in order to reduce biases and improving the reliability of the results (Gelo, Pritz, & Rieken, 2015).

Following the same direction, *Empirically Supported Treatment* (EST) is a term coined in the USA describing a recent trend in health-care policy, that restricts psychotherapists to manualized therapies that have demonstrated efficacy for a specific disorder (American Psychological Association Task Force on Promotion and Dissemination of Psychological Procedures, 1995; Chambless & Hollon, 1998). Within the EST methodologies, randomized controlled trials (RCTs) are study designs in which subjects are randomly allocated in at least two treatment groups – that is, not by chance alone (Comer & Kendall, 2013; for a complete discussion of the topic, please refer to Haaga and Stiles, 2000). Clinical interventions usually are an experimental program and a comparison group (i.e., another treatment program) or a control condition (i.e., a standard practice, a placebo, or no intervention at all, such as waiting list). RCTs are conducted under controlled experimental conditions – that is, they allow one to control for variables systematically influencing the outcome apart from the treatment (Leichsenring, 2009). For this reason, RCTs are especially appropriate to ensure the internal validity of a study (Shadish, Cook, & Campbell, 2002).

Hierarchies of evidence attempt to rank different research designs according to their likely reliability in demonstrating treatment effects. The hierarchy is often shown as a pyramid: RCTs

and/or systematic reviews of RCTs are ranked as the most reliable designs, thus they are at the top, then observational and quasi-experimental designs follow, and at the bottom there are unverified expert opinion or qualitative research (Gold, 2015).

Although most researchers and clinicians would likely agree that the evaluation of treatment is necessary, not all agree on the best methods to identify effective treatments (e.g., Westen, Novotny, & Thompson-Brenner, 2004). For instance, some criticism of EST includes that it standardizes and "medicalizes" psychotherapy more than what would be beneficial for patients (Gold, 2015). Another controversial aspect is that the operational definition of empirically supported treatments focuses on the accumulated data on the efficacy, and this evidence comes from multiple studies; however, the implementation of the treatment from one setting (i.e., research clinic) to another (i.e., service clinic) represents a further and important issue, especially for psychotherapies and complex psychological treatment programs (Comer & Kendall, 2013).

Falk Leichsenring (2009) argued that following the RCT approach, which was originally the methodology of pharmacological research, is questionable with regard to psychotherapy studies, both for the representativeness of clinical practice of selected experimental samples with just one specific mental disorder, and also for the methodology of a randomized treatment allocation. Thus, the author raised questions about the fact that RCTs could be easily applicable to long-term psychotherapy lasting several years.

Unlike RCTs, naturalistic studies are conducted considering the conditions of real clinical practice; thus, even if these studies cannot control for outside variables affecting the outcome to the same extent as RCTs, their results are highly representative about external validity (Leichsenring, 2009). Their internal validity can be improved by quasi-experimental designs using other methods than randomization to allocate subjects (Shadish, Cook, & Campbell, 2002). The debate is still open, since several studies suggested that effectiveness of naturalistic studies do not overestimate effect sizes compared to RCTs (Benson & Hartz, 2000; Concato & Horwitz, 2000; Shadish, Matt, Navarro & Phillips, 2000).

In order to overcome the debate on the presumed superiority of some research designs, instead of a fixed hierarchy, Berger (2005) suggested it could be more useful to think of an "evolution of comparative methodology" (p. 3; see **Table 2.1**).

Table 2.1. Overview of research designs (Berger, 2005; Gold, 2015).

Design	Definition	Strengths	Weaknesses
Single-case study	Applying the intervention to a single participant and noting change	Simplicity; closeness to clinical practice	Sufficient only if changes without intervention are known with certainty
Case series	A series of similar clients receive the same intervention	Sampling variability is reduced as sample size increases; ascertains preliminary indications of efficacy	No explicit comparison with the absence of the intervention
Historical controls	Comparing a current cohort to an earlier cohort before the intervention was available	Establishes an explicit comparison	Services and characteristics of the population may have changed
Parallel controls – matching	Choosing control subjects that are matched on known confounding factors	Rules out historical shifts	Difficult to achieve balance; impossible to control for unknown confounders
Parallel controls – randomization	One sample is divided randomly into different interventions	Can create balance on known and unknown confounders	Clinicians who make decisions about inclusion will try to undermine random assignment
Parallel controls – randomization with allocation concealment	Randomization sequence is kept concealed from clinicians	Creates balance on known and unknown confounders, preventing subversion	Clinicians may still attempt to guess the next assignment

From the point of view of statistical methodology, Panchankis and Goldfried (2007) described how advances in statistics have made it possible to track more realistically patients' change over time, providing individual trajectories over time, with discontinuities and transition points. These methods include growth curve modelling and multilevel modelling. Such analyses require patients to complete assessments more frequently in order to allow researchers to identify points of change – that is, either improvement or deterioration. Such methods therefore enable researchers to address the limitations of earlier research by considering outcomes within a specific context and having greater ecological validity: thus, they offer an improved opportunity to address the concerns of clinicians as well as researchers.

2.1.3. *Definitions of outcome measures*

Any attempt to substantiate if a psychological intervention could be considered effective relies heavily on outcome indicators (Ogles, 2013).

A first distinction relating to outcome indicators in psychotherapy research concerns the constructs of efficacy and effectiveness, which have often been treated as conceptually and operationally distinct dimensions (Comer & Kendall, 2013; Gold, 2015; Lambert, 2013).

It is generally accepted that the term *efficacy* refers to the effect of a treatment under "ideal" circumstances, when the studies were conducted by strictly checking the variables, whereas the term *effectiveness* refers to the effect of a treatment under "real world" circumstances, when a greater weight is attributed to the ecological validity of the research (Gold, 2015; Lingiardi, 2006). The glossary of the Cochrane Collaboration (The Cochrane Collaboration, 2005, cited in Gold, 2015, p. 551) defines *efficacy* as follows: "The extent to which an intervention produces a beneficial result under ideal conditions. Clinical trials that assess efficacy are sometimes called explanatory trials and are restricted to participants who fully co-operate". On the other side, *effectiveness* is defined as "the extent to which a specific intervention, when used under ordinary circumstances, does what it is intended to do. Clinical trials that assess effectiveness are sometimes called pragmatic or management trials. See also intention-to-treat".

The distinction is not about research design, but rather about the focus of the research question (Gold, 2015). According to previous considerations, efficacy and effectiveness studies address different questions of research: the formers examine the efficacy of a treatment under controlled conditions, whereas effectiveness studies address the effectiveness under clinical practice conditions (Leichsenring, 2009). In other words, RCTs can address effectiveness or efficacy, depending on how they are designed (Thorpe et al., 2009). For instance, in an effectiveness trial, patients would be selected to adequately represent a typical clinical population, while in an efficacy trial the selection and exclusion criteria would be more compelling, to define a quite homogeneous sample for which a treatment is supposed to work. Likewise, the treatment is typically more rigorously defined in an efficacy study than in an effectiveness study, with training of therapists before the study, supervision and assessments of treatment fidelity during the study (Lambert, 2013).

However, despite psychotherapy researchers have put emphasis on the distinction between efficacy and effectiveness, the two constructs are probably best understood as prototypes, with grey zones in between them (Gold, 2015). Thus, the relationship between efficacy and effectiveness studies is not a rivalrous one, but rather a complementary one (Leichsenring, 2009).

Examining outcome indexes, at first thought, their definition (and their corresponding opposite, that is, negative effects) may seem obvious. However, further contemplation demonstrates the question is far more complex (Ogles, 2013). For instance, Strupp and Hadley (1977) considered that the definition depends on the so-called *vantage point* or *primary stakeholders*: that is, the individual patient, the society, and the mental health professionals, which one has differing perspectives on outcome. Furthermore, Keisler (1973) argues that "there is no one answer to the criterion problem. There are as many answers as our theoretical and research ingenuity can establish. There are no best measures that one can recommend for evaluating the outcome of psychotherapy. There are as many measures as are relevant and required by the theoretically specific constructs of patient change involved" (p. 45).

Accordingly, based on the suggestions of the scientific literature, the definitions and the measurements of positive outcome can vary widely, depending on the theoretical framework of the researcher, the vantage point of the outcome evaluator, and other characteristics of the study (Comer & Kendall, 2013). A review of psychotherapy studies found 1430 different measures, and Authors raised the question whether this represents "diversity or chaos" (Hill & Lambert, 2004, p. 107). By the way, since no single gold standard measure exists to test the efficacy of a treatment, whatever methods of assessment are used, they all need to be "rigorous, psychometrically sound, and reproducible" (Ogles, 2013, p. 137).

2.1.4. *The CONSORT Statement*

The CONSORT Group is an international and eclectic group, comprising experts in clinical trial methodology, guideline development, biomedical journal editors, and research funders. CONSORT stands for *CONsolidated Standards Of Reporting Trials*. The work of the research group encompasses various guidelines and suggestions, developed to alleviate the problems arising from inadequate conducting and reporting results from studies on outcomes of medical treatments, preferably RCTs.

The starting point of the work of the CONSORT Group is the opinion according to which well-designed and properly executed RCTs provide the most reliable evidence on the efficacy of healthcare interventions; on the other side, scientific evidences suggested that trials with inadequate methods are associated with bias, especially exaggerated treatment effects (Moher et al., 2010). Such biased results can mislead treatment decisions for patients and even the formulation of national public health policies. Critical appraisal of the quality of clinical trials is possible only if the design, conduct, and analysis of RCTs are accurately and exhaustively described in the report. According to DerSimonian and colleagues (1982), "editors could greatly improve the reporting of clinical trials by providing authors with a list of items that they expected to be strictly reported".

In line with these considerations, the main product of CONSORT is the CONSORT Statement: an evidence-based, minimum set of standard recommendations for reporting RCTs, facilitating their clear, complete and transparent summarizing (Begg et al., 1996; Moher, Schulz & Altman, 2001; Moher et al., 2010). Even if readers, peer reviewers, and editors can also use CONSORT to critically appraise and interpret reports of RCTs, it was not meant to be used as a quality assessment instrument: rather, its content focuses on the internal and external validity of trials. It was first published in 1996; since it is an ongoing initiative, it was revised in 2001 and then again in 2010.

The CONSORT Statement comprises a checklist of essential items that should be included in reports of RCTs, and a flow diagram on the progress of all participants through the trial. It is aimed at primary reports of RCTs with two group, parallel designs; however, it is also relevant to a wider class of trial designs, such as non-inferiority, equivalence, factorial, cluster, and crossover trials.

In addition, extensions of the CONSORT Statement have been developed to give additional guidance for RCTs with specific designs, data, interventions, and report sections. For instance, the CONSORT Group developed a CONSORT Statement extension for trials of Nonpharmacologic Treatments (NPTs; Boutron, Moher, Altman, Schulz & Ravaud, 2008), such as surgery, rehabilitation, education, psychotherapy.

Up to now, the CONSORT guideline is the most well-known reporting instruction list of RCTs. The introduction of CONSORT within journals is associated with improved quality of reports of RCTs (Hopewell, Dutton, Yu, Chan, & Altman, 2010). According to the Patient-Centered Outcomes Research Institute (PCORI; Gabriel & Normand, 2012), it has been ranked among the top health research milestones of the twentieth century and among the top 1% of article-level metrics (for views, downloads, citations, and social media shares) tracked by PLoS Medicine.

More detailed descriptions can be found on the CONSORT website: http://www.consort-statement.org/

2.2. Outcome research on Dialectical Behavior Therapy

Up to now, several studies have established the efficacy of different treatment programs in reducing core features of Borderline Personality Disorder (Stoffers et al., 2012). More specifically, six forms of psychotherapy are supported by empirical evidences:

- Cognitive Behavior Therapy (CBT; Davidson et al., 2006);
- Dialectical Behavior Therapy (DBT; McMain et al., 2009);
- Mentalization Based Treatment (MBT; Bateman & Fonagy, 2004);
- Schema-Focused Therapy (SFT; Giesen-Bloo et al., 2006);
- Systems Training for Emotional Predictability and Problem Solving (STEPPS; Blum et al., 2008);
- Transference-Focused Psychotherapy (TFP; Clarkin, Yeomans, & Kernberg, 2006).

Psychotherapies for Borderline Personality Disorder, especially DBT and psychodynamic approaches, seem to be effective on symptoms relevant to patients' pathology.

More in detail, Cristea and colleagues (2017) conducted a wide and rigorous meta-analysis of thirty-three RCTs (for a total of 2256 participants) on the efficacy of psychotherapy for Borderline Personality Disorder. Results showed that, compared with control interventions, outcomes of psychotherapies significantly improved the most relevant symptoms, suicide attempts, self-harm, health service use, and general psychopathology, both in stand-alone designs (an independent experimental treatment vs a control condition or treatment-as-usual, TAU) and in add-on designs (an experimental treatment superimposed to TAU *vs* TAU alone). No differences were found in the odds ratios for treatment retention between the experimental treatments and control groups. Only Dialectical Behavior Therapy and psychodynamic approaches confirmed to be more effective than control interventions. However, differences were no longer detachable in well-designed and implemented trials, if the control group was balanced for manualization or for the systematic meetings of the therapeutic team.

Regarding DBT, up to now, it proved its effectiveness both in RCT and not-RCT studies conducted in US and European centers: it reduced suicide attempts and self-harm, impulsivity, experiential avoidance, feeling of anger, sadness and hopelessness; improvement in emotion processing and expression, general and relational functioning and increased acceptance and self-efficacy were gained (for a review, see Linehan, 2014; Cristea et al., 2017). However,

mechanisms promoting or compromising therapeutic action are not clearly defined thus far: the process of change may be due to either specific mechanisms of action or common therapeutic factors (McMain et al., 2009).

An overview of randomized controlled trials (RCTs) examining the effectiveness of standard DBT is presented in **Table 2.2**. As noted previously, standard DBT program includes individual sessions, skills training group, between-session telephone coaching, and team meetings for therapists.

However, looking at the current research debate, there seems not to be a definitely gold standard in the treatment for Borderline Personality Disorder and comparisons of treatments reported few differences (Stoffers et al., 2012): as outlined by McMain and colleagues (2009), differences could be attributed to the process of change, since for many treatments there may be different pathways to change due to either specific mechanisms of action or common factors.

Table 2.2. Published RCTs and quasi-experimental studies in DBT with adult BPD patients (source: https://behavioraltech.org/).

Authors	Subjects/Setting	Design	Adherence to DBT	Outcomes
RCTs				
Linehan, Armstrong, Suarez, Allmon & Heard (1991)	Chronically suicidal women with BPD between 18-45 years of age; outpatients	Comparing DBT (*N*=24) to community-based treatment-as-usual (*N*=23). Treatment lasted for 12 months. Following completion of treatment, subjects were assessed at six-month intervals for one year.	DBT standard program (individual psychotherapy, 150-minute group skills training, and consultation team). Subjects were exposed to all skills twice within the trial.	DBT showed significant reductions in parasuicidal behavior, were significantly more likely to start treatment (100% vs. 73%) and were significantly more likely to complete treatment (83% vs. 42%). DBT had significantly fewer inpatient hospital days compared to TAU. Findings were largely maintained throughout the post-treatment follow up year. During the one-year post-treatment follow-up, parasuicide repeat rate was significantly lower for DBT compared to TAU (26% vs. 60%).
Linehan, Heard, & Armstrong (1993)	Chronically suicidal women with BPD. Ss were currently undergoing outpatient individual psychotherapy in the community.	Subjects already in psychotherapy with therapist in the community were matched and randomly assigned to DBT group skills training condition as an addon to existing individual therapy (*N*=11) or assessment only condition (*N*=8).	Subjects in DBT condition only were exposed to DBT group skills training.	Despite strong prediction that adding DBT skills training group to ongoing individual psychotherapy would enhance treatment outcomes, no such effects emerged.
Koons, Robins, Tweed, Lynch, et al. (2001).	BPD women recruited from Veterans' Administration clinic. Subjects not required to have history of parasuicidal behavior.	Randomized controlled trial comparing DBT (*N*=10) to treatment-as-usual (*N*=10) in outpatient setting. Length of treatment was six months. Ss were assessed at baseline, treatment midpoint (3 months), and at treatment completion (six months).	This study included all components of standard DBT. Because of shorter treatment duration (six months), all skills were taught one time only.	Subjects in the DBT condition showed greater reductions in suicidal ideation, depression, hopelessness, and anger compared to TAU at post-treatment. Upon treatment completion, 3 of 10 DBT Ss continued to meet criteria for BPD compared to 5 of 10 in TAU. Short duration of treatment (from 12 months to 6 months). Additionally, this study did not include current or past history of parasuicidal behaviors as criteria for inclusion.

Authors	Subjects/Setting	Design	Adherence to DBT	Outcomes
Safer, Telch, & Agras (2001)	Women, ages 18-65, averaging at least one binge/purge episode over previous 3 months; general outpatient clinic setting.	Randomized controlled trial (*N*=31) comparing 20 weeks of DBT to a 20week waiting-list condition. Ss assessed at baseline and post-treatment.	DBT Ss received individual psychotherapy sessions aimed at teaching emotional regulation skills to replace binge eating and purging behaviors. DBT adapted for the treatment of bulimia nervosa.	Results show DBT adapted for bulimia nervosa was associated with decrease in binge/purge behaviors. The DBT group had a 0% drop out and significant treatment effects were found for the frequency of binge eating and purging behaviors. Four participants (28.6%) in the DBT group were abstinent from binge/purge behaviors at 20 weeks, compared with no participants in the waiting-list group. Five reduced their number of binge eating episode by 88% and purging episodes by 89%, while the remaining four remained symptomatic.
van den Bosch, Koeter, Verheul, & van den Brink (2005)	Female BPD patients with and without substance abuse problems; clinical referrals from addiction treatment centers and psychiatric services; outpatient DBT.	Randomized controlled trial (*N*=58) examining efficacy of DBT compared to TAU. Ss assessed at baseline, posttreatment (52 weeks), and at a six month post-treatment follow-up (78 weeks). TAU consisted of ongoing outpatient treatment from original referral source. Focus of this paper was specifically on the sustained efficacy of DBT six months after the discontinuation of treatment.	DBT Ss received comprehensive, standard DBT. Sessions of DBT individual therapy were rated for adherence across a five-point Likert scale. Median adherence score was 3.8, indicating "almost good DBT".	Positive outcomes favoring DBT were maintained during the six month post-treatment follow up period for impulsive and self-mutilating behaviors. At 18 months, no relapse was observed for these behaviors in the DBT group; additionally, they showed significantly larger reductions in alcohol use both at 12 months and 18 months. No differences were found between conditions for substance abuse.
van den Bosch, Verheul, Schippers & van den Brink (2002)	Female patients with BPD with or without comorbid substance abuse, ages 18-70; clinical referrals from outpatient psychiatric or substance abuse treatment; outpatient DBT program implemented at addiction treatment center.	Randomized controlled trial (*N*=58) comparing efficacy of DBT with treatment as usual, the impact of comorbid substance abuse on the efficacy of DBT, the overall efficacy of DBT on reducing substance abuse, and if standard DBT can be implemented among mixed group BPD patients without and without SA. Pilot phase recruited 9 BPD	Standard comprehensive DBT.	The intent of this paper was to examine differential results in treatment outcome among individuals with BPD with and without substance abuse. Implementation in a mixed population of BPD patients took place without any major problems. From exit interviews, all patients judged the program as validating and helpful and the treatment as very important. Session attendance was 81% and there was no difference found for patients with and without

Authors	Subjects/Setting	Design	Adherence to DBT	Outcomes
		patients who were interviewed at beginning and end of treatment. Assessments are described in Verheul et al. (2003). Course of substance use behaviors and borderline symptomatology at 18 month follow up are presented.		SA problems Comorbid SA did not significantly modify the impact of DBT on borderline symptoms; benefits of DBT on BPD symptoms occurred amongst both non-substance using and substance-using patients. Standard DBT is equally effective when suicidal and self-destructive behavior are focus of treatment, however it does not seem to effect substance abuse problems in these patients. There is almost no change over the 18 month follow up period, implying substance use problems were not effectively targeted in the TAU or in treatment condition. The authors recommend developing a multitargeted DBT program for a broad patient population including several specific impulse control disorders and combinations of them.
Linehan, Comtois, Murray, Brown, Gallop, Heard, Korslund, Tutek, Reynolds, & Lindenboim (2006)	Women, ages 18-45, who met criteria for BPD and reported at least two suicide attempts and/or self-injuries in the past five years and at least one in the past eight weeks; outpatient clinic and community practice.	Randomized controlled trial (*N*=101) comparing 1 year of DBT to a nonbehavioral community-treatment-by-experts (CTBE) to address whether DBT's effectiveness in treating suicidal and BPD patients can be accounted for by treatment factors common to most psychotherapies. Ss were assessed prior to treatment assignment and at 4-month intervals through the 1-year treatment and 1-year follow-up periods.	Standard comprehensive DBT.	DBT had better outcomes on intent-to-treat analysis in most target areas over the two-year treatment and follow-up period. DBT Ss were half as likely to make a suicide attempt, were less likely to be hospitalized for suicide ideation, and had lower medical risk across all suicide attempts and self-injurious acts combined. DBT Ss were significantly less likely to drop out of treatment (DBT=25%, CTBE=59%). DBT subjects had significantly fewer psychiatric emergency room visits and fewer psychiatric hospitalizations. Ss in both conditions showed statistically significantly improvement over time on depression, reasons for living, suicide ideation. This study was the first to examine DBT for the purpose of identifying the specific elements of treatment that are necessary

Authors	Subjects/Setting	Design	Adherence to DBT	Outcomes
				and sufficient for an efficacious outcome with BPD individuals. The findings indicate that the efficacy of DBT cannot reasonably be attributed solely to general factors associated with receiving expert psychotherapy. DBT appears uniquely effective in reducing suicide attempts.
Linehan, McDavid, Brown, Sayrs, & Gallop (2008)	24 females (M_{age}=37) with BPD and high levels of irritability and anger; outpatient clinic.	RCT compared 6-month DBT + olanzapine condition (n=12) or DBT + placebo (n=12). Participants assessed at pretreatment (time 0), week 7 (time 1), week 14 (time 2) and week 21 (time 3). Clinicians monitored patient verbal and physical aggression weekly. Psycho-pharmacologists assessed somatic symptoms at each medication visit.	Comprehensive DBT provided.	Random-effects (multi-level linear) regression models: both the DBT + olanzapine and DBT + placebo conditions demonstrated significant reductions in anger and aggression over time, olanzapine group demonstrated larger and faster decreases in irritability over time. Between condition differences on irritability and aggression levels not significant. Participants in the placebo condition had larger reductions in NSSI and suicidal behavior, but these between group differences not significant. Participants in olanzapine condition had a significant decrease in depression over time, while those in the placebo group did not demonstrate a similar reduction in depression. Olanzapine may have a beneficial, additive effect on irritability and aggression, over and above that of DBT. Preliminary, unexpected findings suggest that olanzapine may have been linked to slowed improvements in suicidal ideation as compared to placebo. Further research needed before more definitive conclusions can be drawn regarding the role of olanzapine in suicidal behavior.

Authors	Subjects/Setting	Design	Adherence to DBT	Outcomes
Harned, Jackson, Comtois, & Linehan (2010)	52 females (M_{age} = 29) with BPD, recent suicide attempts and/or NSSI, ptsd symptoms; outpatient clinic.	Participants drawn from a larger RCT; were assessed at pre-treatment and at 4month intervals during the 1 year treatment. Composites of typical exclusionary criteria for prolonged exposure were assessed: Composite 1: suicidality and self-injury; Composite 2: suicidality, self-injury, substance dependence and dissociation.	Comprehensive DBT was conducted.	T-tests: individuals with BPD & PTSD met criteria for more Axis I disorders than those without PTSD. Symptoms of self -injury and suicide risk decreased over time in the intent-to-treat sample, regardless of PTSD status. Substance dependence and dissociation (typical exclusionary criteria for PTSD protocol treatments) decreased significantly over time for the BPD-PTSD patients only, and not for the whole sample.
Neacsiu, Rizvi, & Linehan (2010)	108 females (M_{age} = 31 years) with recurrent suicidality and BPD or drug dependence and BPD; outpatient clinic.	Study drawn from three larger RCTS, compare DBT vs. controls on frequency of DBT skills use. Participants assessed at pretreatment, 4, 8, and 12 months, and at 4 month follow-up.	Comprehensive DBT	Linear mixed models: participants in DBT conditions reported higher skills use and significant increases in skills use over time at post treatment, as compared to control conditions. Further, the use of DBT skills (across both conditions) fully mediated relationship between time in treatment and decreased suicide attempts and depressive symptoms, and increased anger control. DBT skills use partially mediated association between time and NSSI.
Feigenbaum, Fonagy, Pilling, Jones, Wildgoose, & Bebbington, (2011)	42 adults (72% female, M_{age} =35 years) with BPD or other personality disorder, half diagnosed with co-morbid MDD; DBT outpatient.	RCT compared DBT (N=26) to TAU (N=16). Only 11 people in the DBT condition completed the full 1- year DBT program. measures were administered at pre, 6 months, and post treatment.	Included all elements of comprehensive DBT.	Intent-to-treat analyses: DBT and TAU conditions were equally effective in reducing psychiatric symptoms. Number of hospitalizations and duration of stay unaffected by condition. Individuals in DBT demonstrated a more marked decline in PTSD severity and self-reported risk (to self and others) relative to TAU.

Authors	Subjects/Setting	Design	Adherence to DBT	Outcomes
Hill, Craighead, & Safer (2011)	32 females (M_{age} = 22 years) with sub threshold Bulimia-Nervosa (BN); University outpatient clinic.	RCT compared 12 week DBT for BN (N = 18) to a 6-week delayed treatment control (N = 14). First 6 DBT sessions lasted 90 minutes. Participant assessed at baseline, 6 weeks, and post-treatment.	Modified DBT with Appetite Awareness Training (AAT). DBT skills training followed Safer's DBT for Binge Eating and Bulimia; AAT followed Craighead's manual. DBT diary card and chain analysis tools were modified to include appetite monitoring. No phone consultation, skills group, consultation team were provided. DBT clinicians trained by Safer, while additional therapists trained by reviewing manual and tapes of Safer conducting DBT. Therapists completed self-assessed adherence ratings after every session.	ANCOVA analyses: at week 6, participants in the treatment group reported lower frequency of purges, lower past month frequency of objective binge episodes, lower overall eating pathology than controls. Participants in treatment group also reported improved appetite awareness, but not improved emotional awareness. No significant between group differences found for subjective binge episodes, negative affect, emotional eating or self - efficacy. Intent-to-treat (ITT) analyses: 16/26 participants who started treatment no longer met full or sub threshold criteria for BN. As predicted, ITT analyses: 72% of post-treatment reduction in binge episodes occurred by week 6; rates of improvement similar among the treatment completers.
Published Quasi Experimental Studies				
Comtois, Kerbrat, Atkins, Harned, & Elmwood (2010)	30 participants (80% female, M_{age} = 37 years) with BPD. Public mental health service; outpatient clinic.	A pre-post evaluation examined the impact of DBT-Accepting the Challenges of Exiting the System (DBTACES) on outcomes of employment, hospital admissions, self-injury, and quality of life. Length of treatment included one year of standard DBT (SDBT), followed by one year of DBTACES. Participants assessed at pre and post SDBT, pre and post DBT-ACES, and at one year follow up after DBTACES.	After receiving 1 year of standard DBT, patients received DBT- ACES, an adapted form of DBT that teaches contingency management and exposure strategies that specifically aid psychiatrically disabled individuals in finding employment, and exiting the public mental health system. Individuals in DBT-ACES receive weekly individual DBT and skills group. Phone coaching/consultation team not mentioned in article.	Random-effects regression models (RRMs): participants significantly more likely to be employed or in school at the end of SDBT, and were more likely to be working 20 or more hours at end of DBT-ACES. Participants had significant reduction in inpatient admissions, and reported an improved quality of life between end of SDBT and end of DBT-ACES.

2.3. The present study

2.3.1. *Aims*

In the present study we aimed at evaluating the effectiveness over one year of treatment of two manualized structured treatment for Borderline Personality Disorder, DBT and Group Experience Therapy (GET), a psychodynamically oriented program developed by clinicians with expertise in treating Personality Disorders.

Previous studies demonstrated that DBT skills training was superior to standard group therapy in general psychiatric symptoms, depressive symptoms, anxiety, irritability, anger and affect instability (Soler et al., 2009). However, given the richness of their theoretical background, the complexity of scheduled activities, and the expected multidimensional therapeutic action, we considered DBT and GET comparable with regard to the effectiveness over primary clinical target in a sample of patients with severe Personality Disorders and Borderline Personality Disorder traits. Thus, over one year, we hypothesized that participants in both groups showed relevant reduction of frequency and severity of suicidal and nonsuicidal self-harmful behaviors, behavioral dysregulation (i.e., impulsivity), emotion dysregulation, and overall quality of life.

On the other side, we hypothesized differential effectiveness on selected personality dimensions due to the treatment frequency: in particular, a significant greater improvement in GET in mindfulness skills, which are expected to be supported by higher practice.

Since it is more likely that growth curves were heterogeneous, rather than comparable, across subjects (Estes, 1956), consistent with recent research findings (Clarkin et al., 2006; McMain, Guimond, Streiner, Cardish & Links, 2012; Soler et al., 2009; Wilks, Korslund, Harned & Linehan, 2016), we expected that the individual component in the rate of change was consistent for all dimensions assessed.

2.3.2. *Methods*

2.3.2.1. STUDY DESIGN

The current study is a longitudinal study, single-blind, with a two-arm parallel design examining two manualized treatments for patients with Borderline Personality Disorder features, DBT and GET, over one year; the study was designed to assess non-inferiority or equivalence of the programs with regard to primary treatment outcomes. The study was conducted in accordance with the indications from the CONSORT Statement (Moher et al., 2010), with the extension for trials of Nonpharmacologic Treatments (NPTs; Boutron, Moher, Altman, Schulz & Ravaud, 2008). The checklist on the completeness of the information to include when reporting a randomized trial assessing nonpharmacologic treatments is in the supplementary material.

Treatment allocation was done through the minimisation procedure, which is considered methodologically equivalent to randomized trials (Boutron, Altman, Moher, Schulz & Ravaud, 2017; Moher et al., 2010) with specific advantages of making small groups closely similar with regard to relevant variables (Treasure & MacRae, 1998). Subjects were consecutively assigned to GET or DBT balancing groups for age, sex, and clinical profile (i.e., Personality Disorders traits); no random components were used. Treatment groups are expected to be full comparable on demographic, clinical and personality variables.

Both treatments were conducted at the Clinical Psychology and Psychotherapy Unity, San Raffaele Scientific Institute, Milan, Italy, in a day-hospital setting. They were delivered by clinicians with expertise in the treatment of severe Personality Disorders. Participants were enrolled between 2011 and 2016. The protocol was drawn up in observance of the good clinical practice normative, approved by San Raffaele Scientific Institute ethics board as clinical practice for monitoring and evaluation of treatment effectiveness, and all patients provided written informed consent prior to enrollment. Patients received treatment from a mixed health care service provision, both from public and private sources.

Inclusion criteria were a diagnosis of a DSM-IV Personality Disorder (PD), with at least five criteria of a cluster B PDs and three criteria of Borderline Personality Disorder, be 16-50 years of age, dysfunctional behaviors (suicide attempts, self-harm, alcohol or substance abuse, binge eating) in the last three years and at least two episodes of severe self-injury (with or without a suicidal intentionality) in the last year before enrollment. Exclusion criteria were

mental retardation, other acute psychiatric diagnosis in comorbidity (i.e., a DSM-IV diagnosis of a psychotic disorder, mood disorder, or dementia) and a medical condition precluding treatment attendance over one year. Patients with substance dependence or eating disorder were admitted only if they can be considered on remission.

DSM-IV PDs were diagnosed using the Italian version of the *Structured Clinical Interview for DSM-IV axis II Personality Disorders, Version 2.0* (SCID-II; First, Spitzer, Gibbon, Williams & Benjamin, 1994; Maffei et al., 1997), a standardized semi-structured interview assessed by ten trained raters, all doctoral-level clinical psychologists, blind to treatment assignment, in the context of patient routine diagnostic assessment. The study coordinators were not blind to treatment assignment and collected patients' data about past and current psychopathological symptomatology by clinical interviews. Self-report questionnaires completed the baseline assessment, measuring emotional and behavioral dysregulation (i.e., impulsivity), self-directedness, and interpersonal functioning. Then, eligible subjects were consecutively assigned to treatment arms. There were no restrictions on pharmacotherapy.

2.3.2.2. TREATMENT PROGRAMS

As described previously, Dialectical Behavior Therapy (DBT) is a manualized cognitive-behavioral treatment developed by Linehan (1993, 2014) for patients with Borderline Personality Disorder and chronical suicidal or self-harm acts, then implemented for other disorders characterized by emotional and behavioral dysregulation. From a theoretical perspective (Linehan & Wilks, 2015), its fundamentals are behavioral science and dialectic; furthermore, Zen and contemplative practices were integrated into behavioral therapy through mindfulness skills. The main goal of DBT is to regulate behaviors and emotions through practicing effective coping strategies, in order to build a life worth living (Neacsiu, Rizvi, & Linehan, 2010); on the other side, applying a dialectical stance, essential is the concept of radical acceptance of the present moment (Linehan & Wilks, 2015). Along with individual sessions, skills training, preferable supplied in group setting (Andión et al., 2012), aims to teach strategies regarding mindfulness practice, emotional regulation, distress tolerance, and effective interactions with others (Linehan, 2014). Since DBT is conceptualized as occurring in stages, clients in Stage I are committed to eliminate their high-risk dysfunctional conducts and to learn new skills, sufficient to accomplish a reasonable self-control, to overcome inflexible patterns and to achieve fundamental life goals. DBT therapeutic interventions consist of a wide range

of strategies: a core feature is the dynamic dialectical balance of acceptance and change within the whole treatment and within each session, committing patients to treatment's goals and modalities (Linehan, 1993). Up to now, DBT proved its effectiveness both in RCT and not-RCT studies reducing suicide attempts and self-harm, impulsivity, experiential avoidance, feeling of anger, sadness and hopelessness; improvement in emotion processing and expression, general and relational functioning and increased acceptance and self-efficacy were gained (Linehan et al., 2015; McMain et al., 2012; Neacsiu et al., 2014; Soler et al., 2009; Wilks et al., 2016).

Group Experience Therapy (GET) is a manualized psychodynamic-oriented treatment developed by Visintini and his team (Gaj et al., 2016; Visintini, 2017; Visintini et al., 2014) at San Raffaele Scientific Institute, Milan, Italy for Borderline Personality Disorder outpatients, more recently implemented also for young Borderline Personality Disorder inpatients. It is based on the experience of psychiatrists and clinical psychologists trained in psychotherapy of patients with severe PDs, suicidal and self-injurious behaviors, emotional and behavioral dyscontrol; it follows the recommendations of the APA Practice Guidelines on the management of Borderline Personality Disorder (APA, 2001). Group setting is the core element of GET, since it is considered the preferential context for developing, enhancing and sharing effective self-regulation strategies (Andión et al., 2012). Theoretical background of GET is rich and multifaceted. First of all, the psychodynamic theories of groups, with the assumption that groups are fundamental dimensions of life experiencing (e.g., Mcleod & Kettner-Polley, 2004; Yalom & Leszcz, 2005), also routed in the Italian psychoanalytic tradition on group dynamics (e.g., Correale & Nicoletti, 2001; Longo, 1985; Neri, 1998). Secondly, mentalization, which is considered a key strategy for therapists, since they actively encourage a detailed exploration of critical events (i.e., specificity about what happened, in terms of facts, thoughts and feelings) and sustain a mentalizing discourse in group activities (Karterud, 2015a, 2015b). Thirdly, behavioral strategies and protocols for the management of crisis situations (e.g., Beck, Davis & Freeman, 2015; Deacon & Abramowitz, 2004; Wells, 2000). GET is comprised by two phases, the first one has the same target of DBT first stage. Preliminary data showed good effectiveness on emotional and behavioral dysregulation in outpatients, with a quick achievement of more balanced emotional experiences and problem solving skills (Carretta et al., 2015; Roder, Visintini & Maffei, 2017; Visintini et al., 2014).

Both DBT and GET are comprised four modes: highly structured group sessions (DBT skills training vs. GET activities focused on crisis, planning, emotional and bodily activation),

individual psychotherapy, emergency telephone consultations with the individual therapist, and consultation/peer-supervision meetings. The weekly team meetings last for two hours and are devoted to sustain therapists' motivation, to discuss about the progress of patients' treatment and to solve therapeutic impasses.

A brief comparison of treatment programs is listed in **Table 2.3**.

Table 2.3. GET and DBT core features.

Treatment program	**Group Experience Therapy** (GET; Visintini, 2017)	**Dialectical Behavior Therapy** (DBT; Linehan, 1993, 2014)
Target	Suicide attempts and self-harm behaviors, pervasive emotional dysregulation, impulsivity and impairment in planning skills, relational instability	
Theoretical background	Psychodynamic	Cognitive-behavioral
Clinical interventions	Focused on mentalizing and in-session "corrective emotional experiences"	Focused on dialectics, mindfulness and commitment
Modalities of group management	Exploring effective strategies in group setting	Learning pre-defined skills
Group activities (1st phase)	• Mindfulness and body awareness • Emotion recognition through commercial films vision and identification of personal emotions elicited by films • Emotional crisis recognition and management • Planning ahead difficult situations	• Mindfulness • Emotion regulation (recognize and regulate emotions) • Distress tolerance (cope with intense emotions and life suffering) • Interpersonal effectiveness (pursue relevant goals and values in interpersonal contexts)
Treatment frequency (1st phase)	Four group a week, all activities repeated weekly; individual sessions. Overall, 6-7 hours a week	One group a week, modules in sequence; individual sessions. Overall, 3-4 hours a week

2.3.2.3. THERAPISTS

Treatments were delivered by 28 therapists, no overlapping between programs, with at least one year of clinical experience in treating Borderline Personality Disorder patients. Therapists was 17 in GET and 11 in DBT: 2 psychiatrists (one providing GET and one DBT), 6 Psy.D. psychologists (two in GET and four in DBT), 20 clinical psychologists in training for psychotherapy (fourteen and six, respectively) under weekly supervision of experienced clinicians. In DBT, all therapists attended to DBT workshops and intensive training courses; the supervisor (C.M.) had received previously training and certification by Linehan and her team. No significant difference was found for the years of therapists' experience, even if it was higher in the DBT group ($M = 9$, $SD = 11.841$) than in the GET group ($M = 4.12$, $SD = 6.891$), $F_{(1, 26)} = 1.915$, $p = 0.178$. No significant difference was found in the proportion of qualification degrees between treatment groups, $\chi^2_{(2)} = 2.705$, Cramer's $V = 0.311$, $p = .351$. No differences were found between groups for the mean number of patients treated by each clinician (GET: $M = 3.18$, $SD = 2.099$, range 1-7; DBT: $M = 3.73$, $SD = 2.412$, range 1-8), $F_{(1, 26)} = 0.409$, $p = 0.528$.

Psychiatric monitoring was constant for both programs and delivered by the same psychiatrists' team; no one of them delivered psychotherapeutic activities.

2.3.2.4. CLINICAL SAMPLE

A total of 117 subjects were assessed and considered eligible for GET or DBT. However, 22 subjects didn't agree upon general treatments' goals or commitments, thus they didn't begin any therapeutic program. The overall sample was comprised by 95 subjects, assigned consecutively to DBT (41 patients, 43.16%) or GET (54 patients, 56.84%). Over one year, 42 subjects (44.21%) interrupted prematurely their programs: 17 subjects dropped from DBT and 25 from GET. The completers sample was comprised by 53 subjects, 24 in DBT (retention rate of 54.54%) and 29 in GET (retention rate of 57.3%). Patients' flow through the study is shown in the **Figure 2.1**. All allocated subjects were included in the intention-to-treat analysis; additional analyses were run also for the completers' subsample to detect different trends in subjects who were able to follow through their therapeutic programs.

In the intention-to-treat sample, 14 subjects were males (14.7%) and 81 females (85.3%), with a mean age of 26 years ($M = 26.2$, $SD = 7.037$). The mean years of education was 14 years ($M = 13.72$, $SD = 3.263$); the more frequent educational degrees were High School (49 subjects,

51.58%) and Middle School (24 subjects, 25.26%). Fifty subjects (52.63%) were unemployed; the more frequent jobs were office worker (22 subjects, 23.16%) and student (15 subjects, 15.79%). The completers sample was comprised by 53 subjects (55.79% of the full sample), 8 males (15.1%) and 45 females (84.9%), with a mean age of 27 years (M = 26.92, SD = 7.449). Full descriptive statistics of demographic variables of the intention-to-treat sample are listed in **Table 2.4**.

All subjects had at least one PD diagnosis, the mean number of PDs diagnosis was 1.24 for GET (SD = 0.581) and 1.29 for DBT (SD = 0.512), assessed with the *Structured Interview for DSM-IV Axis II Personality Disorders* (SCID-II; First et al., 1994; Maffei et al., 1997). The more frequent diagnosis was Borderline Personality Disorder, assessed for 46 subjects in GET (85.2%) and for 30 subjects in DBT (73.2%), with a mean number of Borderline Personality Disorder traits above 5 in all sample. In the completers sample, the mean number of PDs diagnosis was 1.31 for GET (SD = 0.712) and 1.29 for DBT (SD = 0.55); the more frequent diagnosis was Borderline Personality Disorder, assessed for 25 subjects in GET (86.2%; BDP traits: M = 5.86, SD = 1.663) and for 17 subjects in DBT (70.8%; BDP traits: M = 5.79, SD = 1.817). Clinical variables of the intention-to-treat sample are summarized in **Table 2.5**.

Figure 2.1. CONSORT flow diagram of patients' progress through the study. *Note.* DBT: Dialectical Behavior Therapy; GET: Group Experience Therapy.

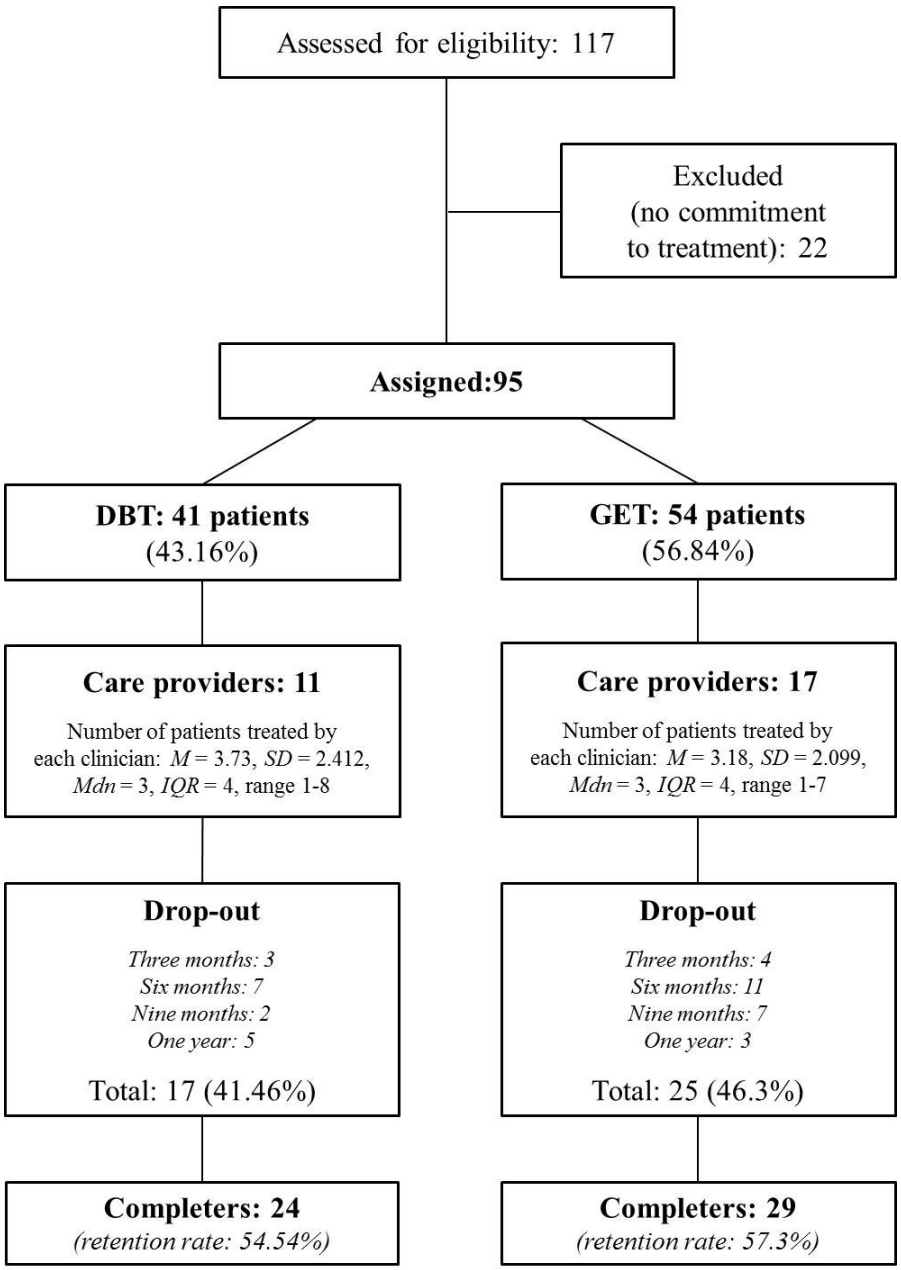


Table 2.4. Demographic variables of the intention-to-treat sample: descriptive statistics.

	Total sample	GET	DBT
Subjects	**95**	**54 (56.84%)**	**41 (43.16%)**
Males	*14 (14.7%)*	*6 (11.1%)*	*8 (19.5%)*
Females	*81 (85.3%)*	*48 (88.9%)*	*33 (80.5%)*
Age (*SD*)	26.2 (7.037)	24.67 (5.443)	28.23 (8.353)
Years of education (*SD*)	13.72 (3.263)	13.74 (2.824)	13.69 (3.856)
Elementary school	*2 (2.11%)*	*0*	*2 (4.88%)*
Middle school	*24 (25.26%)*	*16 (29.63%)*	*8 (19.51%)*
High school	*49 (51.58%)*	*30 (55.56%)*	*19 (46.34%)*
Associate degree	*1 (1.05%)*	*1 (1.85%)*	*0*
University degree	*19(20%)*	*7 (12.96%)*	*12 (29.27%)*
Unemployed	50 (52.63%)	30 (55.56%)	20 (48.78%)
Employed	45 (47.37%)	24 (44.44%)	21 (51.52%)
Student	*15 (15.79%)*	*11 (20.37%)*	*4 (9.76%)*
Workman	*4 (4.21%)*	*2 (3.7%)*	*2 (4.88%)*
Office worker	*22 (23.16%)*	*11 (20.37%)*	*11 (26.83%)*
Manager	*1 (1.05%)*	*0*	*1 (2.44%)*
Freelance professional	*2 (2.11%)*	*0*	*2 (4.88%)*
Housewife	*1 (1.05%)*	*0*	*1 (2.44%)*

Notes. GET: Group Experience Therapy; DBT: Dialectical Behavior Therapy

Table 2.5. Clinical variables at baseline of the intention-to-treat sample: descriptive statistics.

	GET (*N* = 54)		DBT (*N* = 41)	
CLINICAL VARIABLES	*M* (*SD*)		*M* (*SD*)	
Number of PD diagnosis	1.24 (0.581)		1.29 (0.512)	
Hospital admissions lifetime	2.68 (5.359)		3.15 (4.24)	
Hospital admissions last year	3.21 (7.701)		0.88 (0.928)	
AXIS I SYMPTOMS				
Anxiety disorder	2 (3.7%)		3 (7.31%)	
Sleep disorder	2 (3.7%)		2 (4.87%)	
Eating disorder	14 (25.93%)		7 (17.07%)	
Alcohol/substance abuse	9 (16.67%)		11 (26.83%)	
PERSONALITY DISORDERS	Traits *M* (*SD*)	Diagnosis *N* (%)	Traits *M* (*SD*)	Diagnosis *N* (%)
Avoidant	0.69 (1.195)	2 (3.7%)	0.68 (0.96)	-
Dependent	0.81 (1.167)	-	0.88 (1.144)	-
Obsessive-compulsive	0.39 (0.685)	-	0.41 (0.706)	-
Passive-Aggressive	1.02 (1.296)	2 (3.7%)	1.80 (1.631)	7 (17.1%)
Depressive	0.83 (1.27)	2 (3.7%)	0.93 (1.587)	1 (2.4%)
Paranoid	0.50 (0.947)	-	0.29 (0.782)	-
Schizotypal	0.11 (0.42)	-	0.15 (0.573)	-
Schizoid	0.06 (0.302)	-	-	-
Histrionic	1.04 (1.303)	2 (3.7%)	1.12 (1.552)	2 (4.9%)
Narcissistic	1.46 (1.745)	5 (9.3%)	2.51 (2.063)	10 (24.4%)
Borderline	5.87 (1.505)	46 (85.2%)	5.71 (1.952)	30 (73.2%)
Antisocial	0.35 (1.119)	3 (5.6%)	0.17 (0.587)	-
NOS	-	5 (9.3%)	-	3 (7.3%)

Notes. GET: Group Experience Therapy; DBT: Dialectical Behavior Therapy; PD: Personality Disorder

2.3.2.5. MISSING DATA

In order to explore missing data, Little's Tests were run to detect if missing values are randomly distributed across observations (Missing Completely At Random, MCAR). After three months, Little's Test was significant, $\chi^2_{(58)} = 80.282$, $p = .028$, but only in GET, $\chi^2_{(29)} = 47.044$, $p = .018$, and not in DBT, $\chi^2_{(58)} = 57.261$, $p = .503$, thus probably there was a systematic pattern of missingless, at least in GET. At six months, Little's Test was significant in the overall sample, $\chi^2_{(53)} = 72.023$, $p = .042$, but not in the GET group, $\chi^2_{(36)} = 43.917$, $p = .171$, nor in the DBT group, $\chi^2_{(31)} = 41.155$, $p = .105$. At nine months, Little's Test was significant, $\chi^2_{(20)} = 49.078$, $p = .000$, but only in GET, $\chi^2_{(20)} = 35.586$, $p = .017$, and not in DBT, $\chi^2_{(12)} = 12.727$, $p = .389$. After one year, Little's Test was not significant, $\chi^2_{(41)} = 42.620$, $p = .401$, both in GET, $\chi^2_{(16)} = 17.349$, $p = .363$, and in DBT, $\chi^2_{(39)} = 36.283$, $p = .594$.

Considering baseline scores to test for a systematic rather pattern of missingness (Missing At Random, MAR), no significant differences were found between completers and drop-out subjects in all demographic and clinical dimensions assessed (i.e., ps > .05). It could be arguable that missing data are randomly distributed in the DBT group across all observations, and in the GET group at six and twelve months; however, for the GET group at three and six months a more complex pattern emerged and missingless seemed to depend on unobserved variables. The reason for missing values could be related to aspects of personality pathology (e.g., low compliance), the intervention (e.g., severity of the side effects), or both (e.g., an interaction effect). However, variables in our dataset are inadequate predictors of missing values.

Another factor that can generate confusion is the presence of two types of missing data in our dataset: the so-called "intermittently missing" (when subjects missed an assessment intermediate phase) or true "drop out" from the treatment (Mazumdar et al., 2007).

In the intention-to-treat sample, missing data due to premature interruption of treatment were imputed carrying forward the latest observation. In the present study the specification of a model for the missing data with sophisticated statistic techniques goes beyond the actual aims. The method of carrying forward the latest observation has some well-known critic aspects (Moher et al., 2010), but it is useful in keeping a conservative estimate of scores over time since it assumes there will be no further improvement for drop-out subjects (Lane, 2008; Streiner, 2002). Since treatment retention is a primary outcome in psychotherapy research (Moher et al., 2010), in the present study treatment changes were tested even allowing a potential bias of underestimation of mean rate of change, since drop subjects reduced the mean level of change.

2.3.2.6. OUTCOME MEASURES

Outcome measures were assessed regularly every three months over one year, with overall five surveys for each subject. In order to avoid systematic differences between completers and drop-out, all patients enrolled in statistical analysis filled the first year of treatment. Patients completing one year of treatment did not terminate their program, since all of them completed just the first phase of therapy, both in DBT and in GET: thus, outcome measures concerned treatment targets of the first stage. There was no paid reward for patients' assessment.

The primary outcome measures were frequency and severity of suicidal and nonsuicidal self-harmful behaviors. Suicide attempts were reported by individual therapists, while NSSI were assessed by the *Self-Harm Inventory-22* (SHI-22; Sansone, Wiederman & Sansone, 1998). SHI-22 is a self-report questionnaire of 22-items that assessed the presence and the frequencies of deliberately self-injurious behaviors, both direct (i.e., cutting, burning, hitting, scratching) and indirect (i.e., lost relationships or jobs on purpose).

Recent research findings demonstrated the complexity of affective and cognitive functioning in Borderline Personality Disorder, suggesting that the interplay between specific aspects of cognitive (i.e., attention, effortful control, impulsivity regulation) and emotional processing (i.e., emotion regulation) were related to self-harm (Gratz, Bardeen, Levy, Dixon-Gordon & Tull, 2015) and psychological functioning (Preti, Richetin, Suttora & Pisani, 2016). Therefore, in the present study emotional, behavioral and cognitive functioning were taken into account as secondary outcome measures. Core features of personality functioning of Borderline Personality Disorder was referred to DSM-5 (APA, 2013) trait-level description of disturbances in self and interpersonal areas: negative affectivity was assesses by the *Difficulties in Emotion Regulation Scale* (DERS; Gratz & Roemer, 2004), while impulsivity and risk taking were assessed by the *Barratt Impulsiveness Scale-11* (BIS-11; Patton, Stanford & Barratt, 1995). Considering the critical role in Borderline Personality Disorder patients of mindfulness skills and attitude (Cavicchioli, Rugi & Maffei, 2015; Scheibner, Spengler, Kanske, Roepke & Bermpohl, 2016; Wupperman, Neumann, Whitman, & Axelrod, 2009), these dimensions was assessed by the subscales of the *Five Facet Mindfulness Questionnaire* (FFMQ; Baer, Smith, Hopkins, Krietemeyer & Toney, 2006). Finally, quality of live aspects was investigated by the *World Health Organization WHoQoL-BREF* (The WHoQoL Group, 1998).

2.3.2.7. STATISTICAL ANALYSIS

To test differences between groups in demographic and clinical variables at baseline were used One-way ANOVA for continuous variables, and Chi Square Test for categorical variables.

Within the General Linear Model, Hierarchical Linear Model (HLM; Raudenbush & Bryk, 2002; West, Ryu, Kwok & Cham, 2011), also known as mixed-effect model, was used to test changes in outcome variables. HLM is flexible approach for analyzing repeated measures in nested longitudinal data, tolerating missing values. Relevant to the present study is the treatment of the time predictor as a continuous variable, instead of a discrete factor, which increases the statistical power for detecting growth effects (Muthén & Curran, 1997; Singer & Willett, 2003) and makes HLM best suitable for clinical studies when a cumulative response to the therapeutic intervention over time sessions is expected (e.g., Wilks et al., 2016).

Since in longitudinal study growth curves were often heterogeneous between subjects (Estes, 1956), analysis requires statistical procedures able to disentangle between-subjects factors, within-subjects effects and aspects of individual change, such as initial levels of symptomatology and rate of change, separating them from random error variance designs (Lenzenweger, Johnson, & Willett, 2004). A specific advantage of HLM is the fact that polynomial trends in the variance-covariance structures can be estimated for each participant in order to shape individual trends over time. This approach is referred to as individual growth model, that is, regression analysis where intercepts, slopes, or both can be treated as random effects (West et al., 2011).

In the present study three models were compared. Primary aims were to determine whether there were changes in outcome variables over one year of treatment; additionally, we investigated whether treatment groups had differential effects on target variables, or whether the effectiveness of GET and DBT was overlapping. Thus, we examined the fixed effects of time and treatment program, also computing the interaction effect Time*Treatment; time was considered as the continuous repeated within-subjects variable, while treatment program as a between-subjects factor.

The secondary aim was to investigate the growth trajectories of outcome variables estimating random effect parameters with subjects as clustering variables. For each dimension, two growth models were built. In the first one, the intercept was added as a random parameter, allowing a separate intercept for each subject. In the second model, the linear effect of time was added as random parameter to model a random slope. To compute the correlation between

random intercept and random slope, we specify an unstructured covariance matrix, the more flexible option in HLM to allow every random effects source of variance and covariance to be estimated independently.

In all models age and sex were added as covariates; moreover, for each dimension the respective baseline score was added as covariate. The estimator used was the Restricted Maximum Likelihood (REML). Parameters were progressively added one at a time; since models for each outcome variable were nested (i.e., they had the same fixed factors), the appropriate covariance structure was determined with Deviance Test (Raudenbush & Bryk, 2002; Spiegelhalter, Best, Carlin & Linde, 2014) to determine whether including covariates caused meaningful changes in the findings of the primary models.

Analysis were conducted in the full sample, i.e. the intention-to-treat sample. In order to detach specific treatment effects and to overcome the underestimation bias due to missing data, the same analysis procedure was run additionally for subjects who complete the first year of treatment, i.e. the completers' subsample.

All tests were performed using a two-sided approximation; since multiple comparisons were performed, Bonferroni correction was applied in order to adjust the significance level. All analyses were performed using SPSS 19.0 software with the MIXED procedure for HLM.

2.3.3. ***Results***

2.3.3.1. BASELINE PROFILE

No differences were found between GET and DBT groups for demographic, demographic variables, personality profile, clinical and target variables at baseline (i.e., *p*s > .05). Considering baseline scores, there were no significant differences between completers and drop-out subjects (i.e., *p*s > .05). A trend to significance was found for age in the intention-to-treat sample, which was slightly lower in GET (M = 24.67, SD = 5.443) than in DBT (M = 28.22, SD = 8.353), $F_{(1, 93)} = 6.273$, $p < .05$. The same trend for age was found in the completers subgroup (GET: M = 24.9, SD = 5.273; DBT: M = 29.38, SD = 8.953), $F_{(1, 51)} = 5.122$, $p < .05$.

Table 2.7. Target variables: descriptive statistics and rates of subjects at the clinically significant change (CSC) levels for time surveys in the intention-to-treat sample. CSC percentages are displayed also for the completers' subsample.

		Treatment programs									
		GET					DBT				
		Baseline	3 months	6 months	9 months	One year	Baseline	3 months	6 months	9 months	One year
Suicide attempts	*M*	1.26	0.41	0.38	0.38	0.27	1.86	0.45	0.46	0.39	0.37
	SD	1.536	.638	.565	.599	.528	2.440	.677	.711	.666	.623
SHI Direct self-harm	*M*	4.35	2.65	2.44	2.12	1.81	4.43	3.08	2.56	2.17	2.15
	SD	2.581	2.198	2.500	2.398	2.232	1.923	2.347	2.203	2.167	2.186
SHI Indirect self-harm	*M*	6.58	4.20	3.65	3.13	2.67	6.73	4.70	4.78	3.78	3.85
	SD	4.083	2.987	3.360	3.068	2.826	3.246	3.575	2.988	3.174	3.475
SHI Total (cut-off: 5)	*M*	10.38	6.84	6.10	5.25	4.48	11.16	7.78	7.34	5.95	6.00
	SD	4.928	4.536	5.337	4.942	4.595	4.259	5.289	4.492	4.868	5.138
	CSC[1]		***33.3***	***46.3***	***57.4***	***59.3***		***34.1***	***36.6***	***53.7***	***51.2***
	CSC[2]		***44.8***	***58.6***	***72.4***	***75.9***		***33.3***	***37.5***	***66.7***	***62.5***
DERS Total	*M*	126.74	114.25	107.57	106.56	101.02	135.13	120.78	117.98	112.05	107.85
	SD	32.053	26.027	35.479	33.066	33.118	28.289	31.107	27.814	33.049	33.651
	CSC[1]		***25.9***	***38.9***	***46.3***	***46.3***		***19.5***	***29.3***	***41.5***	***43.9***
	CSC[2]		***44.8***	***51.7***	***65.5***	***65.5***		***37.5***	***58.3***	***58.3***	***62.5***
BIS-11 Total	*M*	75.02	74.71	72.69	69.83	69.38	74.41	70.97	70.46	68.00	70.31
	SD	9.822	9.648	11.219	10.783	12.114	11.937	11.484	11.548	11.136	12.280
	CSC[1]		***22.2***	***35.2***	***44.4***	***53.7***		***29.3***	***39***	***36.6***	***36.6***
	CSC[2]		***24.1***	***34.5***	***51.7***	***62.1***		***41.7***	***50***	***41.7***	***37.5***
FFMQ Observe	*M*	24.87	25.00	25.07	25.98	25.79	23.39	20.22	21.97	21.66	22.10
	SD	6.261	5.908	6.840	5.701	5.871	6.356	6.235	6.494	6.014	6.224
	CSC[1]		***33.3***	***37***	***44.4***	***42.6***		***22***	***22***	***19.5***	***22***
	CSC[2]		***31***	***31***	***44.8***	***41.4***		***12.5***	***16.7***	***8.3***	***12.5***
FFMQ Describe	*M*	24.55	24.88	25.27	26.17	26.10	22.25	22.52	23.66	24.10	24.41
	SD	6.746	6.278	7.027	6.130	6.396	6.769	5.734	5.948	5.960	5.907
	CSC[1]		***27.8***	***38.9***	***48.1***	***38.9***		***14.6***	***24.4***	***24.4***	***29.3***
	CSC[2]		***24.1***	***37.9***	***51.7***	***34.5***		***8.3***	***16.7***	***20.8***	***29.2***
FFMQ Acting with awareness	*M*	23.06	24.32	24.02	25.28	25.42	20.71	21.48	22.48	23.14	24.17
	SD	6.377	6.295	6.662	6.971	6.940	6.235	5.402	7.074	6.626	6.887
	CSC[1]		***25.9***	***31.5***	***37***	***40.7***		***17.1***	***26.8***	***26.8***	***31.7***
	CSC[2]		***20.7***	***27.6***	***41.4***	***48.3***		***12.5***	***20.8***	***25***	***33.3***
FFMQ No judge	*M*	24.13	23.00	22.47	23.36	24.04	21.00	21.44	21.79	23.24	24.38
	SD	7.494	8.228	8.593	7.367	7.287	7.582	7.511	7.476	7.863	8.407
	CSC[1]		***20.4***	***25.9***	***29.6***	***31.5***		***19.5***	***26.8***	***34.1***	***36.6***
	CSC[2]		***17.2***	***27.6***	***37.9***	***48.3***		***16.7***	***16.7***	***33.3***	***37.5***
FFMQ No reactivity	*M*	14.34	15.83	17.33	18.45	19.42	13.25	14.89	16.66	16.97	16.55
	SD	3.755	4.893	6.537	6.111	6.510	4.097	5.064	6.014	5.949	6.577
	CSC[1]		***40.7***	***46.3***	***57.4***	***57.4***		***24.4***	***36.6***	***41.5***	***31.7***
	CSC[2]		***31***	***51.7***	***55.2***	***62.1***		***20.8***	***33.3***	***45.8***	***29.2***
WHOQoL Physical health	*M*	11.59	12.21	12.48	12.67	13.17	10.25	11.28	11.86	12.07	12.00
	SD	2.556	2.665	3.195	3.186	2.714	2.611	2.408	2.661	2.528	2.830
	CSC[1]		***33.3***	***37***	***44.4***	***46.3***		***17.1***	***29.3***	***29.3***	***29.3***
	CSC[2]		***41.4***	***41.4***	***51.7***	***55.2***		***12.5***	***20.8***	***41.7***	***41.7***
WHOQoL Psychological health	*M*	8.12	8.84	9.71	9.89	9.99	7.07	8.23	8.87	9.01	9.16
	SD	2.885	3.015	3.643	3.464	3.504	2.056	2.859	3.024	3.200	3.377
	CSC[1]		***18.5***	***33.3***	***29.6***	***33.3***		***19.5***	***22***	***26.8***	***31.7***
	CSC[2]		***20.7***	***41.4***	***37.9***	***44.8***		***16.7***	***16.7***	***25***	***33.3***
WHOQoL Social relationships	*M*	9.71	10.88	11.27	11.33	11.66	9.90	10.60	11.14	11.52	11.52
	SD	3.334	3.475	3.510	3.346	3.318	3.088	3.338	3.049	3.215	3.273
	CSC[1]		***22.2***	***29.6***	***29.6***	***38.9***		***26.8***	***29.3***	***39***	***34.1***
	CSC[2]		***27.6***	***34.5***	***34.5***	***51.7***		***33.3***	***29.2***	***45.8***	***37.5***
WHOQoL Environment	*M*	11.92	12.17	12.54	12.73	12.67	11.47	12.03	12.01	12.07	12.26
	SD	2.484	2.472	2.366	2.300	2.204	1.976	2.233	2.331	2.643	2.745
	CSC[1]		***90.7***	***94.4***	***90.7***	***94.4***		***92.7***	***85.4***	***92.7***	***92.7***
	CSC[2]		***96.6***	***100***	***93.1***	***100***		***95.8***	***91.7***	***91.7***	***95.8***

Notes. GET: Group Experience Therapy; DBT: Dialectical Behavior Therapy; CSC: percentage of subjects reaching a Clinically Significant Change, CSC[1] in the intention-to-treat sample ($N_{GET} = 54$; $N_{DBT} = 41$), CSC[2] in the completers' subsample ($N_{GET} = 29$; $N_{DBT} = 24$); SHI: Self-Harm Inventory; DERS: Difficulties in Emotion Regulation Scale; BIS-11: Barratt Impulsiveness Scale – 11; FFMQ: Five Facet Mindfulness Scale; WHOQoL: World Health Organization Quality of Life BREF

Table 2.8. Hierarchical Linear Models for outcome variables in the intention-to-treat sample: fixed effects estimates (significant predictors in bold type), random variance estimates and information criteria. Only results from best fitting models with a significant main effect of time were reported.

Variables	Estimates of fixed effects					Estimates of variance parameters					-2 RLL
	Parameters	β	SE	*t*	*p*	Parameters	s^2	SE	Wald *Z*	*p*	
PRIMARY OUTCOME MEASURES											
Suicide	**Time**	**-0.07**	**0.021**	**-3.219**	**.002**	Intercept	1.64	0.32	5.14	.000	1192.684
attempts	Treatment	0.44	0.309	1.418	.16	Time	0.01	0.003	4.243	.000	
SHI Direct	**Time**	**-0.2**	**0.033**	**-5.884**	**.000**	Intercept	3.49	0.718	4.854	.000	1705,786
self-harm	Treatment	0.23	0.469	0.5	.618	Time	0.032	0.008	3.847	.000	
SHI Indirect	**Time**	**-0.3**	**0.05**	**-6.037**	**.000**	Intercept	7.54	1.607	4.688	.000	2055.2
Self-harm	Treatment	0.28	0.701	0.394	.695	Time	0.07	0.019	3.646	.000	
SECONDARY OUTCOME MEASURES											
DERS	**Time**	**-1.99**	**0.426**	**-4.678**	**.000**	Intercept	448.61	95.596	4.693	.000	4300.791
Total score	**Treatment**	7.81	5.269	1.483	.142	Time	6.02	1.438	4.185	.000	
BIS-11	**Time**	**-0.56**	**0.154**	**-3.614**	**.001**	Intercept	67.41	14.067	4.792	.000	3017.433
Total score	Treatment	-2.22	2.025	-1.096	.276	Time	0.74	0.189	3.925	.000	
FFMQ	**Time**	**0.16**	**0.055**	**2.945**	**.004**	Intercept	33.41	6.305	5.3	.000	1974.7
Describe	Treatment	-1.9	1.472	-1.293	.2	Time	0.06	0.025	2.503	.012	
FFMQ Acting	**Time**	**0.19**	**0.081**	**2.393**	**0.019**	Intercept	20.94	4.934	4.245	.000	2145.963
with awareness	Treatment	-2.56	1.291	-1.981	.051	Time	0.15	0.052	2.904	.004	
FFMQ	**Time**	**0.41**	**0.086**	**4.831**	**.000**	Intercept	10.58	2.771	3.818	.000	2039.893
No reactivity	Treatment	-0.66	0.968	-0.683	.497	Time	0.23	0.057	4.052	.000	
WHOQoL	**Time**	**0.12**	**0.034**	**3.254**	**.002**	Intercept	4.38	0.995	4.405	.000	1508.356
Physical health	Treatment	**-1.18**	**0.585**	**-2.023**	**0.047**	Time	0.03	0.01	2.996	.003	
WHOQoL	**Time**	**0.14**	**0.034**	**4.244**	**.000**	Intercept	4.98	1.103	4.518	.000	1524.153
Psychological health	Treatment	-0.89	0.616	-1.45	0.152	Time	0.02	0.009	2.571	.01	
WHOQoL Social	**Time**	**0.15**	**0.043**	**3.51**	**.001**	Intercept	7.32	1.601	4.571	.000	1635.504
relationships	Treatment	0..73	0.742	0.098	.922	Time	0.04	0.014	3.06	.002	
WHOQoL	**Time**	**0.07**	**0.021**	**3.323**	**.001**	Intercept	3.6	0.672	5.354	.000	1351.25
Environment	Treatment	-0.4	0.522	-0.773	.441						

Notes. RLL: Restricted Log-Likelihood; SHI: Self-Harm Inventory; DERS: Difficulties in Emotion Regulation Scale; BIS-11: Barratt Impulsiveness Scale – 11; FFMQ: Five Facet Mindfulness Scale; WHOQoL: World Health Organization Quality of Life BREF

2.3.3.2. TREATMENT OUTCOME

Descriptive statistics for outcome variables are listed in **Table 2.7**. We calculated clinically significant change (CSC; Jacobson & Truax, 1991) to better understand the treatment effects on the outcome variables, both in the intention-to-treat sample and in the completers' subsample. CSC was defined as reaching a level of functioning after treatment that is closer to the mean of the non-patient population than to the patient sample. Normative data were obtained from standardized norms or studies using large samples; Italian studies were preferred when available. **Table 2.7** listed also the percentage of recovered patients in the two treatment groups for each time point, both in the full sample and in the completers' subsample.

2.3.3.3. LINEAR MIXED MODELS

For each dimension, we tested first a model with fixed effects, time and treatment program, and their interaction, Time*Treatment program. Then we added intercept as random component, considering subjects as clustering variable; in the third model, we add also random slopes for time. Deviance testing was used for the significance of the improvement in fitting data. Best fitting models in the intention-to-treat sample are described in **Table 2.8**; coefficients for fixed effects and estimate of variance of random parameters are listed.

With regard to primary outcome measures, the number of suicide attempts decreased significantly during treatment, $F_{(1, 81.316)} = 10.36$, $p < .005$; the effect of treatment condition was not significant, $F_{(1, 80.504)} = 2.01$, $p = .16$, nor was the interaction Time*Treatment, $F_{(1, 81.586)} = 1.378$, $p = .244$. The variance of random intercepts was significantly different from zero, $s^2 = 1.64$, $SE = 0.032$, $p < .001$, and also the random slope was significant, $s^2 = 0.01$, $SE = 0.003$, $p < .001$. The covariance between random components was negative and significant, $cov_{(2,1)} = -0.15$, $SE = 0.032$, $p < .001$, thus the higher is the intercept, the weaker is expected to be the effect of time on the dependent variable.

In the completers' sample the same trend was found, with a main effect of time, $F_{(1, 38.768)} = 7.97$, $p < .01$, significant random intercept, $s^2 = 1.44$, $SE = 0.392$, $p < .001$, and significant random slope, $s^2 = 0.01$, $SE = 0.005$, $p < .001$. The covariance between random effects was negative and significant, $cov_{(2,1)} = -0.13$, $SE = 0.04$, $p = .001$. Adding random components significantly improved the model's fit over the model with only fixed effects in the completers' sample, $\chi^2_{(3)} = 110{,}728$, $p < .001$.

For SHI Direct self-harm, subjects changed over time, $F_{(1, 80.219)} = 34.618$, $p < .001$. No significant differences were found between treatment groups, $F_{(1, 81.768)} = 0.25$, $p = .618$, neither the interaction between fixed effects was significant, $F_{(1, 80.531)} = 0.174$, $p = .678$. The variance of random intercept was significant, $s^2 = 3.49$, $SE = 0.718$, $p < .001$, and the random slope was also significant, $s^2 = 0.03$, $SE = 0.008$, $p < .001$. The covariance between random effects was negative and slightly significant, $cov_{(2,1)} = -1.12$, $SE = 0.061$, $p < .05$. Adding random effects significantly improved the model's fit over the model with only fixed effects, $\chi^2_{(3)} = 202{,}859$, $p < .001$.

In the completers' subsample, SHI Direct self-harm showed a significant main effect of time, $F_{(1, 45.559)} = 23.249$, $p < .001$; random intercept was significant, $s^2 = 2.70$, $SE = 0.849$, $p <$

.005, and also random slope, s^2 = 0.02, *SE* = 0.011, $p < .05$. The covariance between random effects was negative, although not significant, $cov_{(2,1)}$ = -0.09, *SE* = 0.076, $p = .258$.

SHI Indirect self-harm reduced significantly during treatment, $F_{(1, 80.847)} = 36.44$, $p < .001$, while the main effect of treatment program was not significant, $F_{(1, 81.784)} = 0.155$, $p = .695$, and the interaction Time*Treatment program was not significant, $F_{(1, 80.794)} = 1.498$, $p = .224$. The variance of random intercept was significant, $s^2 = 7.54$, *SE* = 1.607, $p < .001$, and random slope was significant, $s^2 = 0.07$, *SE* = 0.019, $p < .001$. The covariance between random effects was negative and marginally significant, $cov_{(2,1)}$ = -0.35, *SE* = 0.143, $p < .05$. The model with random intercept and slope showed a significant improvement of fit over the model with only fixed effects, $\chi^2_{(3)} = 157{,}618$, $p < .001$.

In the completers subsample, there was a main effect of time, $F_{(1, 197.942)} = 47.941$, $p < .001$, and the variance of random intercept was significant, $s^2 = 6.34$, *SE* = 1.544, $p < .001$, but results didn't support a model with random slopes.

For the emotion dysregulation assessed with DERS total score), in the intention-to-treat sample a significant main effect was found for time, $F_{(1, 90.029)} = 21.884$, $p < .001$, but no differences were found between treatment groups, $F_{(1, 91.040)} = 2.199$, $p = .142$. The variance of random intercepts was significantly different from zero, $s^2 = 448.61$, *SE* = 95.596, $p < .001$, and also the variance of the random effect of time, $s^2 = 6.02$, *SE* = 1.438, $p < .001$. The covariance between random effects was negative, but nonsignificant, $cov_{(2,1)}$ = -6.59, *SE* = 8.823, $p = .455$. Adding random effects significantly improved the fit of the model over only fixed effects, $\chi^2_{(3)} = 247.62$, $p < .001$.

In the completers' subsample, for DERS total score a main effect of time was found, $F_{(1, 46.995)} = 27.622$, $p < .001$. Also, a main effect of treatment program emerged, since subjects who completed GET program gained better improvement over DBT, $F_{(1, 48.423)} = 5.212$, $p < .05$, even if the interaction Time*Treatment program was not significant, $F_{(1, 48.008)} = 0.071$, $p = .792$. The variance of random intercept was significant, $s^2 = 448.61$, *SE* = 95.596, $p < .001$, and also random slopes, $s^2 = 6.02$, *SE* = 1.438, $p < .001$. Modeling random effects significantly improved the fit of the model over only fixed effects, $\chi^2_{(3)} = 123.863$, $p < .001$.

Considering DERS subscales, in the intention-to-treat sample, results were homogeneous for all them, with the main effect of time, *p*s < .005, random intercepts, *p*s < .001, and random slopes, *p*s < .001.

In the completers' subsample a significant reduction over time was confirmed for all facets, *p*s < .005, and also significant random intercept, *p*s < .005. The main effect of treatment program was detected only for Strategies, $F_{(1, 48.681)} = 7.374$, $p < .01$, Goals, $F_{(1, 48.574)} = 6.468$, $p < .05$, Non acceptance, $F_{(1, 49.133)} = 5.892$, $p < .05$, and Impulse, $F_{(1, 91.123)} = 5.749$, $p < .05$. Random slopes were significant for Goals, $s^2 = 0.2$, $SE = 0.063$, Wald $Z = 3.234$, $p = .001$, Non acceptance, $s^2 = 0.23$, $SE = 0.092$, Wald $Z = 2.457$, $p < .05$, Awareness, $s^2 = 0.1$, $SE = 0.043$, Wald $Z = 2.402$, $p < .05$, and Clarity, $s^2 = 0.31$, $SE = 0.134$, Wald $Z = 2.308$, $p < .05$.

Results indicated that BIS-11 Total scores showed a significant reduction over time, $F_{(1, 85.603)} = 13.062$, $p = .001$; no differences were found between treatment groups, $F_{(1, 91.372)} = 1.2$, $p = .276$. The variance of random components was significant, both for intercept, $s^2 = 67.41$, $SE = 1.252$, $p < .001$, and for slope, $s^2 = 0.74$, $SE = 0.189$, $p < .001$. The covariance between random parameters was negative, but nonsignificant, $cov_{(2,1)} = -1.86$, $SE = 1.252$, $p = .138$. Adding both random intercepts and random slopes significantly increased model's fit, $\chi^2_{(3)} = 190.998$, $p < .001$.

In the completers' subsample there were a main effect of time, $F_{(1, 46.159)} = 8.466$, $p < .005$, significant random intercept, $s^2 = 72.69$, $SE = 22.36$, $p < .005$, and significant random slope, $s^2 = 0.67$, $SE = 0.277$, $p < .05$; the covariance between random parameters was negative, $cov_{(2,1)} = -3.336$, $SE = 0.277$, $p = .102$.

With regard to mindfulness dimensions, in the intention-to-treat sample there was a nonsignificant effect of time for FFMQ Observe, $F_{(1, 69.907)} = 3.156$, $p = .08$, neither there was a main effect of treatment group, $F_{(1, 71.497)} = 3.373$, $p = .07$. Data support a model with only random components, intercept, $s^2 = 27.69$, $SE = 5.628$, $p < .001$, and slope, $s^2 = 0.11$, $SE = 0.037$, $p < .005$; the covariance between random parameters was negative, $cov_{(2,1)} = -0.44$, $SE = 0.347$, $p = .202$. Also in the completers' sample FFMQ Observe didn't change over time, $F_{(1, 142.95)} = 1.847$, $p = .176$; results suggested a model with random intercepts, $s^2 = 17.96$, $SE = 4.843$, $p < .001$.

For FFMQ No judge, in the intention-to-treat sample a significant effect of time was not found, $F_{(1, 77.778)} = 0.752$, $p = .389$, nor it was detected in the completers' sample, $F_{(1, 36.237)} = 1.327$, $p = .257$. Neither was a main effect of treatment group in the full sample, $F_{(1, 72.689)} = 3.79$, $p = .055$. Intention-to-treat analysis showed that the variance of random intercept was significant, $s^2 = 26.85$, $SE = 5.9$, $p < .001$, and also the variance of random slope, $s^2 = 0.35$, $SE = 0.086$, $p < .001$; the covariance between random parameters was negative, $cov_{(2,1)} = -0.63$, SE

= 0.634, p = .319. In the completers' subsample data confirmed to support only a model with random intercepts, s^2 = 32.36, SE = 11.501, p = .005, and random slopes, s^2 = 0.29, SE = 0.141, p < .05.

For FFMQ Describe, considering only fixed factors, in the intention-to-treat sample there were no significant effects, nor for time, $F_{(1, 353)}$ = 2.582, p = .109, nor for treatment group, $F_{(1, 353)}$ = 3.774, p = .053. However, adding random effects, the model became more sensitive and a significant improvement over time was found, $F_{(1, 68.803)}$ = 8.67, p < .005; differences between programs remained nonsignificant, $F_{(1, 71.892)}$ = 1.672, p = .2. Random intercept was significant, s^2 = 33.41, SE = 6.305, p < .001, and also random slope, s^2 = 0.06, SE = 0.025, p < .05; the covariance between random effects was negative, $cov_{(2,1)}$ = -0.36, SE = 0.295, p = .226. Adding random effects improved model's fit, $\chi^2_{(3)}$ = 346.684, p < .001. In the completers' subsample a significant main effect of time, $F_{(1, 140.534)}$ = 11.106, p = .001, and a significant random intercept, s^2 = 16.62, SE = 4.67, p < .001, were found.

For FFMQ Acting with awareness in the full sample the model with only fixed effects didn't detach changes over time, $F_{(1, 353)}$ = 3.632, p = .058, but differences between treatment programs, $F_{(1, 353)}$ = 5.015, p < .05. However, adding random effects, there were a significant main effects of time, $F_{(1, 69.662)}$ = 5.728, p < .05, no differences between groups, $F_{(1, 69.662)}$ = 5.728, p = .019, significant random intercept, s^2 = 20.94, SE = 4.934, p < .001, and significant random slope, s^2 = 0.15, SE = 0.052, p < .005. The covariance between random effects was positive, $cov_{(2,1)}$ = 0.1, SE = 0.368, p = .783. Random effects significantly improved model's fit, $\chi^2_{(3)}$ = 205.502, p < .001.

In the completers' subsample there were significant main effects of time, $F_{(1, 141.356)}$ = 9.317, p < .005, and treatment program, $F_{(1, 69.203)}$ = 6.159, p < .05, while the interaction was not significant, $F_{(1, 142.669)}$ = 2.723, p = .101. Results suggested to considered also random intercepts, s^2 = 12.71, SE = 4.05, p < .005.

In the intention-to-treat sample there was a significant effect of time for FFMQ No Reactivity, $F_{(1, 70.582)}$ = 23.336, p < .001, while differences between groups were not significant, $F_{(1, 71.67)}$ = 0.466, p = .497. Random components were significant, intercept, s^2 = 10.58, SE = 2.771, p < .001, and slope, s^2 = 0.23, SE = 0.057, p < .001; their covariance was negative, $cov_{(2,1)}$ = -0.35, SE = 0.291, p = .904. Results suggested to considered also random effects, $\chi^2_{(3)}$ = 206.81, p < .001. In the completers' sample FFMQ No reactivity showed a significant main effect of time, $F_{(1, 35.197)}$ = 17.486, p < .001, and random slope, s^2 = 0.18, SE = 0.074, p < .05.

With regard to quality of life, a main effect of time was found in all WHOQoL subscales both in the intention-to-treat sample and for the completers: Physical Health, respectively $F_{(1, 68.522)} = 10.588$, $p < .005$ and $F_{(1, 153.018)} = 16.572$, $p < .001$, Psychological Health, respectively $F_{(1, 68.338)} = 18.015$, $p < .001$ and $F_{(1, 152.961)} = 21.199$, $p < .001$, Social relationship, respectively $F_{(1, 68.292)} = 12.317$, $p < .005$ and $F_{(1, 37.161)} = 10.173$, $p < .005$, and Environment, respectively $F_{(1, 276.258)} = 11.044$, $p < .005$ and $F_{(1, 152.766)} = 6.549$, $p < .05$. Only for WHOQoL Physical health the effect of treatment condition was slightly significant in the full sample, $F_{(1, 9.338)} = 4.091$, $p < .05$, but not significant in the completers' sample, $F_{(1, 57.187)} = 2.161$, $p = .147$; its interaction with Time was not significant, nor in the full sample, $F_{(1, 68.673)} = 0.449$, $p = .505$, nor for the completers, $F_{(1, 152.989)} = 0.042$, $p = .838$.

Both the intention-to-treat sample and in the completers' subsample random intercepts were significant for all dimensions: Physical Health, respectively $s^2 = 4.38$, $SE = 0.995$, $p < .001$ and $s^2 = 4.75$, $SE = 1.27$, $p < .001$, Psychological Health, respectively $s^2 = 4.98$, $SE = 1.103$, $p < .001$ and $s^2 = 8.74$, $SE = 2.175$, $p < .001$, Social relationship, respectively $s^2 = 7.32$, $SE = 1.601$, $p < .001$ and $s^2 = 9.65$, $SE = 2.924$, $p = .001$, and Environment, respectively $s^2 = 3.9$, $SE = 0.672$, $p < .001$ and $s^2 = 2.68$, $SE = 0.729$, $p < .001$.

For WHOQoL Social relationships results suggested to add random slopes, both in the intention-to-treat sample, $s^2 = 0.04$, $SE = 0.014$, $p < .005$, and in the completers' subsample, $s^2 = 0.05$, $SE = 0.024$, $p < .05$. Only in the intention-to-treat sample, for WHOQoL Physical health and Psychological health random slope was significant, respectively $s^2 = 0.03$, $SE = 0.01$, $p < .005$, and $s^2 = 0.02$, $SE = 0.009$, $p < .05$; for WHOQoL Psychological health the covariance between random components was positive, $cov_{(2,1)} = 0.141$, $SE = 0.07$, $p < .05$.

In the full sample considering random effects significantly improved the fit over models with only fixed components: Physical Health, $\chi^2_{(3)} = 181.799$, $p < .001$, Psychological Health, $\chi^2_{(3)} = 279.259$, $p < .001$, Social relationship, $\chi^2_{(3)} = 181.353$, $p < .001$, and Environment, $\chi^2_{(1)} = 222.702$, $p < .001$.

2.3.4. *Discussion*

Results showed significant changes in target variables in both treatment programs over one year, supporting the effectiveness of DBT and GET. Results were consistent with previous findings on DBT and also with preliminary data of our group in outpatients (Carretta et al., 2015; Roder et al., 2017; Visintini et al., 2014). For the most variables, even if GET and DBT differed from a theoretical perspective and from the type of clinical interventions, differences between them were substantial only for few dimensions and their therapeutic actions are overlapping on target variables.

HLM with random intercept models allowed to take into account subject-level, determining that individual scores in all variables significantly deviating from the mean intercept for each treatment group. Some variables, also, showed different rates of change for different subjects, that is, random slopes. In other words, consistent with literature on PDs (Lenzenweger et al., 2004) and on Borderline Personality Disorder structured psychotherapies (McMain et al., 2012; Soler et al., 2009; Wilks et al., 2016), in our study subjects differed in the degree of change and in their response to treatment, and this confirms the necessity of computing individual regression lines to model changes during treatment. Our results are in line with the current perspectives on personality disorder diagnosis, such as the DSM-5 alternative model (APA, 2013), which suggested to focus on psychological functioning as defined by personality traits. Subsequent research should assess such individual factors that could account for different change trajectories on primary and secondary treatment targets, i.e. suicide attempts and self-harm, aggressive behaviors, retention rate/drop-out, and attendance.

A main target of both treatment program is replace suicide attempts and self-harmful behaviors as dysfunctional coping strategies with more effective skills. Direct self-harm reduced in both groups, also for subjects who did not complete their treatment programs. Along with structured treatment of Borderline Personality Disorder (Stoffers et al., 2012), our results confirmed that, over one year, DBT and GET have a significant effect on suicide and NSSI, without differences between programs.

A first specificity of mechanisms of action in GET and DBT could be assumed in the use of mindfulness. Mindfulness is a complex construct consisted of two components (Dryden & Still, 2006): focus attention on purpose towards present internal and/or external experiences, and practicing this in an open and accepting way. Mindfulness capacities are relevant to patients

with Borderline Personality Disorder symptomatology (Cavicchioli et al., 2015) and also with suicidal ideation (Shorey, Elmquist, Wolford-Clevenger, Gawrysiak, Anderson & Stuart, 2016). The effects of mindfulness practice cover a wide range of dimensions: cognitive control, bodily awareness, emotional reactivity, reappraisal, nonjudgmentaless (Elices et al., 2016; Feliu-Soler et al., 2014; Hölzel, Lazar, Gard, Schuman-Olivier, Vago & Ott, 2011; Tsur, Berkovitz & Ginzburg, 2016)

Accordingly, both DBT (Linehan, 2014; Linehan & Wilks, 2015) and GET (Visintini, 2017) theorized mindfulness as a core mechanism of their therapeutic action: in fact, patients attend to weekly mindfulness groups leaded by expert clinicians and home mindfulness practice is strongly encouraged. The central role of mindfulness in both treatment programs accounts for the absence of significant differences between GET and DBT in the low threshold of reactivity to sensations and stimuli (FFMQ No react), and ability to express subjective experiences in words (FFMQ Describe). This could also explain in turn, and in conjunction with specific skills or group activities, the similar effects on behavioral dimensions (i.e., impulsivity, self-harm behaviors).

However, differences arise between treatment programs in the completers' sample in relation to the first component of mindfulness named previously, that is, the ability to put attention to inner states and to be aware of their onset, course and effects on body and mind (FFMQ Acting with awareness). It seems to be enhanced in a stronger way in GET than in DBT for subjects who completed one-year of treatment, probably due to a constant, punctual and regular mindfulness guided practice (Barrett, Gross, Christensen & Benvenuto, 2001; Dixon-Gordon, Chapman, Weiss & Rosenthal, 2014). In fact, mindfulness weekly activities last for about one hour in GET in a dedicated group, mainly devoted to body sensations (e.g., mindful breathing, body scan, progressive muscle relaxation), while in DBT skills training mindfulness practice lasts for just fifteen minutes. This difference in the duration of guided practice could explain the higher scores in the GET group in FFMQ Acting with awareness in the completers' sample.

With regard to the second component of mindfulness, that is the ability to put attention on characteristics of stimuli and notice inner sensations with a nonjudgmental attitude, this seems to be quite difficult to change, probably for its inherent complexity (Carson & Langer, 2006; Linehan, 2014): in fact, FFMQ Observe and FFMQ No judge didn't show significant changes over one year in the intention-to-treat sample, nor in the completers' sample.

Focusing on emotion dysregulation, GET patients who completed the first year of treatment improved stronger than DBT group in some dimensions. Specific mechanisms of action could be hypothesized.

A first mechanism concerns a common target of DBT and GET, the ability to interrupt urges (BIS-11 Total score) and impulsive emotionally-driven behaviors (DERS Impulse), and to act on purpose under a negative intense emotional activation (DERS Strategies, DERS Goals). In GET specific weekly group activities are devoted to crisis management and to cope ahead with difficult situations. In DBT such skills are coached in emotion regulation and distress tolerance modules, and this similarity could explain the comparable effectiveness on BIS-11 Total score, which assess impulsivity as a general attitude and cross-situational behavior.

However, the same activities are addressed with a different frequency in the two groups, weekly in GET and sequentially in DBT: in other words, while in GET strategies are presented in a synchronous way, in DBT they are presented in a diachronic way (Carretta et al., 2015). Studies conducted in DBT programs demonstrated that an actual more frequent use of skillful behaviors determined a reduction of emotionally-related factors, such as self-harm and suicidal behaviors, symptoms of depression and anger (Lindenboim, Comtois & Linehan, 2007; Neacsiu et al., 2010; Barnicot, Gonzalez, McCabe & Priebe, 2016). A theorized mechanism of change due to skills practice is a decrease in experiential avoidance (Neacsiu et al., 2014), and this could account for the better improvement in the behavioral dimensions of impulsivity due to emotion dysregulation for GET patients who attended the full first year of treatment.

Another GET therapeutic factor that could have an effect on sustaining emotion regulation and reducing secondary emotions, such as shame and guilt, it is likely to be sharing experiences in multiple group activities (Andión et al., 2012). Borderline Personality Disorder patients seem to be prone to experience strong sensitivity to social rejection (Velotti, Garofalo & Bizzi, 2015) and to overreact with maladaptive impulsive reactions to interpersonal stressors (Berenson et al., 2016; Chesin, Fertuck, Goodman, Lichenstein & Stanley, 2015; Lazarus, Southward & Cheavens, 2016). Research showed that when individuals experience less interpersonal problems, they exhibited faster reduction of emotion dysregulation (Wilks et al., 2016). Therefore, sharing experiences in multiple therapeutic group settings, that are by definition controlled and safeguarded, it's a way to expose Borderline Personality Disorder patients to social cues, modulate rejection sensitivity and improve an accepting attitude toward negative emotions (Bungert, Liebke, Thome, Haeussler, Bohus & Lis, 2015; Berenson et al.,

2016) – i.e., DERS Non acceptance, which got reduced significantly higher in GET than in DBT for subjects who completed one-year of treatment.

The demonstrated effectiveness of GET and DBT on primary and secondary targets goes along with the trend of change of quality of life, which showed improvement in both treatment programs; the effect is robust since no differences were found between the completers and the full sample. However, physical wellbeing improved significantly higher in GET than in DBT in the intention-to-treat sample, probably as a consequence of the therapeutic action of bodily dimensions. Given that the group effect was not found in the completers' subsample, future studies are needed in order to confirm the finding and to explore deeply any causal hypothesis.

In summary, the results from the present study indicate that DBT and GET, albeit through different theoretical and clinical routes, reached comparable outcomes on target variables over one year. Variability in individual parameters confirmed that subjects strongly differed in the degree of change. Specificity of treatment changes could be accounted by different mechanism of action. In GET, the combined action of mindfulness practice, regular work on crisis management, and sharing experiences in multiple group settings is likely to reduce emotion dysregulation and sustain bodily awareness in subjects who attended the first year of treatment.

Nonetheless, a critical question of GET is the intensity of treatment in the first year (6-7 hours a week), which is higher than DBT (3-4 hours a week). Even if the more recent clinical guidelines from Europe (National Collaborating Centre for Mental Health, 2009) and USA (APA, 2001) agree on suggesting psychotherapy as first choice for the treatment and management of all PDs, in particular for Borderline Personality Disorder, more specific recommendations are needed for the cost-effectiveness aspects (for a review, see Soeteman & Kim, 2013). The question of high costs for Borderline Personality Disorder therapeutic programs was mainly a consequence of the fact that the severity and the complexity of Borderline Personality Disorder pathology required the interventions of multidisciplinary team work, composed by trained clinicians (Soeteman et al., 2010). GET involves a substantial number of trained health care professionals for a greater amount of time, and therefore higher costs for Health National Services and patients. Future studies are needed in order to investigate if attendance is related to a significant greater or faster improvement on outcomes.

2.3.4.1. LIMITATIONS AND FUTURE DIRECTIONS

Several limitations should be considered with the present results. First of all, the sample was quite homogenous in age and subjects were predominantly female; gender differences in the treatment effects couldn't be examined for lack of sufficient statistical power.

Missing data were handled with a very conservative approach and this could explain the absence of treatment effect in the intention-to-treat sample. Consequently, further analysis are needed in order to obtain a more accurate estimation of missing values.

The primary and secondary outcome measures were assessed with self-report instruments and therefore they may be subject to response biases. Clinical evaluation of patients' changes could be more reliable, although it is necessary to control for the allegiance effect. Other variables should be added in further studies, such as emergency room visits, hospitalizations, psychiatric symptomatology, attendance to treatment activities.

Other directions for future research are extending the assessment over the first phase of treatment and including follow-up evaluation in order to verify the stability of changes. Further analysis could model group trajectories or examine time lagged relations between variables (considering separately treatment programs or subtyping patients by relevant psychological dimensions) in order to identify patterns of treatment response.

Despite these limitations, the current study is the first empirical comparison between GET and DBT, two structured and complex therapeutic programs for patients with Borderline Personality Disorder features delivered in a day hospital setting. The use of HLM analysis allowed to take into account the individual variability in the response to treatment. Results were mainly focused on target psychological variables, particularly relevant for understanding the course of Borderline Personality Disorder functioning during structured therapies. Data covered a quite wide assessment time – i.e., one year – and demonstrated the effectiveness of both treatment programs, offering suggestions on specific mechanisms of therapeutic actions. However, additional studies are needed before strong conclusions can be drawn about their generalizability (e.g., different centers, settings, teams) and their therapeutic factors, disentangling common and specific processes.

PART THREE

Single case studies

Of course we will hurt each other.

But this is the very condition of existence.

To become spring, means accepting the risk of winter.

To become presence, means accepting the risk of absence.

Antoine de Saint-Exupéry

Manon, danseuse (1925)

3.1. Process studies

3.1.1. *Main topics*

The awareness of the qualitative aspects of the therapeutic action and of their dependence on the relational context has encouraged in recent years the investigation on the processes of change (Lingiardi, Tanzilli & Colli, 2008). A good definition of the so-called psychotherapy process research could be found quoting Hardy and Llewelyn (2015, p. 183):

> Although we have made great advances in psychotherapy research, so that we can now say with confidence that many psychological treatments lead to significant therapeutic change, there are still many questions to which we do not know the answer. Perhaps the most important of these questions is, 'What is it that happens in the psychotherapy session that is helpful?' or, put another way, 'How does psychotherapy work?'. Of course this question is inextricably linked to the question 'Does it work?'. But it is the focus that is different, the focus of what it is that happens within the system – that of the client, therapist and their interactions – that somehow enables change to occur. This is the focus of process research.

Process research addresses what happens in psychotherapy sessions, examining variables such as the behavior of therapist and patient, their attitudes and their interactions; the focus is both on the content of the sessions and on the mechanisms through which patient's change is achieved (Hardy & Llewelyn, 2015). At his core, the study of psychotherapy processes focused exactly on change processes and how these may be achieved through therapeutic interventions and interactions; more specifically, these dynamics can be achieved through verbal, nonverbal or paraverbal communication, and can have a variable impact on the therapeutic couple, or not at all. According to Kazdin (2009), researchers needs to be involved in the identification and understanding of therapeutic processes, in order to develop 'evidence-based explanations' of why a treatment works and how changes come about.

There are four primary aims of process research (Hardy & Llewelyn, 2015).

The first one is to understand the mechanisms of treatment and change processes. While the core question of outcome research is about evidences on the efficacy or the effectiveness of treatments, questions about why and how treatments work has intrigued psychotherapy researchers for many years (Lambert, 2004). However, it seems that this issue is considerably more complex and difficult to answer than outcome studies, in that the number of solid research findings about mechanisms of change is surprisingly small (Orlinsky et al., 2004). Thus, unfortunately, this issue has not attracted the level of funding that has been provided for outcome research (Hardy & Llewelyn, 2015).

The second aim of process research is to understand, emphasize, strengthen or develop aspects of treatment that are the most important in effecting change, in order to improve the quality of a psychotherapeutic program. For instance, Hill and Knox (2002) suggested that therapist self-disclosure can contribute to the therapeutic alliance in the immediate process of therapy, while its effects on the ultimate outcome of therapy are less clear. On the other side, some aspects have relatively little influence on the outcome or on the quality of therapy, such as gender (Beutler et al., 2006), age or ethnicity (Beutler et al., 2004).

The third aim of process research is to contribute to the development of theories, which provide the rationale of treatment interventions. In general, it is good practice that therapeutic work is grounded on robust theoretical structure in order to have a clear focus and in order to sustain a stronger impact on patients. On the other side, theoretically-based work can also be built on what has been demonstrated to be effective in the past: these evidences can suggest specific strategies for future interventions. More specifically, with regard to process research, a close examination of mechanisms of change can reveal aspects which may not be observed in outcome studies, and which can thereby support, modify or disprove theoretical fundamentals. For instance, process studies on therapeutic relationship suggested that the bond within a therapeutic couple, agreement upon tasks and goals, and the so-called non-specific factors contributed to change (e.g., Gelo et al., 2015). Indeed, other studies seemed to demonstrate that, although therapists from different theoretical orientations behave differently from each other in terms of interventions, aims and tasks, nonetheless, their efficacy is broadly equivalent (e.g., Ablon & Jones, 1998; Stiles et al., 1998).

Finally, process research seems to assist in the development of effective training, by closely linking with the other three aims listed above: in other words, observation of what has the most impact has implications for what should be taught to novice therapists.

In summary, process research aims to enable therapists to learn and to deliver forms of intervention that are most likely to be effective, to improve quality and to ensure that the underpinning theories are supported by evidence.

3.1.2. ***Designs***

3.1.2.1. SINGLE-CASE DESIGNS

A particular declination of the so-called psychotherapy change process research is represented by the study of single cases, in which, through repeated systematic observations, the relationships between the therapist's interventions and other relevant variables, measured in the patient (for example, the outcome of the treatment are examined) or in the relationship with the therapist (Fonagy & Moran, 1993) are investigated. This method makes it possible to measure a central and delicate aspect such as the degree of congruence between problem, pathology, treatment and outcome, thus allowing a two-level analysis, macroanalytic and microanalytic, of change (Lingiardi, 2006).

Single-case experimental designs are also known in literature as in-subject designs (McBurney & White, 2010), since the critical issue is not the reduced sample size, but rather the investigation methodology, focused on changes within the subject in response to defined clinical interventions (Del Corno, 2006). However, unlike what is expected in experimental designs in the strict sense, where it is necessary to keep all variables constant and to manipulate the only independent variable (McBurney & White, 2010), in psychotherapy research such control conditions are almost impossible, and explanations are often elaborated starting from the analysis of the sessions, not a priori (Fonagy & Moran, 1993).

3.1.2.2. PROCESS-OUTCOME STUDIES

As stated previously, outcome research is about the improvements in patient's symptoms, problems, and functioning, while process research is about the actions, experiences, and relatedness of patient and therapist during therapy sessions. Other studies link psychotherapy process to treatment outcome: in other words, such works selectively examine the changes occurring within the patient over the course of a psychotherapy, that are hypothesized to have

a causal relation with treatment outcomes (Crits-Christoph, Connolly Gibbons & Mukherjee, 2013).

There is a large amount of studies that examine what happens during psychotherapy sessions, but do not link events and processes to treatment outcome. Single case reports, qualitative studies, and investigation of critical events in psychotherapy are examples of other forms of process research (Elliott, 2010). Such studies are essential to understanding the nature of psychotherapy; however, the impact of such empirical investigations on clinical practice and the training of psychotherapists is more speculative when outcome is not taken into account.

There are about more than 2000 published process-outcome studies of psychotherapy (for a review, see Orlinsky, Rønnestad & Willutzki, 2004). However, these reviews have mostly focused on a generic model of psychotherapy that emphasizes common factors (e.g., patient-therapist relationship). Beyond the undeniable importance of these factors in psychotherapies of any theoretical orientation, clinical and research advances in the understanding and applications of psychotherapies are also likely to be guided by process-outcome studies devoted to some theoretical dimensions specific for selected forms, models or theories of psychotherapies (Crits-Christoph, Connolly Gibbons & Mukherjee, 2013).

3.1.3. *Examined dimensions*

Up to now, different authors formulated different estimates of the contribution of factors in accounting for outcome variance in psychotherapy (see **Table 3.1**). The following paragraphs summarize the findings of the scientific research on the contribution of the individual factors identified so far.

Table 3.1. Factors estimated to account for outcome variance in psychotherapy.

Authors	Sources of outcome variances
Lambert (1992)	• Extra-therapeutic factors (i.e., patient): 40% • Common factors (e.g., therapeutic relationship): 30% • Techniques: 15% • Placebo effect: 15%
Wampold (2001)	• All therapeutic factors combined: 13% • Patient: 87%
Norcross and Lambert (2011)	• All therapeutic factors combined: 30% • Patients: 30% • Unexplained variance: 40%

3.1.3.1. PATIENTS' FACTORS

As early as 1994, Bergin and Garfield stated: "Another important observation regarding the client variable is that it is the client more than the therapist who implements the change process. If the client does not absorb, utilize, and follow through on the facilitative efforts of the therapist, then nothing happens. […] Clients are not inert objects on whom techniques are administered. They are not dependent variables upon whom independent variables operate" (pp. 825-826). Afterwards, in recent years there has been a greater recognition of the patient's role as an active participant in psychotherapy (Bohart & Wade, 2013), which leads to several studies on specific patient's variables and their relationship to outcome. The results of these studies proved to be solid and agreed in some cases, while in other cases they proved to be mixed.

Table 3.2 summarizes main research findings.

Table 3.2. Summary of research findings on patients' factors influencing therapeutic outcomes.

Dimensions	Results
DEMOGRAPHIC VARIABLES	
Age	Mixed results: • no relationship between age and outcome for substance abuse (Clarkin & Levy, 2004); • no relationship between age and outcome for anxiety, substance abuse, and personality disorders; effect only for dysphoric/mood disorders (worse outcomes for older patients; Castonguay & Beutler, 2006a); • effect in a RCT of both cognitive therapy and medication for depression (Fournier et al., 2009); • no effect in two meta-analyses of treatment for depression (Cuijpers, van Straten, Smit & Andersson, 2009; Oxman & Sengupta, 2002)
Gender	No relationship between gender and outcome (for a review, see Castonguay & Beutler, 2006b; Clarkin & Levy, 2004) Studies on matching therapist to patients on gender led to mixed results (for a review, see Bowman, Scogin, Floyd, & McKendree-Smith, 2001; Clarkin & Levy, 2004)
Educational level, socio-economic status, and social support	Mixed results (for a review, see Bohart & Wade, 2013)
Cultural factors	Mixed results (for a review, see Bohart & Wade, 2013) Meta-analyses of studies matching clients with therapists of their own ethnicity found small effects sizes (Cabral & Smith, 2011; Maramba & Hall, 2002)

Dimensions	Results
CLINICAL VARIABLES	
Severity of problems	Severity of symptoms and functional impairment led to poorer prognosis, and individuals with more severe symptoms needed more sessions to show improvement (Clarkin & Levy, 2004) Results confirmed for anxiety disorders (for a review, see Newman et al., 2006) and for dysphoric/depressive disorders (for a review, see (Beutler, Blatt, Alimohamed, Levy, & Angtuaco, 2006) Other studies found that higher pretreatment distress predicted greater change (Brown et al., 2001; Hansen & Lambert, 2003; Hansen, Lambert, & Forman, 2002) Two studies of Parent management training for children with conduct problems found that greater severity led to better outcomes (Hautmann et al., 2010; Kazdin & Whitley, 2006) CAVEAT (Bohart & Wade, 2013). Although clients with higher levels of distress may show the most change, they do not necessarily achieve the most positive outcomes *in an absolute sense*: it is different if outcome means "amount of change" or "final status" (that is, return to normal levels of functioning)
Comorbidity	Personality disorder comorbidity predicted poorer outcome, with the exception of Cluster A and C personality disorders with eating disordered patients (Beutler et al., 2006; Clarkin & Levy, 2004) In anxiety disorders, comorbidity for depression, personality disorders, and substance abuse negatively impacted outcome (Newman et al., 2006) Substance abusers with comorbid psychiatric diagnoses had less favorable treatment outcomes (Haaga, Hall & Haas, 2006)

Dimensions	Results
PERSONALITY	
Attachment style	A meta-analysis found a significant positive correlation between global assessments of patients' secure attachment and outcome, a significant negative correlation between attachment anxiety and outcome, and a negligible relationship between attachment avoidance and outcome (Levy et al., 2011) Secure patients had better outcomes than preoccupied patients in a group therapy (Strauss et al., 2006) Secure attachment *to the therapist* had more predictive value for outcome than global measures of attachment (Sauer, Anderson, Gormley, Richmond, & Preacco, 2010) A meta-analysis showed that securely attached clients had better alliances and insecurely attached clients had weaker alliances (Diener & Monroe, 2011)
Coping style	A meta-analysis found that internalizers (self-reflective, withdrawn and inhibited individuals) were more likely to benefit from insight-oriented therapy, while externalizers (impulsive, stimulation-seeking and task-oriented individuals) benefitted from symptom-focused, or behavioral-skills approaches (Beutler, Harwood, Kimpara, Verdirame & Blau, 2011)
Psychological mindedness	The tendency to turn inward and to seek psychological explanations of behavior is positively related to staying in therapy (Barrett et al., 2008) Results with outcome are mixed (for a review, see Bohart & Wade, 2013)
Awareness of emotions	High levels of alexithymia predicted poorer outcome, but mainly in psychodynamic and not cognitive-behavior therapies; moreover, depression may in part impact or cause alexithymia (for a review, see Bohart & Wade, 2013) Early in therapy, patients' skills of emotional regulation had a significant impact on the quality of their in-session processing and on outcome (Watson, McMullen, Prosser & Bedard, 2011)
Other dimensions	Internal locus of control, social competence, learned resourcefulness, ego strength, and defense style were found to predict outcome in therapy (Clarkin & Levy, 2004)

Dimensions	Results
RESPONSE TO TREATMENT	
Motivation	Involvement and engagement are strongly associated with outcome (Orlinsky et al., 1994, 2004) Internal motives (e.g., individual's intrinsic interests), or those that represent personally chosen values, sustain effort and behavior better than external motives, such as external rewards or punishments (Sheldon, 2004; McBride et al., 2010) In a meta-analysis, the patient's readiness to change prior to therapy showed a medium effect size on outcome (Norcross et al., 2011) A meta-analysis showed that highly reactant patients (that is, individuals who are sensitive to interpreting external direction as threats to their freedom; Brehm, 1966) are more likely to show resistance when working with directive therapists, while the reverse was true for patients low in reactance (Beutler, Harwood, Michelson & Holman, 2011)
"Early responders"	Despite the level of impairment at the beginning of therapy (it could be even high; e.g., Stulz, Lutz, Leach, Lucock, & Barkham, 2007), some patients reached significant positive change within a small number of sessions, and this occurs across diagnoses and therapy approaches (Haas, Hill, Lambert, & Morrell, 2002).
Change trajectories	Stulz et al. (2007) found five different slopes of change: • high initial impairment followed by improvement; • low initial impairment followed by improvement; • early responders (early improvement); • medium level of impairment followed by continuous improvement; • medium level of impairment followed by discontinuous improvement (periods of improvement and regression). Of the two medium-impaired groups at intake, the discontinuous one showed more reliable change than the continuous one (44% to 19%). Discontinuity did not necessarily predict poor outcome, even if some members of this group showed greater deterioration than those in the continuous change group.

Some authors propose to overcome the simplistic logic of a relation between patients' factors and outcome, and to develop more sophisticated hypotheses about the psychological variables that may moderate or mediate treatment effects (Clarkin & Levy, 2004). In a more dynamic view of psychotherapy, from the start of therapy, patients begin to dynamically interact with therapists and treatment variables.

For instance, Gassman and Grawe (2006) found that successful therapists paid attention to patients' strengths since the first session, while unsuccessful therapists were focused on problems, but neglected strengths.

Seen from another perspective, it is important to note how patients are not passive recipients of treatment, like patients in surgery settings, for instance. Rather, they actively interact with therapists, with different degree of involvement, resonance with therapists and his methods, levels of commitment, and ways in which therapeutic changes are implemented in everyday life (Bohart & Wade, 2013).

3.1.3.2. THERAPISTS' FACTORS

It is well known from both research and clinical experience that certain therapists are better than others at promoting positive patients' outcomes, and that some therapists do better with some types of clients than others (Lambert & Barley, 2002). However, compared to the amount of research available on patients' variables, research on the impact of therapist dimensions or skills is equally heterogeneous, but less abundant (Baldwin & Imel, 2013; Horvath & Bedi, 2002). In their exhaustive review, Baldwin and Imel (2013) found that there is little consistency in how therapist differences on effectiveness were defined. Furthermore, the examined studies were heterogeneous with respect to the number of therapists, the number of patients per therapist, the kinds of intervention, patient population, and outcome measures.

From a methodological point of view, the approaches for studying therapist effects fall into two categories: fixed effects studies and random effects studies.

More specifically, fixed effects studies quantify how much two or more therapists differ from one another. Overall, research findings suggested that therapists differed in their outcomes, sometimes largely (Baldwin & Imel, 2013). Moreover, Wampold and Brown (2005),

and Brown and colleagues (2005) demonstrated that therapists' effectiveness tend to be stable over time.

On the other side, random effects studies quantify how much two or more therapists differ from one another, but the focus is on the variability among therapists' outcomes in the population of therapists. Thus, the most salient result in random effects analyses is an estimate of the amount of variance in outcome that is associated with therapists. In their review, Baldwin and Imel (2013) found that, on average, approximately 5% of the variance in outcomes was associated with therapists. This value was smaller than the 8.6% estimate provided in a previous meta-analysis (Crits-Christoph et al., 2013) and it could be due to moderate between-study variability. In fact, separating naturalistic studies and RCTs revealed differences between the two designs: indeed, in naturalistic studies, approximately 7% of the variance in outcomes is associated with therapists, while in RCTs only approximately 3% of the variance in outcomes is associated with therapists. The difference between designs was statistically significant. In the opinion of the authors, the lower estimates in RCTs may be due to the high amounts of training, supervision, and more severe rules in conducting therapies.

The characteristics of the therapists examined by the research are quite varied. Beutler and colleagues (2004) reviewed the influence of a wide range of therapist qualities, dividing them into four categories:

- observable traits, such as such as age, sex, gender;
- observed states, such as training and experience;
- inferred traits, such as values, attitudes, well-being;
- inferred states, such as adherence to specific and technical interventions and nonspecific treatment components (e.g., therapeutic relationship).

While the first three categories did not demonstrate consistent effects on outcome, only the fourth category received a detailed attention and empirical support.

From a different perspective, according to Horvath and Bedi (2002), the therapist's abilities or qualities that contribute to outcome can be divided into three broad facets:

- an interpersonal skill component, that is, therapist's capacity to express sensitivity and responsiveness to the patient's needs (e.g., the openness in accepting and appreciating patient's feelings, the ability to recognize and support patient's uniqueness, the capacity to maintain a tolerant and clear communication, the willingness to repair alliance ruptures);

- an intrapersonal element, that is, the impact of therapist's qualities to outcome and therapeutic relation;
- and interactive components, such as Therapist-patient matching and complementarity, and their level of collaboration

A specific dimension concerning therapist is the level of experience and training. In his work, Horvath and Bedi (2002) found mixed results, with some studies supporting a positive relation between therapists' experience and their ability in cultivate a strong alliance, and other studies suggesting a negative effect. It was also found that patients with difficulty forming intimate relationships developed stronger alliances with more experienced therapists, while less relationally problematic patients did not respond differentially to levels of experience (Kivlighan & Shaughnessy, 2000).

3.1.3.3. TECHNIQUES AND ADHERENCE

There is evidence that patients benefit from a wide range of therapy approaches (i.e., the "Dodo bird" verdict, Luborsky, Singer, & Luborsky, 1975; Wampold & Imel, 2015). However, a strand in psychotherapy is devoted to the so-called unique or specific factors, there is elements that characterize and differentiate a therapeutic orientation (Lambert, 2004; Wampold, 2001). Such elements are theorized as specific, stressed, or influencing in a given type of psychotherapy, while they are expected to be almost marginal in other types of psychotherapy. They can be divided into many different categories (McAleavey & Castonguay, 2015), such as methods (e.g., daily diary records in cognitive therapies), techniques (e.g., interpretation in psychodynamic approaches), impacts (e.g., insight into the reproductions of maladaptive patterns in psychodynamic therapies), and mechanisms of change (e.g., increase in reflective functioning).

It should be noted that neither common nor specific factors of psychotherapy operate in the absence of the other, and that such a distinction represents an artificial dichotomy in clinical practice (Wampold, 2001). For example, an important part of the construct of the alliance is the presence of shared goals between patients and therapist; on the other side, goals are routed within a theoretical model, in which both immediate and long-term defined objectives are settled in order to improve overall functioning and reduce symptoms (McAleavey & Castonguay, 2015).

The strand in psychotherapy research devoted to specific therapeutic factors comprises among other aspects the study of the adherence to a treatment model (Connolly-Gibbons, Crits-Christoph, Levinson & Barber, 2003). Treatment adherence refers to the degree in which a treatment is coherent with the theoretical model and the manualized strategies, differentiating it from other interventions (Moncher & Prinz, 1991; Waltz, Addis, Koerner & Jacobson, 1993). Assessing model's adherence ensures that treatments are delivered with fidelity, provides information about mechanisms of therapeutic actions and helps in distinguish specific and common modalities of interventions (Owen & Hilsenroth, 2014), also with implication for implementation and generalization of treatment protocols (Yeaton & Sechrest, 1981). Beside this, in a review of the literature of psychotherapy outcome studies, only approximately 26% used manualized treatment protocols, in less than half therapists' training was stated, and only in 13% therapists' competence were certified (Luborsky, Diguer, Luborsky & Schmidt, 1999). Moreover, Webb, DeRubeis and Barber (2010) conducted a meta-analysis and found that treatment adherence accounted only for less than 1% of outcomes, explaining the low effect size with non-linear paths: in fact, adherence can improve, reduce or have no influence on therapy outcomes for the complexity of reciprocal relations between therapeutic factors (Owen & Hilsenroth, 2011, 2014).

3.1.3.4. THERAPEUTIC RELATION

For decades research on psychotherapies and their outcomes is consistent in the claim that different models of psychotherapeutic treatment produce similar benefits, without a program being more effective to an absolute degree (Luborsky et al., 1975; Horvath & Bedi, 2002): it is the so-called paradox of equivalence.

In support of this, it has been shown that a large proportion of patients' improvement during treatment is attributable to factors common to different therapeutic programs (Roth & Fonagy, 2004). Relational elements seem to take on particular relevance (Horvath, 2013).

Among the relational factors responsible for change, a particular contribution was recognized to the therapeutic alliance (Horvath, 2011; Lingiardi, 2002). Horvath and Bedi (2002) note: "The therapeutic relationship in general, and the therapeutic alliance in particular, is the quintessence of the common ground shared by most psychotherapies" (p. 37).

The term therapeutic alliance (in Anglo-Saxon research is called alternatively therapeutic alliance, working alliance or helping alliance) is used by scientific literature to indicate an

interactive dimension, the capacity of the couple made up of therapist and patient to develop a relationship based on feelings of trust and of mutual commitment (Lingiardi, 2002). It collects a large number of constructs under it and is not attributable to a precise and unambiguous definition (Lingiardi, 2002): in fact, going beyond the number of publications and considering the contents of the articles, we observe the absence of a definition shared (Horvath & Bedi, 2002).

There are more than sixty-five methods only in Anglo-Saxon countries to measure the alliance (Elvins & Green, 2008). Each assessment method represents an operationalization of the construct and, therefore, conveys a specific definition distinct from the others: some studies have shown that less than 50% of the observed variance is common among the most used measures (Horvath & Bedi, 2002), moreover, there is no data on the discriminating validity of all the instruments available (Horvath, 2011). More specifically, there appear to be two critical aspects relating to the construct: the definition and identification of its components (Colli, 2011).

The distinctive feature that seems to emerge with greater clarity in the different definitions, especially in the more recent ones (Lingiardi, 2002), is the conceptualization of the alliance as an active component of the therapeutic relationship, emphasizing the dimension of collaborativeness (Bordin, 1976).

However, a problem of the factors common to the different treatments is that in being considered transversal they lose their belonging to the original theory of reference, and therefore their definition is impoverished and flat (Horvath, 2011). It is useful to distinguish the alliance from aspects such as the unconscious transference and countertransference dynamics of psychodynamic approaches (e.g., Gelso & Carter, 1994; Meissner, 2007): in fact, it is a third dimension compared to the therapist and the patient, who is born and develops within the therapeutic relationship (Horvath, 2013; Meissner, 2007) and involves conscious elements of the relationship (Horvath, Del Re, Flückiger, & Symonds, 2011). It is however important to note the difference between alliance, specific of therapeutic contexts, and real relation, which involves aspects of the interaction between therapist and patient related to their existence as people of the world (Meissner, 2007).

Such a delimitation of the area of investigation allowed to investigate the role of the alliance also in cognitive-behavioral therapies (e.g., Castonguay, Constantino, & Holtforth, 2006).

Of particular interest is the conceptualization of Edward Bordin (1976, 1994), called "pantheoretical" because it can be extended to different theoretical frameworks. With the term alliance Bordin indicates the quality and strength of the conscious collaborative relationship between patient and therapist in the course of therapy.

Three components are identified:

- the tasks, that is the behaviors and the processes inside the sessions that constitute the object of the therapeutic work; they must be considered important and relevant both by the patient and by the therapist;
- the objectives, the results that the patient and the therapist have agreed to pursue and towards which both are committed;
- the bond, which refers to the relationship between therapist and patient, based on mutual feelings of respect, trust and acceptance.

In the words of Horvath and Bedi (2002), "the alliance implies a sense of participatory collaboration [partnership] between therapist and patient, in which each participant is actively committed to respecting specific and adequate responsibilities towards the therapy, and believes that the another is involved in the process just as enthusiastically" (p. 41).

The alliance has proved to be a reliable prognostic factor in the outcome of therapy (Horvath, 2011, 2013). The relationship between alliance and outcome was measured in a consistent manner by RCT and non-RCT studies: in fact, about 65% of the outcome variance is attributable to the strength of the therapeutic alliance, regardless of the evaluators – the patients, the therapists or external observers – of the patient's problems or severity; above all, its impact is similar in different therapeutic programs for orientation and degree of formalization (Martin, Garske & Davis, 2000; Flückiger et al., 2012).

Progressively, over the last twenty years, the research focus has shifted beyond the exploration of the relationship between alliance and treatment outcome, aiming rather to investigate the factors of mediation of the outcome and of moderation of the impact of the therapeutic action (Hill & Knox, 2009).

Patient characteristics play an important role in influencing the therapist's emotional response (Colli et al., 2013), but they do not seem to be deterministic for the therapeutic alliance: in fact, even patients with high levels of severity can manifest a satisfactory collaboration in therapy (Lingiardi et al., 2000). An important factor, especially at the beginning of therapy, seems to be represented by the secure or insecure attachment style of patients

(Eames & Roth, 2000; Rubino et al., 2000; Tyrrel et al., 1999). Some studies suggest that the patient's commitment plays a key role in the therapeutic alliance (Lingiardi, Colli, Gentile & Tanzilli, 2011).

The most recent research seems to indicate the therapist's abilities as an effective outcome predictor (Del Re et al., 2012; Hill & Knox, 2009; Zuroff et al., 2010): in particular, the ability to involve the patient, to focus on shared objectives and to maintain his focus on emotional experience have been identified.

The experience of the therapist has produced contrasting results: in some research this has a weight, especially with the most suspicious or more serious patients (Bein et al., 2000), in others it is not relevant (Dunkle & Friedlander, 1996).

The interpersonal skills of the therapist and his disposition to empathy (Ackerman & Hilsenroth, 2003) have also proved to be significant predictors of the outcome. Bachelor and Salamé (2000) have observed that different patients identify different behaviors of their therapist as an empathetic attitude: for example, finding themselves in the words of the therapist, or feeling understood, cared for, or still finding the therapist available to tell personal experiences. Research seems to agree that therapists frequently give lower covenant ratings than their patients, and this discrepancy is maintained during treatment (Horvath & Bedi, 2002).

The data lead us to believe that the therapist's ability to respond adequately to that patient, rather than his skills in a general sense, play a decisive role in the therapeutic process (Diener, Hilsenroth & Weinberger, 2007). Crits-Christoph, Barber, and Kurcias (1993) had observed that an improvement in the alliance in the final stages of therapy depended on the frequency of therapist interventions most adherent to the patient's Core Conflict Relational Themes. The results are in line with the finding that the correlations between patient and therapist alliance assessments, on average satisfactory, tend to increase as therapy progresses (Gunderson et al., 1997; Hersoug et al., 2001a, 2001b). A recent study (Lingiardi et al., 2011) has confirmed that therapist's interventions focused on patient's emotional states, on his relational patterns and on the current interaction correlate significantly with a greater capacity for elaboration of the patient and with a stronger alliance.

Moreover, as noted by some meta-analyzes of the Horvath research group (Horvath & Bedi, 2002), alliance assessments in the initial phases (between the first and the fifth session) and the end of therapy have a greater predictive capacity of the outcome, compared to intermediate assessments. It is useful to remember, however, that early indicators of negative

alliance are not necessarily predictive of a negative outcome, if accompanied by a gradual increase in the alliance; on the contrary, elevated and unrealistic expectations on the part of the patient at the beginning of therapy are correlated with disappointing outcomes and early treatment interruptions (Florsheim et al., 2000).

According to Gelso and Carter (1994), in an effective treatment the trend of the alliance should follow a quadratic pattern, so-called "U-shaped": at the beginning of the therapy would be high, then it would reduce, finally it would return high. However, a more accurate analysis of the longitudinal development of the alliance during the sessions shows a more complex pattern, characterized by continuous bending and recovery (Bachelor & Salamé, 2000; Kivlighan & Shaughnessy, 2000).

3.2. Approaches to process research relevant to the present studies

3.2.1. *Rupture and repair processes*

Bordin (1994) suggested that the management of alliance-related confrontations offers an important contribution to the therapeutic process. In the wake of this awareness, a substantial amount of literature is dedicated to the rupture and repairing processes of the alliance (Safran, Muran, Samstag & Stevens, 2002), in some cases with an accurate analysis of the therapeutic process (Colli & Lingiardi, 2009). However, the methods and units of analysis are very different from each other, and the same concept of "rupture" of the alliance takes on different meanings according to the methods of assessment used (Horvath, 2011).

It is possible to identify two theoretical perspectives (Colli, 2011).

The first one is a holistic or relational perspective, in which the therapeutic alliance is seen as an interpersonal negotiation process, which each Author refers to different objects: for example, Safran and Muran (2000) consider agency and related needs. The psychotherapeutic process is characterized by continuous, more or less intense ruptures, and recovery of the tuning and, if read from a psychodynamic perspective, acts at a level that is as conscious as it is

unconscious (Horvath & Bedi, 2002). The way in which the patient communicates his discomfort and discusses it with the therapist is a central element: the breakups of the alliance and the resulting reparations are themselves a therapeutic change (Lingiardi et al., 2011).

The second one is a narrow or rational perspective, in which the breakdowns and reparations of the alliance are an element of the therapeutic process, but are not essential: in fact, the contents of the patient's communications are the central element.

Researchers examined the breakdown and repair dynamics of the alliance by comparing sessions or treatment steps (Colli & Lingiardi, 2009; Safran et al., 2002; Stiles et al., 2004).

In the model proposed by Jeremy D. Safran and J. Christopher Muran (Safran and Muran, 2000; Safran et al., 2002), alliance ruptures are all moments of tension or detachment between patient and therapist, resulting in difficulty in establishing and maintaining a relationship. Consistent with Bordin model (1976, 1994), disagreement may occur with regard to the three components of the alliance: treatment goals, therapeutic strategies or the bond of trust (Safran et al., 2002). Ruptures are considered unavoidable passages: sense of agency and relationality are basic needs, and therefore in every relationship human beings are fought in a state of continuous tension (Safran et al., 2002). The manifestation and resolution of the breakdowns are interactive processes, to which both the therapist and the patient contribute (Safran & Muran, 2000).

If resolved, ruptures can represent important change opportunities for the patient - and also for the therapist (Safran & Muran, 2000; Safran et al., 2002): the therapist's reparative interventions can take place in more or less direct ways, aimed at a level of superficial or deep meaning, depending on how close they are to the habitual ways in which the patient relates to self-representations and constructs interpersonal relationships.

Alliance ruptures can be traced to two main types, each of which follows specific resolution models (Safran & Muran, 2000).

- Withdrawal ruptures, when the patient distances himself from the therapist, the therapeutic process or his emotions, maintaining the relationship at the expense of the need for individuation. Examples are denying emotions that are evident, discussing a painful experience by ignoring its emotional value, giving short answers to exploratory questions, changing the subject, dwelling on telling anecdotes. The resolutive model of withdrawal fractures consists in acquiring the therapist's awareness of the current process and clearly bringing out the patient's feelings: one can proceed by exploring the

subjective experiences associated with poor collaboration behavior, or by exploring expectations and internal processes that inhibit the awareness of the fracture experience.

- Confrontation ruptures, when the patient directly expresses anger, resentment or disaffection towards the therapist or some aspects of therapy; in this case, the patient negotiates the conflict expressing the need for agency. Examples are being critical or sarcastic towards the therapist as a person or as a professional, criticizing his actions or assigned tasks, complaining about the treatment parameters, reporting the ineffectiveness of the intervention, discussing the usefulness of continuing therapy. The resolutive interventions by the therapist take place primarily by identifying the feelings of anger, then traced back to the painful feelings of underlying offense or disappointment, and finally guiding the patient to the awareness of their own vulnerability in the relationship, and the desire for support and care.

Table 3.3. Intervention strategies for therapeutic alliance ruptures (modified by Safran & Muran, 2000; Safran, Muran, Samstag & Stevens, 2002).

DISAGREEMENT ON TASKS AND GOALS		TENSION IN THE RELATIONSHIP	
Direct interventions	**Indirect interventions**	**Direct interventions**	**Indirect interventions**
Level of superficial meaning			
Explain the rationale of therapy, redefine goals and encourage independent patient development	Recontextualize the meaning of tasks and objectives, making them acceptable to the patient	Clarifying misunderstandings regarding specific issues (without referring to the patient's relational style)	Bring out the discomfort in the session and offer support
Level of deep meaning			
Explore the central relational issues that emerge in the here and now of the session	Modifying tasks and goals, adapting to the patient (restoring trust)	Exploring central relational issues: the resolution of the rupture is the therapeutic goal	Offering a new relational experience: the therapist communicates his understanding through actions and observes the consequences *

* In accordance with the construct of *interpretative action* by Thomas Ogden (1994).

3.2.1. *Interaction structures*

The terminology of "therapeutic action" is used to define the work of the therapist in order to promote change in the patient (Gabbard & Westen, 2003). This concept refers to the role played by the transformative factors in the therapeutic process: studying therapeutic action therefore means studying what generates change and success in treatment.

Previously we discussed the contribution of relational factors, in particular of the alliance, on the therapeutic outcome, and how these factors are in continuous interdependence with the technical and specific ones. In this direction, Jones (2000) proposes a model of therapeutic action that overcomes the dichotomy between technical aspects and relational aspects: change is promoted by their reciprocal influence.

There are two prevalent lines of thought with respect to the therapeutic action: the first one places the change within the patient's mind and as such is based on interventions promoting insight; the other one defines the relationship between patient and therapist as an experience in itself corrective and therefore of care. Jones creates a synthesis between these positions by designing a model in which the intrapsychic and interpersonal dimensions are inseparable in the therapeutic process. In fact, change does not take place exclusively through insight or through the relationship: the psychological knowledge of the self can only develop in the context of a relationship in which the therapist continually tries to understand the patient's mind through mutual interaction (Jones, 2000). The internal reality of the patient is modeled of the relationship he establishes with the therapist.

It is on this path that the author introduces the concept of "interaction structures" as a thread connecting the intrapsychic and interpersonal nature of the therapeutic action (Jones, 2000). At the base of this model there is in fact the idea that patient and therapist interact according to repetitive modalities: it is the repetition that offers continuity and at the same time generates a transformation in the relationship. Each therapeutic pair over time develops more or less dominant interaction structures that are specific to that pair and, being repeated, tend to be resistant to change. The joint reading of the subjectivity of the components is essential to understand the relational dynamics. In this direction, we can think that the interactive structures inform the inner world of both members of the couple and therefore on the intrapsychic functioning, as well as the interpersonal one (Jones, 2000). It follows that changes in these structures are linked to changes in the functioning of the patient: the change is produced by the

construction and reformulation of interactive patterns through a metacommunicative work. It is important to reaffirm the intrinsically bi-personal nature of the therapeutic process and its specificity according to the dyad: the uselessness in thinking of the therapeutic action as a static and universal concept is highlighted. Therefore, Jones proposes a model that does not aim at identifying an ideal therapeutic process to aspire to: it is crucial to highlight how change is the emerging product of many factors in continuous interdependence between them (Jones, 2008).

The of this construct on empirical research is strong. In fact, these patterns are reflected in behaviors that are observable, describable and therefore accessible to scientific study: all this offers the possibility of operationalizing dimensions of the therapeutic process related to the patient's world, that of the therapist and their intersubjectivity. Jones's conceptualization of interactive structures is not confined to the single psychoanalytic tradition: the research logic adopted assumes the therapeutic process *tout court*, detached from the single theoretical orientation, as an object of investigation. Furthermore, this theory is "trans-diagnostic": the reflection at the base is on the patient's psychological processes, not on the nosographic-descriptive label attributed to him.

The methodology through which Jones founded his model is that of the *Psychotherapy Process Q-set* (PQS; Jones, 2000): an elective tool for the study of the therapeutic process. It follows that PQS is an instrument of psychoanalytic derivation, but that expands in a perspective as it is applicable in a transversal way to any treatment. The Q-sort methodology that defines the tool well adheres to the single-case research as it allows the objective study of the subjectivity of the patient and the therapist. Adopting this technique allows to analyze the interactive structures through the coding of transcribed or audio-recorded psychotherapy sessions. This gives us the opportunity to grasp the clinical complexity in a naturalistic context, without forgetting the methodological rigor. The use of the tool in detail will be discussed in the next chapter. What is important to underline is the potentiality of this methodology in reconciling the clinic with research: there is an integration between the idiographic approach that emphasizes the uniqueness of the dyad and the nomothetic one that guarantees the objective parameters (Lingiardi et al., 2011).

3.2.2. ***Process studies on Dialectical Behavior Therapy***

3.2.2.1. TECHNICAL ASPECTS

With regard to DBT, the adherence to the model is facilitated by manualization (Linehan, 1993, 2014) and a rating scale, the *DBT Adherence Rating Scale* (DBT-ARS; Linehan & Korslund, 2003) was developed in order to evaluate the presence of DBT strategies and therapists' competence in DBT. Although most part of DBT studies assessed treatment adherence, up to now only few coders have been trained and certified (Lynch, Trost, Salsman & Linehan, 2007). A general problem of an instrument like DBT-ARS is that it has been developed for the strategies of a specific treatment and thus the dimension of differentiation between models could relied most on the theoretic background, while comparative process research required the development of transtheoretic criteria for rating therapeutic interventions (Trijsburg, Frederiks, Gorlee, Klouwer, den Hollander & Duivenvoorden, 2002).

In a recent study (Goodman, 2013), experienced clinicians defined the characteristics of prototypical DBT individual sessions with the *Psychotherapy Process Q-Set* (PQS; Jones, 2000). Goodman (2013) demonstrated that the focus on actual patients' experiences and a therapist's balanced attitude between acceptance and commitment played a central role in DBT; furthermore, DBT demonstrated its specificity in comparison with other manualized treatment programs, specifically the Transference Focused Psychotherapy (TFP; Clarkin, Yeomans, & Kernberg, 2006) and interventions focused on the Reflective Functioning (RF; Fonagy, Target, Steele, & Steele, 1998). Despite this, results demonstrated that RF items loaded onto both the DBT and TFP prototypes: accordingly with Bateman and Fonagy (2004), mentalization, operationalized as RF, is a common process within psychotherapy sessions with BPD patients.

3.2.2.2. RELATIONAL DIMENSION

On the other side, psychotherapy research took into account another dimension essential in DBT, as mentioned by Linehan (1993, 2014) and Heard and Swales (2009), that is, therapist's responsiveness to the patient. It is largely demonstrated that the relational dimension between therapist and patient contribute to the treatment course and outcome, regardless of theoretic framework (Roth & Fonagy, 2004; Horvath, 2013; Wampold & Imel, 2015). The so-called therapeutic alliance refers to an interactive dimension within a therapeutic dyad or group to build a relationship grounded on feelings of confidence and reciprocal commitment (Horvath

& Bedi, 2002; Lingiardi, Colli, Gentile & Tanzilli, 2011). The relation between alliance and outcome, both in RCT and non RCT studies, confirmed to be strong, since about 65% of outcome variance could rely on therapeutic alliance, not influenced by raters (patients, therapists, or independent observers), symptoms or severity of patients, treatment orientation and level of formalization (Martin, Garske & Davis, 2000; Flückiger, Del Re, Wampold, Symonds & Horvath, 2012). Cultivating a strong alliance with patients with BPD is fundamental for their improvement (Barnicot, Katsakou, Bhatti, Savill, Fearns & Priebe, 2012). Examining individual sessions with BPD patients, therapist's emphasis on feelings, an empathic attunement and the therapist's active role within sessions reduced patients' distress (Goodman, Anderson & Diener, 2014; Goodman, Edwards & Chung, 2015).

Due to the complexity of BPD personality functioning and the heterogeneity of clinical symptoms, the first phase of DBT treatment needs to last at least for one year and the therapeutic relationship is supposed to be a crucial factor in retaining clients in therapy and in achieving treatment goals (Linehan, 1993; Bedics, Korslund, Sayrs & McFarr, 2013). The therapeutic relationship is viewed dialectically as neither sufficient for promoting change, nor simply a facilitator for therapeutic strategies: instead, it is conceptualized as a process characterized by reciprocity, uniqueness and meaningfulness within each therapeutic couple, in a way that do promote change both in patient and in therapist (Lynch et al., 2006; Robins & Koons, 2000; Heard & Swales, 2009). Linehan (1993) described the therapeutic relationship in DBT as a real relationship, in which the therapist is committed to be honest, genuine, and present. Therapeutic relationship is a strong motivator of change and must be used wisely by therapist to reward desired changes or to extinguish maladaptive behaviors in patients following reinforcement principles (Robins & Koons, 2000). Most of all, accordingly with social learning theory and behavioral contingencies (Heard & Swales, 2009), patient's in-session behaviors toward the therapist are supposed to reflect patterns of behavior in other meaningful relationships, and thus are considered precious opportunities to change problematic interpersonal behaviors (Lynch et al., 2006). In order to use the relationship in a therapeutic way, it must be grounded in reciprocal confidence and collaboration, and the bond with the therapist must be highly valued by the patient (Robins & Koons, 2000). On the other side, Linehan (1993) stressed the importance to adapt treatment's strategies, tasks and therapist's personal style to the individual needs of each patient. From this perspective, DBT therapeutic relationship is similar to the definition of therapeutic alliance of Bordin (1976), which conciliate the dimensions of the interpersonal processes and the technical procedures. Bordin stated that a collaborative relationship consists

of agreement on treatment's goals of the treatment, agreement on tasks and techniques, and a reciprocal positive bond between therapist and patient. The Author suggested that such a working alliance would affect positively the outcomes, sustaining feelings of trust and commitment in patient.

Therapeutic relationship is a specific factor contributing significantly to the adherence to DBT model. In fact, specific DBT strategies are devoted to shape the style of the interaction between therapist and patient (Bedics et al., 2013). The therapeutic style in DBT is dynamic and flued, often compared to dance movements (Linehan, 1993, 2014). Therapist needs to be actively engaged and to quickly adjust his behavior in order to elicit more balanced responses from the patient. More specifically, DBT describes two main communication styles (Linehan, 1993): reciprocal (warm and responsive) and irreverent (direct and sometimes destabilizing, however not invalidating) communication. DBT therapists are expected to balance compassion and acceptance with determination and firmness by maintaining adherence to DBT principles, but avoiding rigidity (Lynch et al., 2006; Robins & Koons, 2000; Heard & Swales, 2009).

Recent studies, conducted by Bedics and Linehan (Bedics, Atkins, Comtois & Linehan, 2012a, 2012b), demonstrated that DBT effects extended beyond symptoms reduction and involved aspects related to self-representation: in fact, DBT patients, both during treatment and after one-year follow-up, reduced negative self-referred thoughts and self-harm behaviors, while they increased a more benevolent attitude toward subjective feelings and self-care. The improvement over other treatment programs was detected also when all compared therapists were experienced clinicians (Bedics et al., 2012a; Bedics, Atkins, Harned & Linehan, 2015). Expert DBT individual therapists reported to dedicate a large amount of time in discussing the commitment along all treatment duration; on the other side, DBT patients' ratings of commitment were associated with fewer suicide attempts and nonsuicidal self-injury (Bedics et al., 2015).

A naturalistic study comparing DBT with a client-centered approach (Turner, 2000) showed that the patients' self-reported therapeutic alliance contributed to treatment outcome more than factors related to the therapeutic model; furthermore, within DBT, different therapists seemed to have different degrees of effectiveness, highlighting the role of the specificity of the therapeutic couple. Burckell and McMain (2011) examined two single cases from a larger clinical sample involved in research on DBT effectiveness (McMain et al., 2009), respectively with a satisfactory and a bad (i.e., drop-out) outcome. The clinical dissertation on the therapeutic process focused on the dimension of the therapeutic relationship, which seemed

to go along with the outcomes: critical aspects were hypothesized to be patients' attitude toward the therapeutic team, their commitment to tasks and goals, the use of dialectic's skills by DBT team itself.

Current research studies did not solve all questions about DBT therapeutic process. As stated by Bedics and colleagues (2012a), since the therapeutic relationship has a fluid nature, further studies are suggested to investigate "the moment-to-moment interpersonal process in individual DBT sessions using observational ratings", in order to "capture the dynamic movement, speed, and flow of a DBT session including therapists' contingent use of affirmation and control in relation to patient behavior" (pp. 75-76).

3.3. The present studies [1]

3.3.1. *Aims*

The present studies are intensive examinations of two single cases aimed at describing the complexity of the therapeutic process in DBT individual sessions over one year of treatment. The following research has a single-case design that fits into the process-outcome strand.

Considered as a whole, the present research is focused on two specific therapeutic couples in a DBT standard program, comprised by the same therapist – an experienced clinician – and two young women with a full Borderline Personality Disorder diagnosis. Patients were different for symptomatology, DSM-IV personality disorder codiagnoses, and personality profiles; moreover, while one therapeutic couple reached positive outcomes after one year of treatment, the other couple had only partially positive results. In other word, the evaluation was carried out on two therapeutic couples sharing the same therapist, but different for patient characteristics and treatment outcome in order to examine the relationships between the outcomes and the process variables. In other words, we wanted to test what was suggested by Burckell and McMain (2011), according to which the outcome of a DBT program depends on both technical and relational dimensions, linked to specific aspects of a therapeutic couple.

Several studies were conducted, each with different objectives, hypotheses and instruments, in order to examine specific dimensions of the therapeutic process. Since the studies share the same subjects, the presentation of the assessment instruments and the results will be carried out in sequence respectively in the sections on the method and the results; this section is left to distinguish the studies on the basis of the questions they were intended to answer. For clarification purposes, **Table 3.4** summarizes aims and hypotheses of each study.

[1] We warmly thank Elizabeth, Joan and their therapist for their permission to use clinical material for research purposes.

Table 3.4. Overview of process studies: variables and hypotheses.

Study	Aims and variables	Analysis	Instruments	Hypothesis
1	**Macro-analysis of the technical aspects: adherence to the DBT model** VARIABLES: • Prototype of a DBT individual session • Prototype of a general psycho-therapeutic approach (focused on reflective functioning)	• Comparisons within couple (Wilcoxon Signed Rank Test, paired t-test) • Comparisons between couples (Mann-Whitney U test, Welch's t-test) • Correlations between prototypes (Spearman-Brown coefficient)	PQS prototypes (Goodman, 2013)	• Good adherence to a DBT prototypical session • No differences between therapeutic couples in the adherence to DBT • Difficulties in working on reflective functioning in the couple with partially good outcome • Positive relation between violation of DBT and interventions preventing reflective functioning
2	**Micro-analysis of the technical aspects: validation interventions**	PRELIMINARY ANALYSIS ON SELECTED SESSIONS • Comparisons within couple (Wilcoxon Signed Rank Test, paired t-test) • Comparisons between couples (Mann-Whitney U test, Welch's t-test)	*DBT Validation Level Coding Scale* (DBT-VLCS; Carson-Wong & Rizvi, 2016)	• Therapist's attention and listening reached the highest scores • Interventions relating past-history events and present experiences were expected to be the less frequent ones • Therapist's attention and listening comparable in the two patients • Therapist's ability to translate into words non-verbalized experiences from patients, to recognize current causes of behavior and internal states were expected to be weaker with the patient with a partial outcome • Therapist's ability to maintain an empathetic, authentic and equal attitude was expected to be weaker with the patient with a partial outcome
3	**Macro-analysis of the therapeutic relation: ways of interaction between the patient-therapist dyad** VARIABLES: • Interaction structures	• Factorial analysis (Principal Component Analysis with Varimax rotation)	*Psychotherapy Process Q-Set* (PQS; Jones, 2000)	***Couple with good outcomes*** • Positive interaction structures (involvement and commitment) • Negative interaction structures (mistrust, need for approval for the patient, patient's difficulties in facing her fragilities) ***Couple with partially positive outcomes*** • Just one positive interaction structure (involvement and commitment) • Several negative interaction structures (aloof therapist; mistrustful or frustrated patient)
4	**Micro-analysis of the therapeutic relation: therapeutic alliance** VARIABLES: • Collaborative and rupture processes in the therapeutic alliance, both from patients and therapist	• Comparisons within couple (Wilcoxon Signed Rank Test, paired t-test) • Comparisons between couples (Mann-Whitney U test, Welch's t-test) • Time series analysis (ARIMA models)	*Collaborative Interactions Scale – Revised Form* (CIS-R; Colli et al., 2014)	• Therapist's collaboration higher than therapist's rupture • Therapist's collaboration higher than patients' collaboration ***Couple with good outcomes*** • Frequent explorative and expressive intervention • High collaboration scores (direct interventions) • Patient's sporadic rupture responses (mainly indirect markers) • Collaboration increased over time, both in therapist and patient • Rupture reduced over time, both in therapist and patient ***Couple with partially positive outcomes*** • Frequent explorative interventions and explanations, few expressive interventions • Low collaboration scores • Patient's frequent rupture responses (both indirect and indirect markers) • Negative therapist's interventions • Collaboration decreased over time, both in therapist and patient • Rupture was stable over time, both in therapist and patient

In line with the previous considerations, in the present research both technical aspects and the relational dimension were considered. Both have been examined according to a dual perspective, macroanalytic and microanalytic (Beebe et al., 2010).

With regard to DBT specific factors from a macroanalytic perspective, the first study was devoted to the examination of the adherence to the DBT model, comparing the closeness of the current sessions to a DBT prototypical session. Also, the examined sessions were compared to a general psychotherapeutic approach prototype; the non-specified approach is defined by a work on the so-called reflective functioning, that is, the effort to identifying, acknowledging, and sequencing inner experiences as private contents (Fonagy, Gergely, Jurist & Target, 2004; Fonagy et al., 1998). More specifically, a moderate-to-high level of adherence to a DBT prototypical session was expected, with only sporadic violations of DBT principles, since the therapist was an experienced clinician with a certified DBT training. For the same reason, no differences were expected between therapeutic couples in the adherence to the DBT prototype. On the other side, difficulties in working on reflective functioning were expected in the couple with only partially good outcome: in fact, given the permanence of problematic aspects in the patient, it is expected that, over treatment, the couple had a greater difficulties in addressing symbolic contents. Finally, since a good clinical practice is a joint factor between different therapeutic frameworks, a positive relation between violation of DBT and interventions preventing reflective functioning was supposed.

On the other hand, the microanalytic dimension related to the technical aspects was focused on validation interventions, considered as diversified and complex interventions based on the target and on the level of depth in which the therapist chooses to act (Linehan, 1993, 1997, 2014). This study, at the moment, represents a preliminary work, since the instrument that has been used has not yet been officially translated and validated in Italy: therefore, only a selection of sessions for each of the two therapeutic couples was preliminarily examined during the year of treatment. Examining the hypotheses in detail, it was expected that the validation interventions are comparable in the two patients with regard to the level of attention and listening to the therapist in session; it was also expected that such interventions reached the highest scores. It was hypothesized that the less frequent interventions in both therapeutic couples were those related to past events and their contribution in influencing the present, since DBT is a therapy oriented to the here-and-now of patients' life. On the other hand, differences were expected with regard to the therapist's ability to translate into words non-verbalized experiences from patients and the ability to recognize current causes of behavior and internal

states: in fact, these interventions were expected to be simpler with the patient with a good outcome, since the therapeutic work with her could be easier. Furthermore, it was expected that the therapist had more difficulties in maintaining an empathetic, authentic and equal attitude with the patient with a partial outcome.

Regarding the relational dimension, the macroanalytic dimension took into account the overall therapeutic process, seen through the lens of the interaction structures in the two therapeutic couples, along with Jones' (2000) conceptualization of the therapeutic relationship. In other words, the dyadic interactions between patient and therapist in each couple were examined, considering the specificity of the patterns of each relationship during treatment.

More specifically, in the couple reaching good outcomes, hypotheses were about relational patterns characterized by an open and willing attitude from the therapist, with positive involvement and commitment from the patient. On the other side, negative interactions characterized by mistrust and hostility, or acquiescence and need for approval from the patients are likely to be found, in accordance with personality fragilities of the patient.

In the same way, in the couple who achieved only partially positive outcomes, it was expected to detect a positive relational pattern, in which the therapist and the patient actively participate and move in the same direction. It is expected, however, to identify several problematic interaction structures, in which difficulties of attunement within the couple emerged: for instance, a normative and aloof therapist, or a mistrustful, wary patient, or a patient who expressed anger and frustration.

With regard to the microanalytic dimension, we focused on a precise analysis of the therapist's interventions and the patients' responses with respect to the therapeutic alliance. Following the model of Safran and Muran (2000; Safran et al, 2002), the frequencies of the interventions of the two members of the dyads were detected in terms of collaborative and rupture processes; moreover, the differences between the two therapeutic couples and the time course of the interventions were investigated. It is a work of a microanalytic type both with respect to the content – since specific therapeutic alliance indices have been taken into consideration – and with respect to the time analysis of the analyzes – in fact, each session has been divided into several segments of equal duration, so to be able to capture changes and happenings in sequence, even within a single session.

As far as hypotheses are concerned, it is expected that in both therapeutic couples the level of collaboration of the therapist will be superior both to the level of rupture and to the average patients' collaboration scores.

Moreover, it is expected that, in the couple with a favorable outcome, the collaborative scores will be particularly high during treatment, with several moments in which the objectives and therapeutic modalities are discussed in a positive and profitable manner. Regarding the rupture processes, it is expected that there are occasional reactions of withdrawal of the patient (for example, an acquiescent attitude) and direct rupture interventions only when compared with emotions connected with her personological fragilities.

On the other hand, in the therapeutic couple with a partially positive outcome, the levels of collaboration are expected to be particularly low during treatment and there are numerous rupture interventions, such as direct (for example, disagreement on therapeutic modalities and objectives), as an indirect type (emotional avoidance behavior on the part of the patient). In parallel, the therapist is expected to face hostile or critical interventions in the session.

Regarding the type of interventions, explorative and expressive intervention were expected to be quite frequent in Elizabeth's sessions; instead, in Joan's sessions, explorative interventions and explanations were supposed to be quite frequent, while expressive interventions were expected to be occasional.

For what concern the trend over time, the collaboration scores of the therapist and of the patient are expected to increase in the couple with a favorable outcome, and to decrease in the couple with partial outcome. On the other hand, it is assumed that rupture scores reduced in the first couple and remained stable in the second couple.

3.3.2. ***Methods***

3.3.2.1. THERAPIST

The therapist was a male expert clinician, with over 35 years of clinical expertise with patients with severe personality disorders, especially with Borderline Personality Disorder. He had a prior psychodynamic-oriented training and practice. Subsequently he had been trained and certified in DBT by Linehan as individual therapist; moreover, his DBT team had been trained and certified. Even if therapist was aware of the patient' s BDP diagnosis and personality profile, he was blind to the study's hypotheses along all treatment duration.

3.3.2.2. PATIENTS

We named the patients after Elizabeth and Joan. They were about 25 and 27 years old, respectively, and came from cities in Northern Italy. Both patients gave their informed consent to the study prior to enrollment; furthermore, their personal information was disguised to prevent their identity.

Elizabeth's problematic behaviors were suicide attempts, self-harm behaviors, sexual promiscuity, abuse of alcohol and anxiolytic drugs. Joan had a substance use disorder in remission and an history of abusive partners; she was in a community setting for a court decision after facilitating her past partner's illegal conducts. For both patients the onset of problematic behaviors was in late adolescence.

Axis II diagnosis were formulated with the Italian version of the *Structured Clinical Interview for DSM-IV Axis II Personality Disorders, Version 2.0* (SCID-II; First et al., 1994; Maffei et al., 1997), a standardized semi-structured interview, assessed by two trained raters, expert doctoral-level clinical psychologists, blind to study aims and to treatment assignment, in the context of patient routine diagnostic assessment.

With regard to Elizabeth, criteria for the diagnosis of Borderline and Narcissistic Personality Disorder were satisfied, with Passive-Aggressive and Histrionic Personality Disorders traits.

In the assessment before treatment, she described herself as serene, calm and submissive until the late adolescence, always ready to satisfy parents' expectations, good at school and trustworthy in friendship with peers. When she was 23, after the ending of a romantic

relationship, she experiences intense feelings of anxiety with frequent panic attacks, and some problematic behaviors appeared, that is, sexual promiscuity and alcohol abuse. Within few months, anxiety symptoms got worse and Elizabeth was always scared to be assaulted by strangers. Self-harm behaviors began with the intention to peace herself. Elizabeth started to use anxiolytic drugs without prescription in association with alcohol, suffering sooner for abstinence symptoms, both physical and psychological. After suicide attempts with a combination of alcohol and drugs, three hospitalization periods followed, but without benefits. Elizabeth started an individual psychotherapy, but it helped her only in a deeper awareness of relational problems, while suicidal ideation, self-harm, problematic behaviors, and panic attacks continued. After another severe suicide attempt with alcohol and drugs, Elizabeth and her parents were suggested to call the San Raffaele Hospital for a treatment specific for BPD.

The assessment of personality profile before treatment assignment depicted Elizabeth as high in impulsivity, sensation seeking behaviors, feelings of fear, self-criticism, and low in emotion regulation and awareness of inner states. She used to look for external causes for any problem, along with uncertainty in long-term personal goals. Also, Elizabeth showed problems in social cooperativeness with sensitivity to social rejection, proneness to anger, and a demanding attitude. Confidence in intimate relationships was low, swinging between need for approval and outrunning significant others.

With regard to Joan, criteria for the diagnosis of Borderline and Passive-Aggressive Personality Disorder were satisfied, with Depressive, Narcissistic and Dependent Personality Disorders traits.

During adolescence, at 14 years old, she began to use cannabis, ecstasy and cocaine, nasal or smoked. At the age of 18 she started to use heroin, initially smoked and soon taken intravenously, up to 5 grams a day. At the age of 19, she requested assistance from health services under parental imposition; however, despite the Buprenorphine therapy, daily heroin consumption persisted to 12 grams. The abuse of substances over time brought to two episodes of overdose. Furthermore, the situation worsened when the patient began to have problems with the law. Returning from a travel in Algeria, she brought with her an Algerian man who was not authorized to enter Italy, and thus she was sentenced to 10 months. In the same year, she was involved in a fight with his boyfriend, a young drug dealer, and was condemned to one year. Two months later, she was arrested for drug dealing and possession, which she held on behalf of her boyfriend; the sentence corresponded to a year and two months, to be served in prison or in a therapeutic community for drug addicts. The patient then spent the following two years and

half at a community. She described this as a negative experience, in which she could not feel "free and peaceful". The discharge from the therapeutic community happened during DBT. Joan began using substances again (cannabis and anxiolytic abuse). After a few weeks, she experienced the desire to use heroin and she started taking Buprenorphine up to 2 mg/day to avoid relapse. At the end of the first phase of DBT, the use of cannabis persisted, while the use of Buprenorphine dropped to 1.5 mg/day.

In the assessment before treatment, the patient defines herself as a person with a marked impulsiveness, sensation-seeking, and the tendency to react excessively. Despite this, she described herself as characterized by pessimism and experiential avoidance – that is, the tendency to avoid situations emotionally connoted, showing excessive anticipatory anxiety. She referred difficulties in the definition and pursuit of long-term goals. Joan showed problems in the recognition, the acceptance and the regulation of emotions, in particular aggressive and sadness feelings, with anger dyscontrol: in fact, emotions – especially those with a negative valence – are experienced as overwhelming, intolerable and uncontrollable. Mindfulness skills were weak, with a clear judging attitude toward herself.

Full SCID-II profiles of both patients are reported in **Table 3.5**. Patients' scores on personality dimensions at the beginning of treatment and after one year are listed in **Table 3.6**.

Table 3.5. Personality Disorders diagnoses and traits of Elizabeth and Joan assessed before treatment enrollment with the Italian version of the *Structured Clinical Interview for DSM-IV Axis II Personality Disorders, Version 2.0* (SCID-II; First et al., 1994; Maffei et al., 1997). Full diagnoses are marked with an asterisk.

Elizabeth	
Borderline Personality Disorder *	
Criteria 1.	Frantic efforts to avoid real or imagined abandonment
Criteria 3.	Identity disturbance: markedly and persistently unstable self image or sense of self
Criteria 4.	Impulsivity in at least two areas that are potentially self-damaging
Criteria 5.	Recurrent suicidal behavior, gestures, or threats, or self-mutilating behavior
Criteria 6.	Affective instability due to a marked reactivity of mood
Criteria 7.	Chronic feelings of emptiness
Criteria 8.	Inappropriate, intense anger or difficulty controlling anger
Narcissistic Personality Disorder *	
Criteria 1.	Has a grandiose sense of self-importance
Criteria 2.	Is preoccupied with fantasies of unlimited success, power, brilliance, beauty, or ideal love
Criteria 4.	Requires excessive admiration
Criteria 7.	Lacks empathy: is unwilling to recognize or identify with the feelings and needs of others
Criteria 8.	Is often envious of others or believes that others are envious of him or her
Passive-Aggressive Personality Disorder	
Criteria 1.	Passively resists fulfilling routine social and occupational tasks
Criteria 2.	Complains of being misunderstood and unappreciated by others
Criteria 3.	Is sullen and argumentative
Histrionic Personality Disorder	
Criteria 1.	Is uncomfortable in situations in which he or she is not the center of attention
Criteria 7.	Is suggestible, i.e., easily influenced by others or circumstances
Joan	
Borderline Personality Disorder *	
Criteria 1.	Frantic efforts to avoid real or imagined abandonment
Criteria 2.	Unstable and intense interpersonal relationships (alternating between extremes of idealization and devaluation)
Criteria 3.	Identity disturbance: markedly and persistently unstable self image or sense of self
Criteria 4.	Impulsivity in at least two areas that are potentially self-damaging
Criteria 6.	Affective instability due to a marked reactivity of mood
Criteria 7.	Chronic feelings of emptiness
Criteria 8.	Inappropriate, intense anger or difficulty controlling anger
Passive-Aggressive Personality Disorder *	
Criteria 1.	Passively resists fulfilling routine social and occupational tasks
Criteria 3.	Is sullen and argumentative
Criteria 4.	Unreasonably criticizes and scorns authority
Criteria 6.	Voices exaggerated and persistent complaints of personal misfortune
Depressive Personality Disorder	
Criteria 2.	Self-concept centers around beliefs of inadequacy, worthlessness, and low self-esteem
Criteria 3.	Is critical, blaming, and derogatory toward self
Narcissistic Personality Disorder	
Criteria 5.	Has a sense of entitlement
Criteria 6.	Is interpersonally exploitative
Dependent Personality Disorder	
Criteria 7.	Urgently seeks another relationship as a source of care and support when a close relationship ends
Antisocial Personality Disorder	
Criteria 3.	Impulsivity or failure to plan ahead
Criteria 6.	Consistent irresponsibility
Conduct Disorder with onset before age 15 years	
Criteria 9.	Has deliberately destroyed others' property
Criteria 10.	Has broken into someone else's house, building, or car
Criteria 11.	Often lies to obtain goods or favors or to avoid obligations
Criteria 13.	Often stays out at night despite parental prohibitions, beginning before age 13 years

Table 3.6. Scores of Elizabeth and Joan on target variables at baseline and after the first year of treatment. Comparison between patients' scores and normative data are listed for self-report questionnaire; Italian normative data were used when available. Critical scores are printed in bold type.

		ELIZABETH				**JOAN**			
		Baseline		**After one year**		**Baseline**		**After one year**	
PRIMARY OUTCOMES									
Suicide attempts (last two years)		11		0		1		0	
SHI	Direct self-harm	6		0		3		0	
	Indirect self-harm	11		1		11		11	
	Total self-harm scores	17		1		14		11	
SECONDARY OUTCOMES		**Score**	***Percentile***	**Score**	***Percentile***	**Score**	***Percentile***	**Score**	***Percentile***
DERS	Nonacceptance	**30**	***99th***	8	*25th*	**22**	***90th***	12	*50th*
	Goals	**24**	***99th***	11	*25th*	**22**	***97.5th***	**16**	***75th***
	Impulse	**30**	***99th***	8	*5th*	**26**	***99th***	**19**	***90th***
	Awareness	19	*50th*	14	*10th*	20	*66th*	**23**	***75th***
	Strategies	**39**	***99th***	11	*10th*	**30**	***97.5th***	**22**	***75th***
	Clarity	**24**	***99th***	10	*33rd*	**18**	***97.5th***	**18**	***97.5th***
	Total score	**166**	***97.5th***	62	*On average*	**138**	***97.5th***	**110**	***84th***
AQ	Physical aggressiveness	22	*66th*	9	*2.5th*	**40**	***99th***	**24**	***75th***
	Verbal aggressiveness	**18**	***75th***	14	*33rd*	**20**	***90th***	**17**	***75th***
	Anger	**31**	***99th***	10	*10th*	**29**	***99th***	**24**	***90th***
	Hostility	**34**	***95th***	26	*66th*	25	*50th*	25	*50th*
	Total score	**105**	***95th***	59	*10th*	**114**	***97.5th***	**90**	***75th***
BIS-11	Attention impulsiveness	**22**	***75th***	13	*5th*	20	*66th*	19	*50th*
	Motor impulsiveness	**32**	***95th***	20	*33rd*	**29**	***90th***	22	*50th*
	Nonplanning impulsiveness	28	*66th*	21	*10th*	**34**	***90th***	**35**	***95th***
	Total score	**82**	***95th***	54	*10th*	**83**	***95th***	**76**	***75th***
FFMQ	Observe	**15**	***2.5th***	28	*66th*	25	*33th*	**19**	***10th***
	Describe	26	*33rd*	26	*33rd*	**25**	***25th***	26	*33th*
	Acting with awareness	**18**	***5th***	32	*66th*	**21**	***10th***	**21**	***10th***
	No judge	**8**	***<1th***	33	*75th*	**24**	***25th***	26	*33th*
	No reactivity	**7**	***<1th***	27	*95th*	**16**	***10th***	**18**	***25th***
WHOQoL	Physical health	**10.29**	***2.5th***	13.71	*On average*	**9.71**	***2.5th***	14.29	*On average*
	Psychological health	**6.00**	***2.5th***	12.67	*On average*	**9.33**	***2.5th***	**12.00**	***16th***
	Social relationships	**6.67**	***2.5th***	16.00	*On average*	**12.00**	***2.5th***	16.00	*On average*
	Environment	**10.00**	***16th***	14.00	*On average*	12.00	*On average*	15.50	*On average*

Notes. SHI: Self-Harm Inventory; DERS: Difficulties in Emotion Regulation Scale; AQ: Aggression questionnaire; BIS-11: Barratt Impulsiveness Scale – 11; FFMQ: Five Facet Mindfulness Scale; WHOQoL: World Health Organization Quality of Life BREF

3.3.2.3. TREATMENT

Treatment was delivered at San Raffaele Hospital, Milan, Italy, in a DBT program for outpatients. According with DBT standard program, the patients attended both to weekly individual sessions lasted for about 50-60 minutes (38 sessions for Elizabeth and 37 for Joan), and weekly skills training sessions in group setting lasted for two hours. Also, the individual therapist gave his availability for phone consultation and attended to weekly team meetings.

Pharmacotherapy was prescribed by a female psychiatrist of the San Raffaele Hospital with more than 10 years of experience with patients with Borderline Personality Disorder. Prescribed medications for both patients were selective serotonin reuptake inhibitors (SSRIs) and anxiolytic no-benzodiazepines.

Table 3.7 summarizes treatment target for both patients.

Table 3.7. Treatment target for Elizabeth and Joan.

Patients	Elizabeth	Joan
Primary targets (behavioral control)	1. Self-injurious behavior: suicidal attempts, self-injury (direct and indirect) 2. Behavioral interferences with quality of life: alcohol and drug abuse 3. Relationship instability and promiscuous sexuality, control of anger	1. Self-injurious behavior: self-injury (direct and indirect), overdose 2. Behavioral interferences with quality of life: alcohol and drug abuse, impulsive behavior 3. Lack of self-respect in relationship, relational dependence, irritability and outbursts
Secondary targets (dialectical dilemmas)	1. Self-invalidation (vs. emotional vulnerability) 2. Apparent competence (vs. active passivity) 3. Unrelenting crisis (vs. inhibited grieving)	1. Self-invalidation (vs. emotional vulnerability) 2. Inhibited grieving (vs. unrelenting crisis) 3. Active passivity (vs. apparent competence)

3.3.3. ***Measures***

3.3.3.1. Outcome measures

Outcome measures were assessed regularly every three months over one year; in accordance with the aims of the resent study, only scores at baseline and after one-year of treatment are discussed. The primary outcome measures were the frequency of suicidal and nonsuicidal self-harmful behaviors. Suicide attempts were reported by the DBT team, while nonsuicidal self-injury were assessed by the *Self-Harm Inventory-22* (SHI-22; Sansone, Wiederman & Sansone, 1998), a self-report questionnaire measuring the frequency of intentional self-injurious behaviors, both direct (i.e., cutting, hitting, burning, scratching) and indirect (i.e., purposely lost jobs or relationships).

Along with DSM-5 (APA, 2013) BPD trait-level description of core disturbances in self and interpersonal areas, emotional, cognitive and behavioral functioning were examined as secondary outcome measures. Emotional dysregulation was assessed by the *Difficulties in Emotion Regulation Scale* (DERS; Gratz & Roemer, 2004), while anger and aggressiveness were measured by the *Aggression Questionnaire* (AQ; Buss & Perry, 1992). Impulsivity and risk taking were assessed by the *Barratt Impulsiveness Scale-11* (BIS-11; Patton, Stanford & Barratt, 1995). Considering the critical role in BPD patients of mindfulness skills (e.g., Wupperman, Neumann, Whitman, & Axelrod, 2009), the *Five Facet Mindfulness Questionnaire* (FFMQ; Baer, Smith, Hopkins, Krietemeyer & Toney, 2006) was administered. Finally, quality of live aspects was investigated by the *World Health Organization WHoQoL-BREF* (The WHoQoL Group, 1998).

3.3.3.2. Psychotherapy Process Q-Set

The *Psychotherapy Process Q-Set* (PQS; Jones, 2000) is a rating scale developed to describe the psychotherapeutic process at the level of individual sessions. It is comprised by 100 items relating to therapist behaviors (41 items), patient behaviors (40 items), and therapist-patient interactions or session's climate (19 items). Transcribed, audiotaped or videotaped session are evaluated by independent observers with a Q-sort method: all items have to be sorted in nine categories, ranging from the most uncharacteristic one (lowest scores) to the most characteristic one (highest scores). This ipsative procedure forces raters to place a fixed number

of items in each category, generating a normal distribution. PQS uses the whole session as the unit of analysis, thus facilitating a more representative overview of the therapeutic process.

PQS items were selected from the scientific literature to cover many theoretical orientations, including psychodynamic, cognitive-behavioral, interpersonal, humanistic/ existential, gestalt, and rational-emotive, demonstrating reliability and validity across a variety of different treatment samples (for a review, see Ablon, Levy & Smith-Hansen, 2011; Lingiardi, Bonalume, Colli, Gentile & Tanzilli, 2011). Mean intraclass correlation coefficients ranged between .73 and .89 per rater pair, while reliability analyses for individual items ranged between .50 and .95 across samples (Ablon et al., 2011). Moreover, studies with single-case designs used PQS to examine mechanisms of therapeutic action, whether therapists adhere to defined technique, how process relates to outcome and how process changes over time (e.g., Ablon et al., 2011; Goodman et al., 2014, 2015; Lingiardi, Colli et al., 2011).

Goodman (2013) asked to expert clinicians to define prototypical sessions of DBT, TFP and the use of RF by PQS items, considering ideally conducted sessions. Ratings were composited and examined through subsequent factorial analysis. Three prototypes were defined, each one comprised by a list of the most and the least characteristic PQS items: the first ones identified interventions which should be frequent if sessions would be adherent to the model, while the least characteristic items represented behaviors and relational situations violating the theoretical perspective and the goals within each approach.

In the present study, videotapes of all individual sessions of the patients over one-year of DBT standard treatment were evaluated. PQS was scored by independent observers, trained and supervised (*ICC*s > .6). PQS scores were used for computing the mean score of each session of Goodman's prototypes (2013) of DBT and RF, considering for each prototype both the most ad the least characteristic items. Also, PQS items were analyzed in order to result the interaction patterns of the therapeutic dyad.

3.3.3.3. Collaborative Interactions Scale – Revised Form

The *Collaborative Interactions Scale – Revised Form* (CIS-R; Colli et al., 2014, 2017) is the updated and adapted version of the *Collaborative Interactions Scale* (Colli & Lingiardi, 2009).

CIS has been applied in several studies (see Colli et al., 2017). A first revised version of the scale was developed (Colli, Gentile, Condino, & Lingiardi, 2014), followed by a more recent version (Colli, Gentile, Condino, & Lingiardi, 2017).

CIS and CIS-R are validated rating scales used both in psychotherapy research and in clinical practice (Colli et al., 2017). The underlying theory of the scale refers to the concept of alliance, described in the previous chapters, intended as the emerging product of a mutual collaboration between patient and therapist: the alliance is a process that is declined in cycles of rupture and repair (Safran & Muran, 2000).

Starting from verbatim transcripts of audio or videotaped psychotherapy sessions, CIS-R allows to evaluate the collaborative and rupture processes that occur between patient and therapist. CIS-R consists of two scales: one related to the processes concerning the therapist (CIS-T) and the other related to the processes concerning the patient (CIS-P). CIS-T is divided into four sections. The first one describes the *form* of intervention based on an expressive-supportive continuum. The second one, defined as *object*, is in turn divided into direct collaborative processes and indirect collaborative processes. Finally, the last subsection concerns rupture interventions. CIS-P is also divided into four subsections: the first two concern the rupture markers, respectively direct and indirect, while the last two describe collaborative processes, direct as indirect. **Table 3.8** summarizes CIS-R subscales.

It is necessary to make some clarifications concerning what distinguishes a direct marker from an indirect one, following Safran & Muran (2000) model. The direct collaboration processes touch on aspects related to the therapeutic relationship, the objectives and the tasks set in therapy; the indirect ones, although also essential for the establishment of an alliance, do not include aspects related to the therapeutic setting and treatment. Finally, direct rupture markers correspond to explicit fractures; the indirect ones are instead described in terms of withdrawal, detachment and avoidance. Also, the distinction between direct and indirect therapist's interventions is derived from the literature on therapist metacommunication strategies and therapeutic immediacy (see Colli et al., 2017).

Table 3.8. Summary of CIS-R subscales (Colli et al., 2014).

CIS-P	**COLLABORATIVE PROCESSES** • **Direct collaborative processes (DCP):** patient's communications which make explicit reference to the therapeutic relationship, therapy or therapeutic changes, and which are indicative of a positive collaboration with the therapist • **Indirect collaborative processes (ICP):** patient's communications indicating a collaboration with therapist, without refering explicitly and/or directly to the therapeutic relationship or treatment
	RUPTURE MARKERS • **Direct rupture markers (DRM):** the patient expresses in a direct and/or confrontative way his/her discomfort towards the therapeutic relationship and/or disagreement with the tasks and/or goals of the therapy • **Indirect rupture markers (IRM): i**l paziente sembra comunicare indirettamente di non essere in sintonia circa i passi e/o gli obiettivi terapeutici. Sembra a disagio nella relazione
CIS-T	The degree of therapist's collaboration can be defined according to the ability to use the patient's communication, regardless of patient's response
	FORM OF THERAPIST INTERVENTIONS • **Interventi supportivi:** sostengono il paziente, lo rafforzano (rispecchiamento, validazioni, rinforzi, opinioni o consigli) • **Interventi esplicativi:** si spiega qualche cosa al paziente (illustrare il funzionamento di un meccanismo psicologico e/o di un sintomo, il razionale della terapia, le regole del setting, gli obiettivi del trattamento o altri aspetti riguardanti la relazione terapeutica) • **Interventi esplorativi:** favoriscono una maggiore elaborazione da parte del paziente (chiarificazioni, riformulazioni, domande aperte, incoraggiamenti a elaborare attraverso espressioni come "mmh mmh" oppure la ripetizione dell'ultima parola detta dal paziente) • **Interventi espressivi:** è preponderante la componente interpretativa (mettere in connessione affetti e situazioni, oppure far osservare elementi passati sotto traccia; interpretazioni di transfert, interpretazioni delle difese, confrontazioni, interventi sul qui ed ora della seduta, osservazioni, ricostruzioni) • **Supportive interventions:** support the patient, strengthen it (mirroring, validation, reinforcements, opinions or advice) • **Explicative interventions:** explaining something to the patient (illustrating the functioning of a psychological mechanism and/or a symptom, the therapy rationale, setting rules, treatment goals or other aspects concerning the therapeutic relationship) • **Exploratory interventions:** encourage deeper elaboration by the patient (clarifications, re-wording, open-ended questions, encouragement to elaborate) • **Expressive interventions:** the interpretative component is predominant (connecting affections and situations, or observing elements not noticed, transference interpretations, interpretations of defenses, confrontations, interventions on the here and now of the session, observations)
	OBJECT OF INTERVENTIONS • **Indirect Therapist Interventions (ITI):** interventions that, although not directly related to the therapy or the therapeutic relationship, contribute indirectly to the construction and the maintenance of the alliance with the patient • **Direct Therapist Interventions (DTI):** interventions focused on the relationship or aspects of therapy • **Rupture Interventions (RI):** interventions that contribute negatively to the therapeutic process

The evaluation is carried out with a dedicated procedure; in the present study the coding protocol described by Colli and colleagues (2014) was used. Before starting the coding process, raters read the transcript of the entire session or listen/watch the record. After that, raters divided each session into ten segments of equal duration; the unit of analysis was therefore every single segment. Subscales were assessed ranging from 0 to 4, based on the frequency and the relevance of the marker within the segment. For both therapist's and patient's scales, global scores of collaboration and rupture were assessed (range from 0 to 3).

In the present study, the agreement between raters was fairly good for both patients (*ICC*s ≥ .6); analyzes were conducted on the average scores among raters.

3.3.3.4. DBT Validation Level Coding Scale

As previously stated in the first section on DBT overview, the validation in DBT balances the proneness to change supported by the behavioral component of the treatment.

Theoretical fundamentals in the construct of validation could be rooted firstly in the Self-Verification Theory (Swann, 1981, 1997), which stated that stable and coherent self-views, rather than disconfirmation, help people to define and organize their experiences, in terms of ways of interpreting information, selecting social contexts, and in defining personal attitudes and behavioral expressions. The problematic counterpart of excessive use of self-validation is represented by the tendency to self-confirm one's own convictions and habits, falling into excessively rigid positions and behaviors, with difficulties in adapting to context and changes.

Another important theoretical reference that is useful to mention in order to understand the validation construct in DBT is the so-called affective perseverance, originally theorized by Zajonc (1980, 1998) and later taken up by Sherman and Kim (2002). According to the authors, it is necessary to distinguish between cognitive judgments (which are based on the polarization between true and false facts) and affective preferences (which are based on the polarization between positive and negative experiences). In contrast to cognitive judgments, affective preferences are not easily changed by subsequent information and cognitive invalidation does not automatically lead to affective invalidation. "The reason why affective judgments seem so irrevocable is that they 'feel' valid. [...] We trust our reactions, we believe they are 'true' and that they accurately represent an internal state or condition" (Zajonc, 1980; p. 157). Therefore, cognitive strategies have proven relatively ineffective at nullifying affective preferences or

judgments, which seemed to have their own specificity (Wegner & Gold, 1995; Edwards & Smith, 1996).

The goal of validation in the DBT, in light of the biosocial theory depicted in the first section (Linehan 1993), is to reduce the negative impact of self-invalidation and allow the development of self-validation mechanisms (Swenson, 2016); although it is considered the most important part of the strategies aimed at acceptance, validation also plays an important role in elicit changes in emotional responses. More specifically, validation helps soothe escalating negative emotion, increase effective communication, slow negative reactivity, build a trusted relationship between a therapist and patient, and increase the patient's own self-respect (Linehan, 1993).

One of the advantages of a good use of validation is to keep the patient in therapy, as evidenced by a study comparing a modified version of the DBT – which only included validation strategies – with a standard DBT treatment; the results showed that the former program, besides favoring a notable reduction of the symptoms, showed the total absence of dropout cases (Linehan et al., 2002). Despite these evidences, it remains questionable if a treatment oriented simply on validation could be truly useful for patients, since it would be a violation of DBT principles (Linehan, 1993, 2014).

In the DBT model, validation interventions are divided into six levels (Linehan, 1997; see **Table 3.9**). While the first three levels make it possible to understand the patient's behavior, levels four and five make it possible to understand the validity of a behavior in light of the current and past context, and the last level allows to validate the patient in its entirety.

Although validation is a complex and nuclear strategy in the DBT treatment (Linehan, 1993, 2014), up to now little empirical research has been conducted on the impact of the validation levels on the therapeutic relationship. The *DBT Validation Level Coding Scale* (DBT-VLCS; Carson-Wong & Rizvi, 2016) is a rating scale built for the evaluation of validation in DBT individual sessions. The theoretical framework behind the construction of this scale is the DBT model (Linehan, 1997), and thus DBT-VLCS is composed of seven subscales (validation levels, VL): the first six reflect the levels of validation as the therapeutic interventions in DBT, while the seventh refers to the patient's response to therapeutic intervention. Each validation level is assessed on a four-point Likert scale, based on the frequency and adherence of the therapeutic intervention to the DBT model; the patient's

response is evaluated according to the feedback expressed verbally or non-verbally in relation to the therapist's interventions and attitudes.

Table 3.9. Validation levels in DBT (Linehan, 1993, 1997, 2014).

Level	Description
1	Paying attention, listening to and observing the patient's statements, feelings, and behaviors, as well as demonstrating an active effort to understand the patient
2	Accurate reflection or restatement of the patient's feelings, thoughts, and assumptions
3	Communication to the patient that the therapist understands the patient's experience (emotions, thoughts and behaviors) in response to the event that have not been verbalized (i.e., "mindreading")
4	Communication from the therapist that all behaviors are caused by certain events, including past learning or biological dysfunction
5	Communication from the therapist that all behavior is justifiable, reasonable, or meaningful in terms of the present context and normative biological functioning
6	Therapist sees and responds to the strengths and capacity of the patient while maintaining a firm empathic understanding of the patient as he/she is (i.e., radical genuineness, equality)

In the validation study, DBT-VLCS showed good psychometric properties: in fact, all the subscales show to have good reliability and validity data; only VL5 proved to be reliable, but more uncertain in terms of agreement among evaluators, suggesting paying attention to discrepancies between clinical and research use in this sub-scale (Carson-Wong & Rizvi, 2016).

In a subsequent study (Carson-Wong, Hughes & Rizvi, 2016), DBT-VLCS was used to compare the frequency and accuracy of therapeutic validation in relation to changes in patients' emotional state during sessions; the emotional state of the patients was detected through the

Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), administered at the beginning and end of each session. The results suggested that an increase in therapeutic validation was associated with an increase in positive affectivity and a decrease in negative affectivity, while a less validating attitude from the therapist was associated with a decrease in positive affectivity, without generating significant alterations in the negative affectivity. Surprisingly, an increase in negative affectivity was also seen in the increase in the frequency of use of VL4. The results showed that there was no significant association between the change in patients' emotions and the general level of validation of the therapist; rather, specific therapeutic interventions included in articulated validation strategies seem to be related to changes in the patient.

DBT-VLCS was originally developed to be applied to the whole session. Here, however, it was considered more informative to follow the CIS-R signature protocol, whereby the sessions were divided into ten segments of the same duration and evaluations were conducted on the segments; an average score of the individual levels was also calculated for each session.

In this study, since DBT-VLCS has not yet been officially translated and validated in Italy, only a selection of ten sessions for each of the two therapeutic couples was preliminarily examined within the year of treatment. The agreement between the evaluators was very good for both patients ($ICC > .7$ for all scales); the analyzes were conducted on the average scores among evaluators.

3.3.4. ***Statistical analyses***

Since variables significantly deviated from a normal distribution, analyses were preferentially conducted with nonparametric methods. For nonparametric analysis, the Monte Carlo simulation was used, based on 10000 samples. Stating the high number of comparisons, in order to avoid Type I errors – i.e., incorrect rejection of a true null hypothesis or identification of "false positive" finding – the nominal significance level was adjusted with the Bonferroni procedure and corrected *p* values were reported.

Comparisons within each couple (i.e., PQS prototypes, CIS-R mean scores) were tested with the Wilcoxon Signed Rank Test, and with a paired sample t-test in addition.

Mann-Whitney *U* test was run for comparing couples; however, since *U* is dependent on the shape of the distribution and perform worse in case of unequal variances (Rasch, Kubinger & Moder, 2011), the Welch's t-test (that is, a t-test for unequal variances) was run in addition.

In order to identify interaction structures during treatment, an exploratory factor analysis was conducted with a Principal Component Analysis (PCA) applying a Varimax rotation. Parallel analysis (O'Connor, 2000) was used to select the number of factors, a method considered more efficient and reliable than eigenvalues. Parallel analysis generated a random dataset with Monte Carlo method with the same numbers of observations and variables as the original data, then eigenvalues of the correlation matrix from the simulated data were computed. The comparison of the number of components between the simulated dataset and the observed dataset suggested the number of factors to retain. In the description of factors, along with suggestions from the scientific literature (Comrey & Lee, 1992; Tabachnick & Fidell, 2007), only items with an absolute value of factor loading equal or above to 0.55 were retained, a threshold considered good or satisfactory.

Time series analyses were performed to analyze the trend over time of the variables and the temporal relations between them. The Autoregressive Integrated Moving Average Models (ARIMA; Box & Jenkins, 1976; Box, Jenkins, Reinsel & Ljung, 2016) were used. ARIMA are linear dynamic models, developed to model non-stationary processes, in other words when the mean and variance of the analyzed variables are constant at least in the first two moments of the series and when it is assumed that the two observations are non-independent one on the other. Therefore, ARIMA models are suitable for the study of single cases in psychotherapy, where observations are conducted on the same patient and are therefore related to each other.

Relations between PQS prototypes mean scores were examined with nonparametric correlation analysis (Spearman-Brown coefficient) to assess monotonic relationships.

Statistical analyzes were carried out using SPSS software version 22.

3.3.5. ***Results***

3.3.5.1. OUTCOMES AFTER ONE YEAR

Patient's scores at baseline and after the first year of treatment, and comparisons with normative data, were listed in **Table 3.6**.

At the beginning of treatment, both patients described themselves as exploratory and impulsive, with difficulties in attention and psychomotor restlessness. They reported to be proneness to anger, preoccupation, ruminative and pessimistic thinking. Difficulties in the regulation of negative affectivity emerged, in particular linked to difficulties in put experiences in words, in the acceptance of intense emotions and in the ability to manage emotional activations with adaptive strategies. Mindfulness skills of observation, awareness and nonjudgmentalness were weak. The perception of physical, psychological and relational quality of life was negative; the perception of the environment was fulfilled of hostility.

After one year, both patients reported no more suicide attempts, with only sporadic episodes of indirect self-harm for Elizabeth and still quite frequent episodes of indirect self-harm for Joan.

Regarding Elizabeth, all emotion regulation dimensions, levels of impulsivity and aggressiveness, and quality of life became comparable with non-clinical subjects. Significant improvements were detached in mindfulness skills. Marginal difficulties remained in the self-esteem dimension and in aspects of intimacy in the closest relationships.

On the other side, for Joan, therapy at the end of the first DBT phase had a partial outcome: the patient showed a less marked and more controlled impulsivity, but, at the same time, she reported feelings of depression, and residual difficulties in planning and in aggressiveness management. Moreover, she was still lacking in emotional regulation, mindfulness skills, and self-directedness, with improvements only in the dimension of an accepting attitude. Her quality of life remained low and unsatisfactory.

3.3.5.2. PROTOTYPES OF TREATMENT MODELS

As previously stated, the adherence of the sessions to the DBT model was examined, in order to verify the respect of DBT principles, the absence of DBT violations, and the difference with standard psychotherapy. In accordance with Goodman (2013), PQS prototypes of a good

DBT session and of a failure in DBT rules were used; moreover, ordinary psychotherapy was considered fully depicted by interventions supporting reflective function.

Descriptive statistics for PQS prototypes are listed in **Table 3.10**. The scores of items of PQS prototypes are listed in **Table 3.11**.

In Elizabeth sessions, DBT prototype showed the highest mean score (M = 6.58, SD = 0.311), significantly higher than the prototype with least characteristic DBT items (M = 3.19, SD = 0.358), both with parametric paired t-test, $t_{(37)} = 43.517$, $p < .001$, and nonparametric test, Z = -5.373, $p < .001$, Monte Carlo simulation 99% C.I.: .000 - .000. The RF prototype (M = 5.48, SD = 0.313) was lower than DBT prototype, both with parametric paired t-test, $t_{(37)}$ = 17.316, $p < .001$, and nonparametric test, Z = -5.373, $p < .001$, but higher than anti-DBT prototype, both with parametric paired test, $t_{(37)} = -23.952$, $p < .001$, and nonparametric test, Z = -5.373, $p < .001$, Monte Carlo simulation 99% C.I.: .000 - .000. The prototype defined by least characteristic items for reflective functioning had a quite low mean score (M = 3.82, SD = 0.368), significantly lower than DBT prototype, both with parametric paired test, $t_{(37)} = 32.288$, $p < .001$, and nonparametric test, Z = -5.373, $p < .001$, and RF prototype, both with parametric paired test, $t_{(37)} = 17.315$, $p < .001$, and nonparametric test, Z = -5.373, $p < .001$, Monte Carlo simulation 99% C.I.: .000 - .000, but higher than the anti-DBT prototype, both with parametric paired test, $t_{(37)} = -8.624$, $p < .001$, and nonparametric test, Z = -5.199, $p < .001$, Monte Carlo simulation 99% C.I.: .000 - .000.

Table 3.10. Descriptive statistics of patients' scores on DBT and RF prototypes defined by Goodman (2013).

	Patient									
	Elizabeth ($N_{sessions}$ = 38)					**Joan ($N_{sessions}$ = 37)**				
	Mean	*Median*	*SD*	*Min*	*Max*	*Mean*	*Median*	*SD*	*Min*	*Max*
PQS DBT prototype (most characteristic items)	6.58	6.56	0.311	5.90	7.25	6.42	6.40	0.377	5.60	7.20
PQS DBT prototype (least characteristic items)	3.19	3.19	0.358	2.33	4.06	3.65	3.61	0.507	3.00	5.00
PQS RF prototype (most characteristic items)	5.48	5.45	0.313	4.73	6.18	5.62	5.59	0.507	4.55	6.45
PQS RF prototype (least characteristic items)	3.82	3.84	0.368	3.04	4.58	4.53	4.58	0.383	3.71	5.33

Table 3.11. Descriptive statistics of PQS items of DBT and RF prototypes for both patients.

Prototype	PQS items		Elizabeth		Joan	
	N.	Content	*Mean*	*SD*	*Mean*	*SD*
DBT Most characteristic items	2	Therapist draws attention to patient's non-verbal behavior.	2.94	0.961	3.77	1.539
	4	The patient's treatment goals are discussed.	5.57	1.248	7.03	1.514
	6	Therapist is sensitive to the patient's feelings, attuned to the patient; empathic.	8.13	0.557	6.89	1.113
	18	Therapist conveys a sense of non-judgmental acceptance.	8.47	0.421	6.66	1.142
	28	Therapist accurately perceives the therapeutic process.	8.09	0.630	7.32	0.818
	31	Therapist asks for more information or elaboration.	7.13	0.608	7.25	0.837
	38	There is discussion of specific activities or tasks for the patient to attempt outside of session.	5.00	1.591	6.57	1.670
	69	Patient's current or recent life situation is emphasized in the session.	8.16	0.905	8.53	.707
	72	Patient understands the nature of therapy and what is expected.	6.80	0.866	5.03	1.467
	85	Therapist encourages patient to try new ways of behaving with others.	5.48	1.293	5.16	1.717
		TOTAL MEAN SCORE	**6.58**	**0.311**	**6.42**	**0.377**
DBT Least characteristic items	9	Therapist is distant, aloof.	2.73	1.011	3.49	1.529
	14	Patient does not feel understood by therapist.	2.77	0.871	3.16	0.949
	36	Therapist points out patient's attempts to ward off awareness of threatening information or feelings.	3.79	1.093	4.28	1.324
	39	There is a competitive quality to the relationship.	2.89	0.956	1.89	1.084
	51	Therapist condescends to or patronizes the patient.	1.94	0.674	3.65	1.402
	67	Therapist draws the patient's attention to wishes, feelings, or ideas that may not be in awareness.	4.96	1.265	5.07	1.533
	77	Therapist is tactless.	1.64	0.664	2.87	0.949
	91	Memories or reconstructions of infancy and childhood are topics of discussion.	2.29	1.315	4.00	1.389
	93	Therapist refrains from stating opinions or views of topics the patient discusses.	5.66	1.229	4.45	1.438
		TOTAL MEAN SCORE	**3.19**	**0.358**	**3.65**	0.507
RF Most characteristic items	3	Therapist's remarks are aimed at facilitating patient speech.	7.36	0.702	6.85	1.084
	6	Therapist is sensitive to the patient's feelings, attuned to the patient; empathic.	8.13	0.557	6.89	1.113
	46	Therapist communicates with patient in a clear, coherent style.	8.09	0.517	7.39	1.057
	48	The therapist encourages independence of action or opinion in the patient.	5.57	1.002	6.07	1.515
	68	Real vs. fantasized meanings of experiences are actively differentiated.	3.44	1.755	4.84	0.979
	69	Patient's current or recent life situation is emphasized in the session.	8.16	0.905	8.53	0.707
	79	Therapist comments on changes in patient's mood or affect that occur during the hour.	2.95	1.074	4.09	1.234
	81	Therapist emphasizes patient feelings in order to help him or her experience them more deeply.	6.42	0.747	7.03	1.206
	98	The therapy relationship is a focus of discussion.	2.91	1.390	3.41	2.052
	99	Therapist raises questions about the patient's view.	5.39	1.316	4.55	1.572
	100	Therapist draws connections between the therapeutic relationship and other relationships.	1.82	0.858	2.21	1.184
		TOTAL MEAN SCORE	**5.48**	**0.313**	**5.62**	0.507
RF Least characteristic items	5	Patient has difficulty understanding the therapist's comments.	3.00	0.818	3.66	1.014
	9	Therapist is distant, aloof.	2.73	1.011	3.49	1.529
	12	Silences occur during the hour.	3.74	0.924	4.29	1.057
	17	Therapist actively exerts control over the interaction.	5.84	1.034	6.90	1.366
	27	Therapist gives explicit advice or guidance.	5.86	0.779	7.24	1.387
	34	Patient blames others, or external forces, for difficulties.	4.61	1.360	5.12	1.916
	39	There is a competitive quality to the relationship.	2.89	0.956	1.89	1.084
	44	Patient feels wary or suspicious of the therapist.	2.81	0.817	2.20	0.949
	51	Therapist condescends to or patronizes the patient.	1.94	0.674	3.65	1.402
	52	Patient relies upon therapist to solve his/her problems.	4.73	0.951	7.33	1.258
	66	Therapist is directly reassuring	6.07	1.163	5.72	1.821
	77	Therapist is tactless.	1.64	0.664	2.87	0.949
		TOTAL MEAN SCORE	**3.82**	**0.368**	**4.53**	0.383

In Joan sessions, PQS items of DBT prototype showed moderate-to-high scores (M = 6.42, SD = 0.377), while PQS items concerning DBT violations had low scores (M = 3.65, SD = 0.507); the difference between them was significant, both with parametric paired test, $t_{(36)}$ = 1.516, p < .001, and nonparametric test, Z = -5.303, p < .001, Monte Carlo simulation 99% C.I.: .000 - .000. PQS items assessing reflective function showed intermediate scores (M = 5.62, SD = 0.507), lower than DBT prototype, both with parametric paired test, $t_{(36)}$ = 7.07, p < .001, and nonparametric test, Z = -4.941, p < .001, Monte Carlo simulation 99% C.I.: .000 - .000, but higher than DBT violations, both with parametric paired test, $t_{(36)}$ = -15.909, p < .001, and nonparametric test, Z = -5.303, p < .001, Monte Carlo simulation 99% C.I.: .000 - .000. The prototype defined by least characteristic items for reflective functioning had a quite low mean score also for Joan (M = 4.53, SD = 0.383), lower than DBT prototype, both with parametric paired test, $t_{(36)}$ = 18.153, p < .001, and nonparametric test, Z = -5.303, p < .001, Monte Carlo simulation 99% C.I.: .000 - .000, and RF prototype, both with parametric paired test, $t_{(36)}$ = 10.003, p < .001, and nonparametric test, Z = -5.169 p < .001, Monte Carlo simulation 99% C.I.: .000 - .000, but higher than the anti-DBT prototype, both with parametric paired test, $t_{(36)}$ = -8.996, p < .001, and nonparametric test, Z = -5.092, p < .001, Monte Carlo simulation 99% C.I.: .000 - .000.

Correlation analysis showed a significant negative association between RF prototype and least characteristic DBT items, ρ = -.423, p = .008 in Elizabet sessions, suggesting that violating DBT principles could go along with a reduction of interventions supporting reflective functioning. On the other side, in Joan sessions, a negative correlation was found between PQS items defining positive and negative DBT interventions, ρ = -.453, p = .005.

Comparing patients, Joan sessions showed significantly higher scores on DBT least characteristic items, U = 312, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and also on RF least characteristic items, U = 129.5, p < .001, Monte Carlo simulation 99% C.I.: .000-.000. Results were confirmed also by independent sample t-test: for DBT less characteristic items, $t_{(73)}$ = 4.602, p < .001, d = 1.077, r = 0.474, and for RF less characteristic items, $t_{(73)}$ = 8.156, p < .001, d = 1.909, r = 0.69.

Overall, both in Elizabeth and in Joan sessions, DBT prototype showed the highest mean score and the anti-DBT prototype the lowest mean score, while RF prototype reached intermediate scores. Results confirmed a good adherence to DBT model, with only negligible infractions of DBT principles; however, Joan sessions seemed to be more prone to violation of DBT and good clinical practice.

3.3.5.3. INTERACTION STRUCTURES: ELIZABETH

With regard to Elizabeth sessions, parallel analysis suggested to retain five factors. The first step of factorial analysis, conducted with Oblimin rotation, showed low correlations between factors, far below the threshold of .3 in absolute value, ranging from $r_{1\text{-}5}$ = -.077 and $r_{3\text{-}5}$ = -.006. Subsequent factorial analysis could be run testing models with orthogonal factors, i.e., Principal Component Analysis with Varimax rotation. The final models explained overall the 41.39% of the observed variance.

Factorial analysis on PQS items suggested five interaction structures:

1) Patient's positive engagement: participation and commitment
2) Patient's negative engagement: need for approval
3) Patient's negative engagement: distrustful attitude
4) Discomfortable emotions processing
5) Therapist's positive responsiveness

As previously stated, in the description of factors, along with suggestions from the scientific literature (Comrey & Lee, 1992; Tabachnick & Fidell, 2007), items with an absolute value of factor loading equal or above to 0.55 were retained, a threshold considered good or satisfactory. Descriptive statistics of factors defining interactions' patterns of Elizabeth are displayed in **Table 3.12**. The matrix of rotated principal components is showed in **Table 3.13**.

3.3.5.4. INTERACTION STRUCTURES: JOAN

With regard to Joan sessions, parallel analysis suggested a four-factors solution. Oblimin rotation showed very low correlation coefficients between factors, ranging from $r_{1\text{-}4} = .175$ and $r_{3\text{-}4} = .001$, far below the suggested threshold of $r < |.3|$. Principal Component Analysis with Varimax rotation, computed to yield four orthogonal and conceptually interpretable factors, accounted for the 39.33% of the observed variance.

Factorial analysis on PQS items suggested four interaction structures:

1) Lack of positive attunement: mistrustful patient
2) Lack of positive attunement: antagonism and detachment
3) Patient negative engagement: overwhelming negative affects
4) Lack of positive attunement: therapist's restatement

Descriptive statistics of factors defining interactions' patterns of Joan are displayed in **Table 3.12**. The matrix of rotated principal components is listed in **Table 3.14**.

Table 3.12. Descriptive statistics for interactions structures in Elizabeth and Joan sessions.

	Patient								
	Elizabeth ($N_{sessions}$ = 38)					**Joan ($N_{sessions}$ = 37)**			
	Factor 1	**Factor 2**	**Factor 3**	**Factor 4**	**Factor 5**	**Factor 1**	**Factor 2**	**Factor 3**	**Factor 4**
Mean	6.28	4.81	4.79	3.70	7.46	4.66	4.10	5.13	5.61
Median	6.52	4.75	4.99	3.48	7.33	5.13	3.93	5.00	5.70
SD	0.795	0.826	0.795	0.864	0.639	0.985	0.870	1.113	1.295
Min	3.96	3.40	3.21	2.10	5.61	3.17	2.50	2.89	3.00
Max	7.29	6.97	6.29	6.10	8.67	6.23	6.30	7.33	7.80

Table 3.13. Interactions structures and factor loadings for PQS items in Elizabeth sessions. Items with negative factor loadings are printed in italics.

Factors	N.	PQS items	Factor loading
1) Patient's positive engagement: participation and commitment	73	The patient is committed to the work of therapy.	.803
	97	Patient is introspective, readily explores inner thoughts and feelings.	.780
	74	Humor is used.	.773
	7	*Patient is anxious or tense (vs. calm and relaxed).*	*-.710*
	54	Patient expresses himself or herself in a clear and organized fashion.	.706
	95	Patient feels helped by the therapy.	.688
	26	*Patient experiences discomforting or troublesome (painful) affect during the session.*	*-.679*
	55	Patient conveys positive expectations about therapy.	.655
	94	*Patient feels sad or depressed (vs. joyous or cheerful).*	*-.650*
	72	Patient understands the nature of therapy and what is expected.	.634
	25	*Patient has difficulty beginning the hour.*	*-.629*
	15	*Patient does not initiate or elaborate topics.*	*-.624*
	77	*Therapist is tactless.*	*-.624*
	99	Therapist raises questions about the patient's view (vs. validates the patient's perceptions).	.563
2) Patient's negative engagement: need for approval	53	Patient is concerned about what therapist thinks of him or her.	.705
	56	Patient discusses experiences as if distant from his or her feelings.	.621
	37	Therapist behaves in a teacher-like (didactic) manner.	.617
	78	Patient seeks therapist's approval, affection, or sympathy.	.618
	57	Therapist explains rationale behind his or her technique or approach to treatment, or suggests that the patient use certain techniques.	.578
3) Patient's negative engagement: distrustful attitude	70	Patient struggles to control feelings or impulses.	.715
	44	Patient feels wary or suspicious of the therapist (vs. trusting and secure).	.692
	100	*Therapist draws connections between the therapeutic relationship and other relationships.*	*-.678*
	19	There is an erotic quality to the therapy relationship.	.612
	71	*Patient is self-accusatory; expresses shame or guilt.*	*-.582*
	22	*Therapist focuses on patient's feelings of guilt.*	*-.579*
	30	*The content of the session centers on cognitive themes, i.e. ideas or belief systems.*	*-.552*
4) Discomfortable emotions processing	82	The patient's behavior during the hour is reformulated by the therapist in a way not explicitly recognized previously.	.726
	50	Therapist draws attention to feelings regarded by the patient as unacceptable	.657
	36	Therapist points out patient's attempts to ward off awareness of threatening information or feelings.	.641
	69	*Patient's current or recent life situation is emphasized in the session.*	*-.606*
	43	*Therapist suggests the meaning of others' behavior.*	*-.585*
5) Therapist's positive responsiveness	*9*	*Therapist is distant, aloof (vs. responsive and affectively involved).*	*-.609*
	28	Therapist accurately perceives the therapeutic process.	.642
	47	When the interaction with the patient is difficult, the therapist accommodates in an effort to improve relations.	.646

Table 3.14. Interactions structures and factor loadings for PQS items in Joan sessions. Items with negative factor loadings are printed in italics.

Factors	N.	PQS items	Factor loading
1) Lack of positive attunement: mistrustful patient	*76*	*Therapist suggests that patient accept responsibility for his or her problems.*	*-.697*
	90	*Patient's dreams or fantasies are mentioned or discussed.*	*-.665*
	5	Patient has difficulty understanding the therapist's comments.	.656
	11	*Sexual feelings and experiences are discussed.*	*-.654*
	44	Patient feels wary or suspicious of the therapist (vs. trusting and secure).	.647
	27	*Therapist gives explicit advice or guidance (vs. defers even when pressed to do so).*	*-.624*
	2	*Therapist draws attention to patient's non-verbal behavior, e.g. body posture, gestures, tone of voice.*	*-.622*
	46	Therapist communicates with patient in a clear, coherent style.	.610
	98	The therapy relationship is a focus of discussion.	.610
	100	Therapist draws connections between the therapeutic relationship and other relationships.	.571
	72	Patient understands the nature of therapy and what is expected.	.553
	91	*Memories or reconstructions of infancy and childhood are topics of discussion.*	*-.553*
2) Lack of positive attunement: antagonism and detachment	31	Therapist asks for more information or elaboration.	.737
	89	*Therapist intervenes to help patient avoid or suppress disturbing ideas or feelings.*	*-.656*
	51	Therapist condescends to or patronizes the patient.	.651
	19	There is an erotic quality to the therapy relationship.	.648
	9	Therapist is distant, aloof (vs. responsive and affectively involved).	.609
	20	Patient is provocative, tests limits of the therapy relationship.	.604
	39	There is a competitive quality to the relationship.	.572
	75	Termination of therapy is mentioned or discussed.	.557
	6	*Therapist is sensitive to the patient's feelings, attuned to the patient; empathic.*	*-.555*
	48	The therapist encourages independence of action or opinion in the patient.	.553
3) Patient negative engagement: overwhelming negative affects	*54*	*Patient expresses himself or herself in a clear and organized fashion.*	*-.752*
	73	*The patient is committed to the work of therapy.*	*-.672*
	59	Patient feels inadequate and inferior (vs. effective and superior).	.662
	26	Patient experiences discomforting or troublesome (painful) affect during the session.	.661
	97	*Patient is introspective, readily explores inner thoughts and feelings.*	*-.660*
	7	Patient is anxious or tense (vs. calm and relaxed).	.636
	61	Patient feels shy and embarrassed (vs. unselfconscious and assured).	.633
	94	Patient feels sad or depressed (vs. joyous or cheerful).	.612
	95	*Patient feels helped by the therapy.*	*-.552*
4) Lack of positive attunement: therapist's restatement	*34*	*Patient blames others, or external forces, for difficulties.*	*-.683*
	62	Therapist identifies a recurrent theme in the patient's experience or conduct.	.662
	85	*Therapist encourages patient to try new ways of behaving with others.*	*-.614*
	84	*Patient expresses angry or aggressive feelings.*	*-.578*
	35	Self-image is a focus of the session.	.558

Table 3.15. Descriptive statistics for CIS-R markers; differences between patients are printed in bold type.

	Patient									
	Elizabeth ($N_{sessions}$ = 38)					**Joan ($N_{sessions}$ = 37)**				
	Mean	*Median*	*SD*	*Min*	*Max*	*Mean*	*Median*	*SD*	*Min*	*Max*
Type of therapist's interventions										
Supportive interventions	**1.65**	1.75	0.537	0.33	3.25	0.75	1.00	.639	0	2.50
Explanations	0.31	0	0.623	0	3.33	**0.63**	0.13	.775	0	3.25
Explorative interventions	**1.52**	1.50	0.586	0	3.00	1.23	1.00	.889	0	3.00
Expressive interventions	0.34	0	0.493	0	2.00	**0.50**	0	.632	0	3.00
Therapist collaboration score	**1.92**	**2.00**	**0.352**	**0.75**	**3.00**	1.83	2.00	.491	0	3.00
Therapist rupture score	0	0	0.046	0	.50	**0.33**	**0**	**.559**	**0**	**3.00**
Patient collaboration score	**1.82**	**2.00**	**0.444**	**0.50**	**3.00**	1.45	1.50	.673	0	3.00
Patient rupture score	0.22	0	0.453	0	2.00	**0.74**	**1.00**	**.636**	**0**	**3.00**
Direct Therapist Interventions										
DTI 1 - Tasks / goals	0.61	0.13	.743	0	3.25	**0.89**	**1.00**	**.767**	**0**	**3.00**
DTI 2 - Affects	0.04	0	.160	0	1.25	**0.14**	**0**	**.368**	**0**	**2.00**
DTI 3 - Meaning	0	0	.059	0	1.00	0.01	0	.108	0	1.00
DTI 4 - Metacommunication	0.06	0	.239	0	1.50	0.11	0	.308	0	2.00
DTI MEAN	0.18	0.13	.217	0	1.00	**0.29**	**0.25**	**.244**	**0**	**1.00**
Indirect Therapist Interventions										
ITI 1 - Facts	1.26	1.25	.604	0	2.50	1.12	1.00	.730	0	3.00
ITI 2 - Affects	1.15	1.21	.729	0	2.50	0.99	1.00	.751	0	4.00
ITI 3 - Meaning	0.25	0	.442	0	2.00	0.16	0	.419	0	2.00
ITI MEAN	**0.89**	**0.88**	**.402**	**0**	**2.00**	0.76	0.79	.385	0	1.83
Therapist Rupture Interventions										
RI 1 - Linguistic avoidance	0.01	0	.077	0	1.00	**0.15**	**0**	**.417**	**0**	**3.00**
RI 2 - Affect avoidance	0	0	.026	0	0.50	**0.07**	**0**	**.281**	**0**	**2.00**
RI 3 - Hostility	0.02	0	.102	0	1.00	**0.06**	**0**	**.225**	**0**	**2.00**
RI 4 - Perseveration	0	0	.031	0	0.50	**0.12**	**0**	**.318**	**0**	**2.00**
RI 5 - Lack of clarity	0.01	0	.086	0	1.50	0.01	0	.091	0	1.00
RI MEAN	0.01	0	.034	0	0.30	**0.08**	**0**	**.148**	**0**	**1.10**
Direct Collaborative Processes										
DCP 1 - Negotiation tasks/goals	0.45	0	.637	0	3.00	0.43	0	.617	0	3.00
DCP 2 - Affects	0.04	0	.165	0	1.00	**0.12**	**0**	**.332**	**0**	**2.00**
DCP 3 - Meaning of events	0.01	0	.049	0	0.50	0.01	0	.100	0	1.50
DCP MEAN	0.16	0	.235	0	1.33	0.19	0	.243	0	1.00
Indirect Collaborative Processes										
ICP 1 - Significant facts	1.49	1.50	.664	0	3.00	1.06	1.00	.675	0	3.00
ICP 2 - Affects	1.34	1.50	.682	0	3.00	0.87	1.00	.719	0	3.00
ICP 3 - Meaning of events	**0.32**	**0**	**.543**	**0**	**2.50**	0.11	0	.346	0	2.00
ICP MEAN	**1.05**	**1.00**	**.463**	**0**	**2.33**	0.68	0.67	.367	0	1.83
Direct Rupture Markers										
DRM 1 - Tasks/goals	0.10	0	.318	0	2.00	0.17	0	.456	0	3.00
DRM 2 - Relationship	0.03	0	.189	0	1.50	0	0	.037	0	0.50
DRM 3 - Discouragement	0.06	0	.244	0	1.75	0.05	0	.241	0	2.50
DRM 4 - Parameters	0	0	.057	0	1.00	0	0	.026	0	0.50
DRM MEAN	0.05	0	.135	0	0.88	0.06	0	.144	0	1.00
Indirect Rupture Markers										
IRM 1 - Linguistic avoidance	0.22	0	.419	0	2.00	**0.39**	**0**	**.535**	**0**	**2.50**
IRM 2 - Affective avoidance	0.29	0	.479	0	2.00	0.25	0	.463	0	2.50
IRM 3 - Self-esteem regulation strategies	0.32	0	.533	0	2.50	0.40	0	.546	0	2.25
IRM 4 - Indirect allusions	0.01	0	.066	0	1.00	0.03	0	.182	0	2.00
IRM 5 - Acquiescence	0.12	0	.296	0	1.50	**0.31**	**0**	**.506**	**0**	**3.00**
IRM MEAN	0.19	0.10	.233	0	1.15	**0.28**	**0.20**	**.227**	**0**	**1.40**

3.3.5.5. ALLIANCE MARKERS: ELIZABETH

Full descriptive statistics on CIS-R markers for both patients are listed in **Table 3.15**.

Supportive (M = 1.65, SD = 0.537) and explorative interventions (M = 1.52, SD = 0.586) were significantly higher than expressive interventions (M = 0.34, SD = 0.493) and explanations (M = 0.31, SD = 0.623), for all comparisons ps < .001. Supportive interventions were no longer significantly higher than explorations after Bonferroni correction for multiple comparisons; on the other side, expressive interventions were not significant more frequent than explanations.

In Elizabeth's sessions, therapist collaboration overall score (M = 1.92, SD = 0.352) was significantly higher than his rupture overall score (M = 0, SD = 0.046), both with nonparametric test, Z = 17.65, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(379)}$ = 105.501, p < .001. The same trend was found for the patient, where collaboration scores (M =1.82, SD = 0.444) were higher than rupture scores (M = 0.22, SD = 0.453), both with nonparametric test, Z = 16.796, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(379)}$ = 41.297, p < .001. On the other side, patient's collaboration scores were significantly lower than therapist's, both with nonparametric test, Z = -9.346, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(379)}$ = -4.296, p < .001, while her rupture scores were higher, both with nonparametric test, Z = 8.536, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(379)}$ = 9.532, p < .001.

Regarding the mean scores of CIS-R markers of therapist's interventions, the collaborative indirect interventions (M = 0.89, SD = 0.402) reached higher scores than direct interventions (M = 0.18, SD = 0.217), both with nonparametric test, Z = 15.921, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(379)}$ = 27.698, p < .001. Indirect interventions were higher also than rupture interventions (M = 0.01, SD = 0.034), both with nonparametric test, Z = -16.6, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(379)}$ = 42.351, p < .001. Moreover, direct collaboration mean scores were significantly higher than rupture interventions, both with nonparametric test, Z = -12.384, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(379)}$ = 15.693, p < .001.

Considering the mean values of CIS-R markers of Elizabeth responses, indirect collaborative processes showed higher mean scores (M = 1.05, SD = 0.463) than direct collaboration (M = 0.16, SD = 0.235), both with nonparametric test, Z = 16.216, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(379)}$ = -30.843, p < .001. The

same trend was found for rupture responses, where indirect interventions (M = 0.19, SD = 0.227) were higher than direct interventions (M = 0.05, SD = 0.135), both with nonparametric test, Z = -10.801, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(379)}$ = 12.62, p < .001. Even if the indirect collaborative processes showed the highest mean scores and the direct rupture markers reached the lowest mean scores, for all comparisons ps < .001, direct collaborative processes were not significantly more frequent than indirect rupture interventions. Overall, rupture responses (M = 0.13, SD = 0.163) were significantly lower than indirect collaboration markers, both with nonparametric test, Z = -16.544, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(379)}$ = 34.007, p < .001; the difference between direct collaborative processes and overall rupture interventions was not significant after applying Bonferroni correction for multiple comparisons.

3.3.5.6. ALLIANCE MARKERS: JOAN

Regarding the type of therapist interventions, explorative interventions reached the highest scores (M = 1.23, SD = 0.889), for all comparisons ps < .001 for both parametric and nonparametric tests. Supportive interventions (M = 0.75, SD = 0.639) were higher than expressive interventions (M = 0.5, SD = 0.632), both with nonparametric test, Z = -5.605, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and parametric test, $t_{(369)}$ = -5.421, p < .001. Explanations (M = 0.63, SD = 0.775) were less frequent than supportive interventions and more frequent than expressive interventions; however, none of these differences was significant after Bonferroni correction for multiple comparisons.

Considering CIS-R global scores, therapist was higher on collaboration (M = 1.83, SD = 0.491) than on rupture (M = 0.33, SD = 0.559), both with nonparametric test, Z = -15.659, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(369)}$ = 35.443, p < .001. The same trend was detected for the patient (collaboration score: M = 1.45, SD = 0.673; rupture score: M = 0.74, SD = 0.636), both with nonparametric test, Z = -11.129, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(369)}$ = 13.736, p < .001. Furthermore, therapist's mean collaboration level was higher than patient's, both with nonparametric test, Z = -9.346, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(369)}$ = 10.883, p < .001. On the other side, for rupture indexes the patient reached higher mean scores than therapist, both with nonparametric test, Z = -9.557, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(369)}$ = -10.211, p < .001.

Regarding the mean scores of CIS-R markers of therapist's interventions, the collaborative indirect interventions (M = 0.76, SD = 0.385) reached higher scores than direct interventions (M = 0.29, SD = 0.244), both with nonparametric test, Z = -12.803, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(369)}$ = -17.205, p < .001. Indirect interventions were higher also than rupture interventions (M = 0.08, SD = 0.148), both with nonparametric test, Z = -15.596, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(369)}$ = 29.133, p < .001. Moreover, direct collaboration mean scores were significantly higher than rupture interventions, both with nonparametric test, Z = -11.964, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(369)}$ = 13.571, p < .001.

Considering the mean values of CIS-R markers of Joan responses, indirect collaborative indexes showed higher mean scores (M = 0.68, SD = 0.367) than direct collaboration (M = 0.19, SD = 0.243), both with nonparametric test, Z = 13.616, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(369)}$ = 19.256, p < .001. The same trend was found for rupture responses, where indirect interventions (M = 0.28, SD = 0.227) was higher than direct interventions (M = 0.06, SD = 0.144), both with nonparametric test, Z = -13.683, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(369)}$ = -18.481, p < .001. Even if the indirect collaborative processes showed the highest mean scores and the direct rupture markers reached the lowest mean scores, for all comparisons ps < .001, indirect rupture interventions were significantly more frequent than direct collaborative processes, both with nonparametric test, Z = 5.2, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(369)}$ = 4.805, p < .001. Overall, rupture responses (M = 0.18, SD = 0.158) were significantly lower than indirect collaboration markers, both with nonparametric test, Z = -15.124, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(369)}$ = 23.508, p < .001; the difference between direct collaborative processes and overall rupture interventions was not significant.

3.3.5.7. ALLIANCE MARKERS: SPECIFIC MARKERS

Examining direct collaborative therapist's interventions, DTI 1 – Tasks/goals ($M_{Elizabeth}$ = 0.61, $SD_{Elizabeth}$ = 0.743; M_{Joan} = 0.89, SD_{Joan} = 0.767) showed significantly higher scores than the other direct collaborative interventions in both couples, ps < .001. DTI 3 – Meaning ($M_{Elizabeth}$ = 0, $SD_{Elizabeth}$ = 0.059; M_{Joan} = 0.01, SD_{Joan} = 0.108) was significantly lower than DTI

2 – Affects ($M_{Elizabeth}$ = 0.04, $SD_{Elizabeth}$ = 0.16; M_{Joan} = 0.14, SD_{Joan} = 0.368) and DTI 4 – Metacommunication ($M_{Elizabeth}$ = 0.06, $SD_{Elizabeth}$ = 0.239; M_{Joan} = 0.11, SD_{Joan} = 0.038) in both couples, *p*s < .001.

The first marker of indirect therapist collaboration, ITI 1 – Facts ($M_{Elizabeth}$ = 1.26, $SD_{Elizabeth}$ = 0.604; M_{Joan} = 1.12, SD_{Joan} = 0.73), was significantly higher than the other two therapist's indirect collaboration markers in both couples, *p*s < .05; ITI 2 – Affects ($M_{Elizabeth}$ = 1.15, $SD_{Elizabeth}$ = 0.729; M_{Joan} = 0.99, SD_{Joan} = 0.751) was significantly higher than ITI 3 – Meaning ($M_{Elizabeth}$ = 0.25, $SD_{Elizabeth}$ = 0.442; M_{Joan} = 0.16, SD_{Joan} = 0.419) in both couples, *p*s < .001.

Regarding therapist's rupture interventions, they reached different scores in the two couples.

In Elizabeth's sessions, RI 3 – Hostility (M = 0.02, SD = 0.102) was significantly higher than RI 2 – Affect avoidance (M = 0, SD = 0.026), both with nonparametric test, Z = 2.587, p = .007. Monte Carlo simulation 99% C.I.: .005-.009, and with parametric test, $t_{(379)}$ = 2.715, p = .007. Also, RI 3 was significantly higher than RI 4 – Perseveration (M = 0, SD = 0.031), both with nonparametric test, Z = 2.689, p = .006, Monte Carlo simulation 99% C.I.: .004-.008, and with parametric test, $t_{(379)}$ = 2.585, p = .01.

In Joan's sessions, RI 1 – Linguistic avoidance (M = 0.15, SD = 0.417) was significantly higher than RI 2 (M = 0.07, SD = 0.281), RI 3 (M = 0.06, SD = 0.225), and RI 5 – Lack of clarity (M = 0.01, SD = 0.091), *p*s < .001. On the other side, RI 5 was significantly lower than RI 2, RI 3 and RI 4 (M = 0.12, SD = 0.318), *p*s < .001. RI 4 was significantly higher than RI 3, both with nonparametric test, Z = 3.096, p = .002, Monte Carlo simulation 99% C.I.: .001-.003, and with parametric test, $t_{(369)}$ = 2.983, p = .003.

Examining patients' perspective, with regard to direct collaborative processes, in both couples DCP 1 – Facts ($M_{Elizabeth}$ = 0.45, $SD_{Elizabeth}$ = 0.637; M_{Joan} = 0.43, SD_{Joan} = 0.617) was significantly higher than DCP 2 – Affects ($M_{Elizabeth}$ = 0.04, $SD_{Elizabeth}$ = 0.165; M_{Joan} = 0.12, SD_{Joan} = 0.332), which, in turn, was significantly higher than DCP 3 – Meaning ($M_{Elizabeth}$ = 0.01, $SD_{Elizabeth}$ = 0.049; M_{Joan} = 0.01, SD_{Joan} = 0.1), for all comparisons *p*s < .005. The same trend was found for indirect collaborative processes in both couples, for all comparisons *p*s < .001.

Again, rupture markers were different between the two patients.

Examining direct rupture markers, in Elizabeth's sessions, DRM 4 – Parameters (M = 0, SD = 0.057) was significantly lower than the other markers, ps < .005. DRM 1 – Task/goals (M = 0.1, SD = 0.318) was significantly higher than DRM 2 – Relationship (M = 0.03, SD = 0.189), both with nonparametric test, Z = 3.324, p < .001, Monte Carlo simulation 99% C.I.: .000-.001, and with parametric test, $t_{(379)}$ = 3.605, p < .001.

In Joan's sessions, DRM 1 (M = 0.17, SD = 0.456) was significantly higher than the other direct rupture markers, for all comparisons ps < .001. DRM 3 – Discouragement (M = 0.05, SD = 0.241) was significantly higher than DRM 2 (M = 0, SD = 0.037) and DRM 4 (M = 0, SD = 0.026), ps < .001.

Analyzing indirect rupture markers, in Elizabeth's sessions, IRM 3 - Self-esteem regulation strategies (M = 0.32, SD = 0.533) were significantly higher than IRM 1 - Linguistic avoidance (M = 0.22, SD = 0.419), IRM 4 – Indirect allusions (M = 0.01, SD = 0.066), and IRM 5 - Acquiescence (M = 0.12, SD = 0.296), for all comparisons ps < .005. The same trend was found for IRM 2 - Affective avoidance (M = 0.29, SD = 0.479), for all comparisons ps < .01. Also, IRM 1 was significantly higher than IRM 4 and IRM 5, ps < .001.

In Joan's sessions, IRM 4 (M = 0.03, SD = 0.182) reached the lowest scores, for all comparisons ps < .001. IRM 3 (M = 0.4, SD = 0.546) was significantly higher than IRM 2 (M = 0.25, SD = 0.463) and IRM 5 (M = 0.31, SD = 0.506), ps <.001. IRM 1 (M = 0.39, SD = 0.535) was significantly higher than IRM 2 (M = 0.25, SD = 0.463), both with nonparametric test, Z = 4.045, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(369)}$ = 4.312, p =.006.

3.3.5.8. ALLIANCE MARKERS: COMPARISONS BETWEEN PATIENTS

Regarding the type of therapist's interventions, supportive and explorative interventions were higher in Elizabeth sessions, while explanations and expressive interventions were higher in Joan sessions, for all comparisons ps < .001.

Examining the global scores, therapist collaboration was higher in Elizabeth's couple, even after Bonferroni correction, both with nonparametric test, U = 60999.5, p < .001, Monte Carlo simulation 99% C.I.: .000 - .000, and with parametric test, $t_{(668.17)}$ = -2.91, p = .016. On the other side, therapist rupture was higher in Joan's couple, both with nonparametric test, U = 45210, p < .001, Monte Carlo simulation 99% C.I.: .000 - .000, and with parametric test, $t_{(373.887)}$ = -2.91, p < .001. The same trend was found for the global scores of patients: Elizabeth was

higher on collaboration, both with nonparametric test, U = 46102.5, p < .001, Monte Carlo simulation 99% C.I.: .000 - .000, and with parametric test, $t_{(636.556)}$ = -8.655, p < .001, while she was lower on ruptures both with nonparametric test, U = 35830.5, p < .001, Monte Carlo simulation 99% C.I.: .000 - .000, and with parametric test, $t_{(665.37)}$ = 12.792, p < .001.

The mean score of direct therapist's interventions was higher for Joan than for Elizabeth, both with nonparametric test, U = 51307, p < .001, Monte Carlo simulation 99% C.I.: .000 - .000, and with parametric test, $t_{(748)}$ = 6.530, p < .001. Indirect therapist interventions were more frequent in Elizabeth sessions, both with nonparametric test, U = 58259, p < .001, Monte Carlo simulation 99% C.I.: .000 - .000, and with parametric test, $t_{(748)}$ = -4.485, p < .001. On the other side, rupture interventions by therapist were dethatched more often in Joan sessions, both with nonparametric test, U = 44975, p < .001, Monte Carlo simulation 99% C.I.: .000 - .000, and with parametric test, $t_{(407.351)}$ = 9.746, p < .001.

Comparing patients regarding the mean scores of their responses, Elizabeth was higher on indirect collaborative processes, both with nonparametric test, U = 37395, p < .001, Monte Carlo simulation 99% C.I.: .000 - .000, and with parametric test, $t_{(718.743)}$ = -12.104, p < .001; on the other side, Joan was higher on the indirect ruptures, both with nonparametric test, U = 52059, p < .001, Monte Carlo simulation 99% C.I.: .000 - .000, and with parametric test, $t_{(748)}$ = 5.167, p < .001. No significant differences were found on direct collaborative nor rupture processes.

Examining the markers, in Joan sessions rupture processes reached higher scores: more specifically, IRM 1 - Linguistic avoidance, IRM 5 - Acquiescence, RI 1 - Linguistic avoidance, RI 2 - Affect avoidance, RI 3 - Hostility, RI 4 - Perseveration, for all comparisons ps < .001. Also, some direct collaborative markers were more frequent in Joan sessions: more specifically, DCP 2 - Affects, DTI 1 - Tasks/goals, DTI 2 - Affects, for all comparisons ps < .001. On the other side, Elizabeth was higher on ICP 3 - Meaning of events, both with nonparametric test, U = 56936.5, p < .001, Monte Carlo simulation 99% C.I.: .000 - .000, and with parametric test, $t_{(645.945)}$ = -6.301, p < .001.

3.3.5.9. ALLIANCE TRENDS OVER TIME: ELIZABETH

In Elizabeth's sessions, a first-ordered autoregressive model was found for therapist collaboration overall scores, ARIMA (1,0,0). The average trend was linear and significant, b = 1.906, SE = .024, p < .001. Since the coefficient of the autocorrelation function is positive,

previous observations are expected to predict the following ones, determining an ongoing increase of mean values, $b = 0.311$, $SE = .049$, $p < .001$. However, the model explained only the 17% of the observed variance, stationary $R^2 = .174$.

Adding the sequence of sessions as predictor, another first-ordered autoregressive model was found, ARIMA (1,0,0). The average trend confirmed to be linear and significant, $b = 1.972$, $SE = .024$, $p < .001$. Sessions sequence proved to be a significant predictor at different temporal lags, ps < .001, suggesting that the overall attitude of therapist to collaboration in one session determined an increase of his collaboration in the following two sessions. The change was rapid, $b = -0.887$, $SE = .152$, $p < .001$. The model explained nearly the 34% of the observed variance, stationary $R^2 = .339$. Since the mean absolute percentage error (MAPE) is 12.28, it could be argued that only nearly the 12% of the dependent series varied from its model-predicted level.

On the other side, therapist's overall rupture scores showed a trend stable over time, ARIMA (0,0,0), in fact the constant term was very small and not significant, $b = 0.005$, $SE = .002$, $p = .052$.

Considering Elizabeth's attitude, her collaboration overall scores increased over time, ARIMA (2,0,1). The average trend was linear and significant, $b = 1.765$, $SE = .160$, $p < .001$. However, the trend seemed to be fluctuating, since each observation could predict both an increase or a decrease of subsequent scores (AR Lag 1, $b = 1.297$, $SE = .056$, $p < .001$; AR Lag 2, $b = -0.3$, $SE = .054$, $p < .001$; MA Lag 1, $b = 0.959$, $SE = .023$, $p < .001$).

The mixed AR and MA model became a first-ordered autoregressive model adding the sequence of sessions as independent variable, ARIMA (1,0,0). The trend remained linear and significant, $b = 1.487$, $SE = .055$, $p < .001$, and the level of collaboration predicted increased scores in the subsequent observations, $b = 0.316$, $SE = .049$, $p < .001$. The sequence of sessions predicted positively patient's collaboration scores, $b = 0.016$, $SE = .003$, $p < .001$. The model explained the 35% of the observed variance, stationary $R^2 = .352$.

About Elizabeth's rupture overall scores, analysis suggested a mixed model, ARIMA (1,0,12). Rupture scores showed a significant linear trend over time, $b = 0.571$, $SE = .083$, $p < .001$, even if it seemed erratic (AR Lag 1, $b = 0.629$, $SE = .107$, $p < .001$; MA Lag 1, $b = 0.369$, $SE = .126$, $p = .004$; MA Lag 12, $b = -0.132$, $SE = .050$, $p = .009$).

When the sequence of sessions was added as predictor, results were confirmed, ARIMA (1,0,12). Furthermore, the sequence of sessions predicted a decrease of the overall rupture score,

b = -0.009, SE = .004, p = .019. The model explained more than half of the observed variance, stationary R^2 = .573, and it seemed quite accurate, MAPE = 54.316.

3.3.5.10. ALLIANCE TRENDS OVER TIME: JOAN

Examining Joan's sessions, for therapist's collaboration scores analysis suggested the so-called white noise model, ARIMA (0,0,0). Even if the average trend seemed to be linear and significant, b = 1.748, SE = .022, p < .001, the change relied upon chance and scores continued to return to the mean level.

When the sequence of sessions was added as predictor, the same result was found, ARIMA (0,0,0). However, the new-added independent variable proved to be a positive and significant predictor of therapist's collaboration scores, b = 0.006, SE = .003, p = .041. The model explained the 30% of the observed variance, stationary R^2 = .308.

Therapist's rupture scores showed a significant linear trend, ARIMA (1,0,1), b = 0.199, SE = .034, p < .001. Each observation is a good predictor of the following one (AR Lag 1, b = 0.716, SE = .160, p < .001; MA Lag 1, b = 0.535, SE = .190, p = .005). The sequence of sessions could not be considered a relevant predictor. The model explained more than half of the observed variance, stationary R^2 = .538, and its accuracy was high, MAPE = 57.157.

Also, for Joan's level of collaboration the sequence of sessions proved not be considered a significant predictor. Analysis suggested a mixed model, ARIMA (1,0,17). The trend was linear and significant, b = 1.330, SE = .088, p < .001. The predictor showed a positive AR component at lag 1, b = 0.603, SE = .052, p < .001, suggesting that patient's collaboration scores depends on the level of collaboration manifested in the previous observation, and a negative MA component at lag 17, b = -0.211, SE = .065, p < .001, indicating that previous error terms affects negatively the current value of the series.

Regarding Joan's rupture scores, analysis suggested a first-ordered autoregressive model, ARIMA (1,0,0). The average trend was linear and significant, b = 0.624, SE = .065, p < .001, and the coefficient of the autocorrelation function was positive, b = 0.512, SE = .056, p < .001.

Adding the sequence of sessions as predictor, another first-ordered autoregressive model was found, ARIMA (1,0,0). The average trend confirmed to be linear and significant, b = 0.608, SE = .066, p < .001, and the coefficient of the autocorrelation function confirmed to be positive, b = 0.52, SE = .056, p < .001. Session sequence proved to be a significant positive predictor, b

= 0.28, *SE* = .091, *p* = .013. The model explained nearly the 40% of the observed variance, stationary R^2 = .392, however its accuracy was not completely satisfactory, MAPE = 35.392.

3.3.5.11. VALIDATING INTERVENTIONS: COMPARISONS WITHIN COUPLES

Analysis on validation interventions were preliminary results. They were conducted on a selection of 10 sessions, distributed throughout the year of treatment, and scored dividing each session in 10 segments of the same length. Consequently, analysis were conducted on 100 segments. Full descriptive statistics of validation interventions in the sessions of both patients are listed in **Table 3.16**.

For both patients, VL1 ($M_{Elizabeth}$ = 2.65, $SD_{Elizabeth}$ = 0.575; M_{Joan} = 2.11, SD_{Joan} = 0.777) was significantly higher than VL3, VL4, VL5, and VL6, *p*s < .005. VL1 was significantly higher than VL2 in Elizabeth's sessions, both with nonparametric test, *Z* = 3.376, *p* = .001, Monte Carlo simulation 99% C.I.: .000-.002, and with parametric test, $t_{(99)}$ = 3.545, *p* = .001. VL1 was not significantly different from VL2 in Joan's sessions, neither with nonparametric test, *Z* = 1.011, *p* = .348, Monte Carlo simulation 99% C.I.: .336-.360, nor with parametric test, $t_{(99)}$ = 1-026, *p* = .307.

For both patients, VL2 ($M_{Elizabeth}$ = 2.39, $SD_{Elizabeth}$ = 0.827; M_{Joan} = 2.02, SD_{Joan} = 0.853) was significantly higher than VL3, VL4, and VL5, *p*s < .005. VL2 was not significantly different from VL6 for both patients, *p*s > .1.

VL3 ($M_{Elizabeth}$ = 1.87, $SD_{Elizabeth}$ = 1.079; M_{Joan} = 1.69, SD_{Joan} = 0.982) was significantly higher than VL4 for both patients, *p*s < .001. VL3 was significantly higher than VL5 only in Joan's sessions, both with nonparametric test, *Z* = 6.730, *p* < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(99)}$ = 9.131, *p* < .001. VL3 was significantly lower than VL6 only in Elizabeth's sessions, both with nonparametric test, *Z* = -3.110, *p* = .002, Monte Carlo simulation 99% C.I.: .001-.003, and with parametric test, $t_{(99)}$ = -3.236, *p* = .002.

VL4 ($M_{Elizabeth}$ = 0.66, $SD_{Elizabeth}$ = 0.913; M_{Joan} = 0.38, SD_{Joan} = 0.763) was significantly lower than VL5 and VL6 in both patients, *p*s < .001.

VL5 ($M_{Elizabeth}$ = 1.64, $SD_{Elizabeth}$ = 1.069; M_{Joan} = 0.89, SD_{Joan} = 0.790) was significantly lower than VL6 ($M_{Elizabeth}$ = 2.26, $SD_{Elizabeth}$ = 0.895; M_{Joan} = 1.90, SD_{Joan} = 0.823) in both patients, *p*s < .001.

Table 3.16. Descriptive statistics for validation levels (VL) assessed by DBT-VLCS. Statistics were computed on 100 segments (10 segments for 10 sessions). Differences between patients are printed in bold type.

	Patient									
	Elizabeth ($N_{sessions}$ = 10)					**Joan ($N_{sessions}$ = 10)**				
	Mean	*Median*	*SD*	*Min*	*Max*	*Mean*	*Median*	*SD*	*Min*	*Max*
VL1 – "Being present"	**2.65**	**3.00**	**0.575**	**1.00**	**3.00**	2.11	2.00	0.777	1.00	3.00
VL2 – "Accurate reflection"	**2.39**	**3.00**	**0.827**	**0.00**	**3.00**	2.02	2.00	0.853	0.00	3.00
VL3 – "Mind-reading"	1.87	2.00	1.079	0.00	3.00	1.69	2.00	0.982	0.00	3.00
VL4 – "Comprehension based on past history"	0.66	0.00	0.913	0.00	3.00	0.38	0.00	0.763	0.00	3.00
VL5 – "Comprehension based on present events"	**1.64**	**2.00**	**1.069**	**0.00**	**3.00**	0.89	1.00	0.790	0.00	3.00
VL6 – "Radical genuineness"	**2.26**	**3.00**	**0.895**	**0.00**	**3.00**	1.90	2.00	0.823	0.00	3.00
Therapist mean score	**1.91**	**2.00**	**0.600**	**0.50**	**3.00**	1.50	1.50	0.590	0.50	3.00
Patient response	**2.19**	**2.00**	**0.907**	**0.00**	**3.00**	1.62	2.00	0.951	0.00	3.00

3.3.5.12. VALIDATING INTERVENTIONS: COMPARISONS BETWEEN COUPLES

The mean score of therapist's validating interventions was significantly higher for Elizabeth (M = 1.91, SD = 0.600) than for Joan (M = 1.50, SD = 0.590), both with nonparametric test, U = 3052.5, Z = 4.772, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(197.945)}$ = 4.912, p < .001. More specifically, comparing therapeutic couples on therapeutic interventions, in Elizabeth's sessions VL1, VL2, VL5 and VL6 were significantly higher than in Joan's sessions, ps < .005. The difference on VL4 was no longer significant after Bonferroni correction, ps < .05.

Patient's validated response was significantly higher in Elizabeth' sessions (M = 2.19, SD = 0.907) than in Joan's sessions (M = 1.62, SD = 0.951), both with nonparametric test, U = 3359.5, Z = 4.2, p < .001, Monte Carlo simulation 99% C.I.: .000-.000, and with parametric test, $t_{(197.549)}$ = 4.338, p < .001.

3.3.6. ***Discussion***

3.3.6.1. OVERVIEW OF THE THIRD SECTION

As stated at the beginning of the third section, the present studies are intensive examinations of two single cases aimed at describing the complexity of the therapeutic process in DBT individual sessions over one year of treatment.

The present research has a single-case design, since it is focused on two therapeutic couples in a DBT standard program. Individual sessions over the first year of standard DBT program were examined for Elizabeth and Joan, two young women with a DSM-IV diagnosis of Borderline Personality Disorder. Elizabeth had a codiagnosis of Narcissistic Personality Disorder, while Joan a codiagnosis of Passive-Aggressive Personality Disorders and substance abuse in remission. Elizabeth's problematic behaviors were suicide attempts, self-harm behaviors, sexual promiscuity, abuse of alcohol and anxiolytic drugs; Joan had a substance use disorder manifested early in adolescence, an history of abusive partners and illegal conducts. The therapist was the same for both patients, a male experienced clinician, trained and certified in DBT, along with his team.

The research fits into the process-outcome strand: in fact, while the therapeutic couple with Elizabeth reached positive outcomes after one year of treatment, Joan and her therapist had only partially positive results – even if the therapist was the same for both patients. Thus, the aim of the studies was to examine the relationships between the outcomes and the process variables, since it was supposed that DBT outcomes depends on both technical and relational dimensions, linked to specific aspects of a therapeutic couple (Burckell & McMain, 2011).

Several studies were conducted, each with different objectives, hypotheses and instruments, in order to examine specific dimensions of the therapeutic process. Two dimensions of the therapeutic process, the adherence to theoretical model and the relational aspects (Wampold & Imel, 2015) were considered.

For clarification purposes, **Table 3.17** summarizes aims, hypotheses and results of each study.

Table 3.17. Overview of process studies: results.

Study	Aims and variables	Analysis	Instruments	Hypothesis	Results
1	**Macro-analysis of the technical aspects: adherence to the DBT model** VARIABLES: • Prototype of a DBT individual session • Prototype of a general psycho-therapeutic approach (focused on reflective functioning)	• Comparisons within couple (Wilcoxon Signed Rank Test, paired t-test) • Comparisons between couples (Mann-Whitney U test, Welch's t-test) • Correlations between prototypes (Spearman-Brown coefficient)	PQS prototypes (Goodman, 2013)	• Good adherence to a DBT prototypical session	CONFIRMED • DBT prototype showed the highest scores, and violations of DBT the lowest scores • PQS prototypes on mentalizing interventions reached intermediate scores
				• No differences between therapeutic couples in the adherence to DBT	PARTIALLY CONFIRMED • No differences for DBT prototype • More DBT violations in Joan's sessions
				• Difficulties in working on reflective functioning in the couple with partially good outcome	CONFIRMED • More violations of reflective functioning in Joan's sessions
				• Positive relation between violation of DBT and interventions preventing reflective functioning	PARTIALLY CONFIRMED (only for Elizabeth) • In Elizabeth's sessions, negative relation between interventions promoting reflective functioning and DBT violations • In Joan's sessions, negative relation between intervention supporting and violating DBT
2	**Micro-analysis of the technical aspects: validation interventions**	PRELIMINARY ANALYSIS ON SELECTED SESSIONS • Comparisons within couple (Wilcoxon Signed Rank Test, paired t-test) • Comparisons between couples (Mann-Whitney U test, Welch's t-test)	*DBT Validation Level Coding Scale* (DBT-VLCS; Carson-Wong & Rizvi, 2016)	• Therapist's attention and listening reached the highest scores	CONFIRMED ALSO • The accurate reflection or restatement of the patient's feelings, thoughts, and assumptions by the therapist proved to be equally one of the most frequent
				• Interventions relating past-history events and present experiences were expected to be the less frequent ones	CONFIRMED
				• Therapist's attention and listening comparable in the two patients	NOT CONFIRMED • It was higher in Elizabeth's sessions
				• Therapist's ability to translate into words non-verbalized experiences from patients, to recognize current causes of behavior and internal states were expected to be weaker with the patient with a partial outcome	NOT CONFIRMED • They were comparable in the two couples
				• Therapist's ability to maintain an empathetic, authentic and equal attitude was expected to be weaker with the patient with a partial outcome	CONFIRMED • It was higher in Elizabeth's sessions
3	**Macro-analysis of the therapeutic relation: ways of interaction between the**	• Factorial analysis (Principal Component Analysis with Varimax rotation)	*Psychotherapy Process Q-Set* (PQS; Jones, 2000)	***Couple with good outcomes*** • Positive interaction structures (involvement and commitment)	CONFIRMED • Factor 1: "Patient's positive engagement: participation and commitment" • Factor 5: "Therapist's positive responsiveness"

Study	Aims and variables	Analysis	Instruments	Hypothesis	Results
	patient-therapist dyad VARIABLES: • Interaction structures			• Negative interaction structures (mistrust, need for approval for the patient, patient's difficulties in facing her fragilities)	CONFIRMED • Factor 2: "Patient's negative engagement: need for approval" • Factor 3: "Patient's negative engagement: distrustful attitude" • Factor 4: "Discomfortable emotions processing"
				Couple with partially positive outcomes	
				• Just one positive interaction structure (involvement and commitment)	NOT CONFIRMED • Absence of any positive interaction structure
				• Several negative interaction structures (aloof therapist; mistrustful or frustrated patient)	CONFIRMED • Factor 1: "Lack of positive attunement: mistrustful patient" • Factor 2: "Lack of positive attunement: antagonism and detachment" • Factor 3: "Patient negative engagement: overwhelming negative affects" • Factor 4: "Patient negative engagement: self-invalidation"
4	**Micro-analysis of the therapeutic relation: therapeutic alliance** VARIABLES: • Collaborative and rupture processes in the therapeutic alliance, both from patients and therapist	• Comparisons within couple (Wilcoxon Signed Rank Test, paired t-test) • Comparisons between couples (Mann-Whitney U test, Welch's t-test) • Time series analysis (ARIMA models)	*Collaborative Interactions Scale – Revised Form* (CIS-R; Colli et al., 2014)	• Therapist's collaboration higher than therapist's rupture	CONFIRMED • For both patients • Also, patients' collaboration higher than patients' rupture
				• Therapist's collaboration higher than patients' collaboration	CONFIRMED • For both patients • Also, therapist's rupture lower than patients' rupture ALSO • Therapist's indirect collaboration higher than direct collaboration • Patients' indirect markers higher than direct markers • Patients comparable on direct markers (collaboration and rupture)
				Couple with good outcomes	
				• Frequent explorative and expressive intervention	PARTIALLY CONFIRMED • Supportive and explorative interventions higher than expressive interventions and explanations
				• High collaboration scores (direct interventions)	PARTIALLY CONFIRMED • Elizabeth's collaboration higher than Joan's, both in therapist and patient • Elizabeth higher than Joan in indirect collaboration, but comparable in the direct collaboration • Indirect collaboration higher than direct collaboration, both in therapist and patient
				• Patient's sporadic rupture responses (mainly indirect markers)	CONFIRMED • Patient's indirect rupture higher than direct rupture • Patient's rupture lower than her collaboration (both indirect and direct)
				• Collaboration increased over time, both in therapist and patient	CONFIRMED
				• Rupture reduced over time, both in therapist and patient	PARTIALLY CONFIRMED • Patient rupture reduced over time • Therapist rupture was stationary

Study	Aims and variables	Analysis	Instruments	Hypothesis	Results
				Couple with partially positive outcomes	
				• Frequent explorative interventions and explanations, few expressive interventions	PARTIALLY CONFIRMED • Explorative interventions higher than supportive and expressive interventions, and explanations • Explanations comparable with supportive and expressive interventions
				• Low collaboration scores	PARTIALLY CONFIRMED • Joan's rupture higher than Elizabeth's, both in therapist and patient • Joan higher than Elizabeth in indirect rupture, but comparable in direct rupture • Indirect collaboration higher than direct collaboration, both in therapist and patient • Patient's rupture lower than her collaboration (both indirect and direct) • Therapist's indirect collaboration lower for Joan than for Elizabeth • Therapist's direct collaboration and rupture higher for Joan than for Elizabeth
				Patient's frequent rupture responses (both indirect and indirect markers)	PARTIALLY CONFIRMED • Patient's indirect rupture higher than her direct collaboration • Patient's indirect rupture higher than her direct rupture
				• Negative therapist's interventions	CONFIRMED • Significantly higher for Joan
				• Collaboration decreased over time, both in therapist and patient	NOT CONFIRMED • Collaboration was stationary, both in therapist and patient
				• Rupture was stable over time, both in therapist and patient	PARTIALLY CONFIRMED • Therapist rupture was stationary • Patient rupture increased over time

3.3.6.2. TREATMENT TARGETS AND OUTCOMES

Before treatment beginning, both Elizabeth and Joan depicted themselves as high in exploratiVeness, impulsivity and sensation seeking. They reported to be prone to preoccupation, pessimistic and ruminative thoughts. There were difficulties in emotional regulation, i.e. recognize, accept, express and manage effectively negative intense emotions. Mindfulness abilities of awareness of inner states and a nonjudgmental attitude were low. The assessment showed also difficulties in the definition and pursuit of long-term goals, and sensitivity to social rejection. Also, Elizabeth showed problems in social cooperativeness with sensitivity to social rejection, proneness to anger, and a demanding attitude, with the tendency to look for other's approval. On the other side, Joan was characterized by lack anger control and experiential avoidance – that is, the tendency to avoid situations emotionally connoted, especially those with a negative valence.

After one year, both patients reported no more suicide attempts, with only sporadic episodes of indirect self-harm, sporadic for Elizabeth and still quite frequent for Joan. Elizabeth reached good outcomes by all accounts and gained scores comparable to the general adult population on target variables: emotional dysregulation, impulsivity, aggressiveness, mindfulness, and quality of life; residual difficulties remained in the self-esteem domain and in closeness in relationships. On the other side, Joan reached only partial outcomes, with the maintenance of problematic behaviors (sporadic substance abuse), some difficulties in emotional regulation, mindfulness skills, self-directedness and quality of life.

3.3.6.3. ADHERENCE TO DBT

With regard to the adherence to therapeutic model, DBT prototype defined by PQS items showed the highest mean score across the treatment for both patients, suggesting that for all intents and purposes the examined sessions are in accordance with an ideal DBT session defined by clinicians. The result suggested the specificity of DBT sessions over ordinary psychotherapy sessions (Lynch et al., 2006), as operationalized by Goodman (2013) through PQS items with the reflective functioning prototype.

The result could also be considered evidence of the competence in DBT of the individual therapist, since no differences were found between couples in the scores on PQS DBT prototype. However, since Joan's sessions showed a significant higher frequency of DBT violations, it could be argued that it was more difficult for the therapist to follow what DBT

suggested (both from a technical and a relational point of view) with a patient who maintained problematic behaviors. In other words, without formulating hypotheses about causal links – given that the data do not allow to support with certainty –, there seemed to be a sort of parallelism between partial outcome and difficulties in following good clinical practice, at least from the DBT perspective (Burckell & McMain, 2011).

Moreover, it is interesting to note that PQS prototypes concerning mentalizing interventions reached intermediate scores in both patients, supporting the hypothesis that the focus on reflective functioning represents a common therapeutic process of psychotherapies from any theoretical background (Fonagy & Adshead, 2012; Steele, Murphy & Steele, 2015). For patients with severe Personality Disorders, reflective functioning is theorized to be cross-sectional over treatments specificity (Bateman, Campbell, Luyten & Fonagy, 2017; Goodman, 2013) and it proves to play a crucial role in a successful therapeutic work (Badoud et al., 2017; Fonagy et al., 2004; Locati, Rossi & Parolin, 2017).

Mentalizing interventions in DBT deserves specific attention. DBT is rooted in behaviorism, and as a cognitive-behavioral treatment it is focused on teaching patients effective problem-solving strategies (Linehan & Wilks, 2015). Skills training procedures encompass instructions, coaching, modeling, behavioral activation and rehearsal, homework assignments (Linehan, 2014). On the other side, a fundamental assumption of DBT are that behaviors are always caused by something else, not only facts, but also emotions, thoughts, memories, subjective interpretations of events, or personal meanings attributed to others' behaviors (Linehan, 1993). Therapists help patients in the accurate identification of causes, which is relevant to the regulation of emotional responses, to the prevention of dysfunctional behaviors and to goals' achievement (McMain, Korman & Dimeff, 2001). For instance, along with cognitive therapies (Hayes, 2004), in DBT chain analysis and missing links analysis there is a moment-by-moment identification of both internal and external factors preceding and following target behaviors (Lynch et al., 2006; Linehan, 2014; see the first section of the present work, on DBT strategies and interventions, for a brief description of chain analysis). Such interventions could resemble mentalization in a way, intending it as the process of making meaning of internal experiences by interpreting behaviors in terms of intentional mental states, such as feelings, beliefs, desires, and purposes (Fonagy et al., 2004). On the other side, a therapeutic work that hinders the reflective function seems to be characterized as the violation of the general principles of psychotherapy: in this sense, it is important to note that PQS prototype defining violations of reflective functioning is characterized by a therapist with a

direct and distant role, while the patient struggles to understand his comments, has a wary, critical and hostile attitude.

Since, as stated, reflective function has a crucial role in a successful therapeutic work, it seemed to make sense that there was a greater number of interventions violating the reflective functioning in the therapeutic couple with Joan: in fact, this couple had more difficulties in achieving the objectives set, in finding dyadic syntonization or attunement, and, on the other hand, the agreements and the procedures provided by DBT were frequently missed.

To the best of our knowledge, up to now overlaps and differences between therapeutic interventions from DBT and from other theoretical models have been only marginally discussed and empirically investigated. Goodman (2013) demonstrated that working on mental states is a common therapeutic process in different BPD treatment models, such as DBT or TFP. Furthermore, Goodman and colleagues (2014, 2015) proved that an effective treatment for BPD patients requires technical flexibility, for instance encompassing cognitive-behavioral interventions within a psychodynamic model to structure sessions and regulate patient's distress. With regard to mentalization, Bateman and Fonagy (2004) recommended cognitively-based mentalization – that is, identifying mental states and connecting them to behaviors – as an effective intervention in any BPD treatment. Also, in DBT the awareness and the exploration of inner states is guided and encouraged by therapists in order to provide with information about patient's needs and to sustain valued or committed actions (Cameron, Reed & Gaudiano, 2014).

The similarities between some aspects of the DBT strategies and the interventions aimed at supporting the reflective function can explain why, in Elizabeth's sessions – which can be considered a "successful" DBT therapy –, a negative relation between interventions promoting reflective functioning and DBT violations was found. In accordance with previous considerations, it could be argued that, as long as therapist was prevented in following DBT principles in an therapy otherwise adherent to DBT, it was more difficult for him sustaining a mentalizing stance. The result supports the link between a positive therapeutic relationship and a fruitful therapeutic work (Bateman et al., 2017; Bedics et al., 2013; Fonagy & Adshead, 2012; Locati et al., 2017; Parolin, De Carli, Solomon & Locati, 2017): it should be remembered that only with Elizabeth positive and collaborative interaction structures were found.

On the other hand, the fact that in Joan's sessions a negative relation between intervention supporting and violating DBT was detached reinforced the observation that the therapeutic work with this patient stopped at a behavioral level: this, in turn, highlighted the difficulty of

the couple to work in a more solid way of recognizing and enhancing the emotional dimension, and also the symbolic dimension.

3.3.6.4. VALIDATION INTERVENTIONS

In the light of acknowledging and valuing subjective experiences in DBT, the dimension of validation becomes especially important. Since for DBT any response could makes sense and be understandable within the current situation or with respect to past history, validation is defined as the act of paying attention, substantiating, or apprehending what is an authentic experience from the individual perspective (Linehan, 1997). Validation requires active efforts to understand own and other private experiences, and at the same time it is very different from unreserved approval (Wilks & Linehan, 2015). As therapeutic intervention, validation has been operationalized in six levels; in particular, the third level requires therapist to figure out aspects of patient's experience, such as emotions and meanings, not expressed or not already fully recognized by the patient. Therapists can validate patients if they are able to correctly "mind-read" the reasons for overt behavior, overcoming shame, guilt, and experiential avoidance (Linehan, 1997, 2014). Even if it is considered an acceptance-oriented strategy (Linehan, 2014), validation also allows patients to remain in contact with primary or painful emotions, thus it is likely to be an exposure procedure aimed at changing emotional responses (Lynch et al., 2006; McMain, Korman & Dimeff, 2001).

The PQS prototype defining least characteristic DBT items covered not only nonadherent interventions (i.e., reconstruction of memories, focus on unconscious mechanisms; Linehan, 1993), but also therapist invalidating behaviors (i.e., distraction, tactless, overt aggressiveness). In the examined sessions this prototype showed the lowest scores, demonstrating the very low occurrence of therapist's negative behaviors and contraindications relating to the therapeutic model. However, the fact that PQS prototype defining DBT violations showed higher scores in Joan's sessions supported the hypotheses that there could be a sort of correspondence between partial outcome and difficulties in following DBT suggestions (Burckell & McMain, 2011).

In in order to summarize with the necessary clarity the results of the study related to validation interventions, the following are validation levels (corresponding to the DBT-VLCS scales) theorized by DBT (Linehan, 1993, 1997, 2014):

- VL1 – "Being present"
- VL2 – "Accurate reflection"

- VL3 – “Mind-reading”
- VL4 – “Comprehension based on past history”
- VL5 – “Comprehension based on present events”
- VL6 – “Radical genuineness”

Two clarifications are necessary regarding the evaluations conducted with DBT-VLCS. First of all, this study represents a preliminary work, since the instrument has not yet been officially translated and validated in Italy: therefore, only a selection of ten sessions for each of the two therapeutic couples was examined during the year of treatment. Secondly, even if DBT-VLCS was originally developed to be applied to the whole session, was considered more informative to follow the CIS-R signature protocol: thus, the sessions were divided into ten segments of the same duration and evaluations were conducted on the segments.

The results on DBT-VLCS scales showed that VL1 (“Paying attention, listening to and observing the patient’s statements, feelings, and behaviors, as well as demonstrating an active effort to understand the patient”) reached the highest scores, regardless of the therapeutic moment and for both patients. Level 1 of validation confirmed to be particularly important. It requires that the therapist remains fully present and listens with great attention. Ideally, DBT therapists should use this level constantly, throughout every session, in order to convey patients that they are worthy of any effort (Swenson, 2016). The therapist must be grounded in the moment, awake to what is happening in the session, and sufficiently emotionally regulated to really listen: in other words, doing DBT is itself a type of mindfulness practice, with the objects of awareness being the patient’s communications (Linehan, 2014).

The second level (VL2, “Accurate reflection or restatement of the patient’s feelings, thoughts, and assumptions”) has been used very frequently and accurately throughout the two treatments. DBT therapists are encourage in checking out patient’s communication by restating it, even using the patient’s words (Linehan, 1997). On the other hand, by restating it, the patient may correct what was not clear enough, not noticed, or even misunderstood. In other words, the process of reflecting back the patient’s words plays an important role in getting in synchrony with each other (Swenson, 2016). These results, in line with previous research (Carson-Wong, Hughes & Rizvi, 2016), showed that VL2 allowed the therapist to convey a general sense of listening, involvement and interest. Moreover, the second level is particularly useful when the therapist conducts a chain analysis to order and systematize what the patient says (Linehan, 1993; Rizvi & Ritschel, 2014). The importance of VL2 is equally understandable in the light of the existing literature, as this intervention completes VL1, adding to the patient’s understanding and listening the communication to the patient of what has been detected (Swenson, 2016).

Given the dual utility of VL2, which systematizes and organizes the patient's statements and allows the patient to feel mirrored, listened to and understood, the second level is a good vehicle for expressing empathy in the therapeutic setting. On the other hand, validation was considered a boundary construct between empathy (the ability to understand other people's emotions and thoughts while maintaining a personal point of view) and compassion (participation "from an internal perspective" to the suffering of other; Leahy, 2005).

Contrary to what was found in the research of Carson-Wong and colleagues (2016), in which the first two levels of validation were equivalent to the third in terms of accuracy and frequency, the third level (VL3, "Communication to the patient that the therapist understands his/her experience in response to the event that have not been verbalized; i.e., mind-reading") was used to a lesser extent than the other two interventions. VL3 is considered particularly delicate and difficult to apply, since Level 3 it involves reflecting what has been *implicitly* communicated, for instance with facial expression or gestures (Linehan, 1997). It is likely that it was not used immediately and indiscriminately by the therapist in the sessions examined, and that it was rather used in the presence of certain conditions that would allow its therapeutic usefulness. On the other hand, it is possible that the discrepancy between the results of the study and the literature data depends on the fact that in the research presented here it was decided to examine individually the segments of the session, rather than the whole session: a more precise evaluation can have allowed to detect how VL3, although pregnant in the therapeutic process, is used sparingly in the DBT sessions.

The fourth level (VL4, "Communication from the therapist that all behaviors are caused by certain events, including past learning or biological dysfunction") has turned out to be the least used level by the therapist with both patients. This could be due to the fact that DBT is a therapy oriented to the here-and-now of patients' life; also, VL4 is strongly linked to the biosocial model, which presentation occurred in a dedicated part of the pre-treatment sessions (Crowell, Beauchaine, & Linehan, 2009; Linehan, 1993, 2014).

The fifth level (VL5, "Communication from the therapist that all behavior is justifiable, reasonable, or meaningful in terms of the present context") is similar to VL4, but it is rooted in current events. It allows therapists in explaining patients that their behaviors make sense with respect to the current context (Linehan, 1997). The use of VL5 is quite common in DBT: for example, it is a validation level widely used when a chain analysis is carried out on a situation that is significant for a patient (Linehan, 2014). Otherwise, VL5 is used with great caution in DBT due to the intrinsic risks associated with it (error of the ensuing statement; Linehan, 1997).

These considerations may explain why this level achieved intermediate scores in the present study.

Regarding the sixth level (VL6, "Therapist sees and responds to the strengths and capacity of the patient while maintaining a firm empathic understanding of the patient as he/she is"), it is considered the highest level of validation because it structures an equal therapeutic relationship based on the DBT assumption of the patient's intrinsic validity (Linehan, 1997). This level is called "radical genuineness,", and it means that, in responding to patients, therapists allow genuine responses as a person to show and to be part of the conversation (Swenson, 2016). In the present study VL6 reached moderately high scores, confirming its great importance in DBT.

Regarding the comparison between the two therapeutic couples, the therapist seemed to use validation intervention more frequently and accurately towards Elizabeth than with Joan. The difference concerned in particular the most frequently used levels (VL1, VL2, VL5 and VL6). Consistently, it seems that the therapist was therefore more attentive and empathetic towards Elizabeth (VL1), was able to better reflect the content expressed by her (VL2) and justified her behavior in the light of the current life context (VL5) more than she does with Joan. The difference in VL6, considered the highest level of validation (Linehan, 1997), showed that the therapist tended to treat Elizabeth as a peer, structuring a therapeutic relationship of a horizontal nature, while maintaining with Joan a more direct and less involved attitude, which shows the verticality of the relationship (Swenson, 2016). It is possible to hypothesize that the therapist, aware of Joan's fragility and of his oscillations between addiction and anger, was struggling to maintain a spontaneous attitude during the treatment. Probably, the differences detected in the other levels are rooted in this relational configuration.

On the other side, the use of VL3 is not different in the two treatments, similarly to what happens for VL4: in other words, these interventions do not seem to be sensitive to the different characteristics of the patients. In the treatment of two quite different patients, the therapist recurs in a similar little way to interventions of an interpretative nature: he rarely tried to read in the minds of patients beyond explicitly expressed contents, and barely justified behavior in light of the biological constitution and patients' history. It is possible that the more sporadic use of VL3 and of VL4 could be attributable to their specific characteristics: the first one has intrinsic difficulty, while the second is linked to the biosocial model.

The therapist tended to be more validating towards Elizabeth, in contrast to what happens in Joan's sessions. In a symmetrical way, Elizabeth responds in a much more positive way than Joan to therapeutic validation on average. Although the literature suggests that positive affectivity increases as a function of increasing therapeutic validation (Carson-Wong, Hughes & Rizvi, 2016), the relationship between these two dimensions requires further investigation. For instance, it could be possible that Joan could feel overwhelmed by a validating attitude of the therapist (Koerner, 2009), and thus therapist could be quite cautious in the use of validation interventions with her. Examining all therapeutic sessions could allow a deeper investigation of the relationship between the use of therapeutic validation in DBT and patient responses: it can be hypothesized that the outcomes of validation interventions depend partly on the characteristics of the patient and partly on the characteristics of the therapeutic relationship. As stated by Swenson, "it's the most natural thing in the world if you care about someone, and yet it's very hard to do" (2014, p. 285).

3.3.6.5. Interaction structures: Elizabeth

Another aspect that could account for the satisfactory outcomes is the relational dimension (Barnicot et al., 2012; McMain, Boritz & Leybman, 2015; Norcross & Wampold, 2011a, 2011b). Factorial analysis on PQS items identified the interaction structures characteristic of each therapeutic couple.

Firstly, the five Elizabeth's interaction structures will be discussed.

The first factor, "Patient's positive engagement: participation and commitment", showed a quite high mean score (M = 6.28, SD = 0.795), thus it occurred frequently across treatment. In this interaction structure, Elizabeth was engaged for therapy, aims and tasks were clear for her, she put forward topics and answered in a collaborative way. The therapist kept a dialectical stance balancing closeness and validation with challenges and requests for changing. The couple was able to address emotions, thoughts, expectations, and to explore the nature and the role of mental states in determining behaviors. The relational climate is positive, characterized by reciprocity and humor.

The first factor is well-summarized by the construct of commitment, essential in DBT for facing problems (Linehan, 1993; Bedics et al., 2015). Commitment can be defined as "what is required in a given case, for a given task, to get oneself to do what is needed to meet a goal" (Swenson, 2016, p. 204). It is based on realistic aims, emotional readiness, feelings of hope, the

promotion of change both in attitude and in behaviors, and a relational environment with enough willingness to accept change (Linehan, 1993). Commitment is expected to fluctuate in strength and direction over treatment and, from a dialectical perspective, it always goes along with ambivalence due to the intrinsic difficult of change (Cameron et al., 2014). Our data confirmed the hypothesis of a commitment moderately high with fluctuations, since the first factor, although reaching high scores, didn't show the highest ones.

On the other side, commitment in DBT is theorized as the result of several relational transactions and it depends also upon therapist's actions (Linehan, 1993, 2014). DBT therapists are encouraged to be themselves committed to the treatment in terms of knowledge of the theoretical background, agreement on modalities, strategies and techniques, and behavioral change (Bedics at al., 2012a, 2012b; Linehan & Wilks, 2015): in our study, therapist proved to be adherent to the DBT model over all sessions, thus this point could be considered satisfied. Furthermore, DBT therapists are called for being committed to patients in terms of attention, good disposal, validation, mutual respect of treatment agreements and promotion of change (Bedics et al., 2015).

The validating and collaborative attitude of the therapist in our study is well-depicted by the fifth factor, "Therapist's positive responsiveness", the most frequent over all sessions (M = 7.46, SD = 0.639). It is about situations in which therapist demonstrated attention and readiness to Elizabeth, he strived for repairing ruptures or misunderstandings, framed carefully what was happening in the session in order to make it intelligible and to help patient to manage emotions effectively. A validating attitude is a fundamental dimension of DBT therapeutic relation (Bedics et al., 2013; Lynch et al., 2006; Swenson, 2016) and a therapeutic attitude resembling validation demonstrated to sustain good outcomes in psychotherapy (Goodman et al., 2014; Goodman et al., 2015; Parolin et al., 2017).

Despite this, for its transactional nature, commitment can't be cause solely and definitely by therapists; rather, therapists and patients need to question about transactions promoting or preventing commitment in order to increase the chances of eliciting it (Cameron et al., 2014; Swenson, 2016). BPD patients faced enormous difficulties in everyday life (e.g., Zimmerman, Chelminski, Young, Dalrymple & Martinez, 2013) and their relational dysfunctional patterns occur also within therapeutic setting (American Psychiatric Association, 2001), which has been considered a preferential setting to elaborate and change relational and personal problems (Barnicot et al., 2012; Burckell & McMain, 2011). In accordance with these considerations, Elizabeth showed two problematic interaction structures with moderate mean scores – i.e., they

occurred sometimes. The second factor, “Patient’s negative engagement: need for approval” (*M* = 4.81, *SD* = 0.826), happened when the therapist took a didactic role, he explained theoretical concepts, strategies or the rationale for interventions, while the patients acted as she was detached from emotions and assumed an acquiescent attitude. The third factor, “Patient’s negative engagement: distrustful attitude” (*M* = 4.79, *SD* = 0.795), described an interaction structure in which Elizabeth experienced mistrust and hostility, with a very labile ability to recognize her responsibility in determining circumstances; emotions, thoughts, beliefs and myths could be discussed rarely, both from patient and therapist. These two interaction structures remind the dilemma between apparent competence and active passivity (Linehan, 1993), respectively. Apparent competence is the ability to handle situations with skillful strategies, but the effectiveness relies upon favorable circumstances, a submissive attitude or the avoidance of problematic emotions. On the other side, active passivity is the tendency to approach difficult situations demanding others to solve problems, complaining about few environmental changes and feeling grievances against not enough supporting people. The dilemma leaves Elizabeth with helplessness, hopelessness, and an unbridgeable fear of loneliness.

Finally, the fourth factor, “Discomfortable emotions processing”, is the least frequent one (*M* = 3.7, *SD* = 0.864) and it is characterized by a focus on painful emotions. In this interaction pattern the therapist outlined unstated Elizabeth’s emotions and formulated hypothesis on her inner states determining behaviors, in order to help her to modify her attitude. The exploration of feelings, in particular those more discomfortable, was done through chain analysis and validating interventions – i.e., mindreading – without addressing unconscious dynamics. This pattern is halfway between DBT and reflective functioning. Stating the lack of empirical evidences supporting clear differences between DBT and other models’ interventions, our results is in accordance with the suggestions to tailor therapeutic interventions with what is better suitable and more effective for each patient, considering aspects such as personality traits or levels of personality functioning (Colli, Tanzilli, Dimaggio & Lingiardi, 2013; Horowitz, 1996; Norcross & Wampold, 2011b; Zimmerman et al., 2013).

Examining the relations between the relational dimension and the adherence to the model, the first interaction structure correlated both with DBT most characteristic items and negatively with RF least characteristic items. Elizabeth seemed to feel engaged, acknowledged in her skills and thus free to achieve goals and values when sessions were adherent to DBT prototype, that is, when commitment, patient’s active role, therapist collaborating attitude, and reciprocity were

encouraged. Another instance supporting the patient was the low occurrence of interventions undermining the reasoning abilities. Results are in line with literature findings demonstrating that therapist's attunement, structured sessions, focus on feelings and mentalizing interventions are all positive therapeutic factors (Cameron et al., 2014; Goodman et al., 2014; Goodman et al., 2015; Parolin et al., 2017).

3.3.6.6. INTERACTION STRUCTURES: JOAN

Factorial analysis on PQS items identified four interaction structures characteristic of Joan's therapeutic couple.

Differently from what was hypothesized, analyses highlighted only problematic interaction structures, connoted by negative emotional experiences. In fact, among the four factors extracted, none expresses an interactive dynamic in which both patient and therapist are collaborative, involved and attuned; a relational fatigue, especially from the patient, emerged.

In the first factor, "Lack of positive attunement: mistrustful patient", the therapist directed the discussion on the therapeutic relationship, making connections with other relational situations that the patient lived in a similar way. The therapist expressed himself clearly and coherently, refraining from giving advice or assuming a leading role. No connections were made to past events, dreams or fantasies, sentimental ties. The patient, although she understood the nature of therapy, struggled to understand the therapist's comments, was suspicious and wary. The therapist avoided bringing back what he observed to the patient's responsibility; on the other hand, it was also difficult for him to pay attention to the patient's reactions to his comments.

The first factor of Joan's sessions recalls the work on the therapeutic ruptures of Safan and Muran (2002), which suggest focusing on relational dynamics when the therapeutic process is affected by misunderstandings between therapist and patient. DBT also suggests examining behaviors that interfere with therapy as the primary intervention target, immediately following suicidal and self-injurious behaviors (Linehan, 1993). As repeatedly stated, the relational dimension is essential in DBT: the therapeutic relationship is a vehicle of care and at the same time it is the cure itself. Cultivating a positive, strong and collaborative relationship between clinician and patient is therefore crucial within the context of therapy. Some research has shown that the therapist's attentive and firm attitude, capable of balancing availability and demands for change, is significantly helpful for patients in DBT (Bedics et al., 2012b). The fact that in

the present study it was difficult to reach an attunement within the couple confirms how DBT requires a constant effort of adaptation by the therapists (Bedics et al., 2015), and, despite all the efforts, this does not always manage to bring results hoped for (Burckell & McMain, 2011).

In the second factor, "Lack of positive attunement: antagonism and detachment", the therapist actively encourages the exploration of emotions and thoughts from the patient, even bringing her to face painful affections. However, in doing this, the therapist proved to be so attentive from the cognitive point of view and in the collection of information, how distant and cold from the affective point of view. In addition, the therapist supported a boost to the patient's autonomy, comparing it with extra-setting situations, in which she would have to manage herself without therapeutic support. The patient responded provocatively: as a result, a dynamic of tension and conflict was created.

In this interaction structure, patient and therapist appeared to be stuck in a dialectical dilemma.

The dialectical dilemma may be similar, on the one hand, to what has already been seen in Elizabeth's sessions, on the poles of active passivity and apparent competence (Linehan, 1993). Joan seemed to show the resentment typical of patients blocked in the first pole, when the support of others was denied: in fact, the patient was in a position of passivity, and acted critically and hostile when her needs did not receive adequate answers. The therapist seemed to be in a position in which he perceives the patient in terms of apparent competence, without being able to maintain a dialectical attitude: in fact, he reinforced hers drive to autonomy, without paying any attention to Joan's frailties. The therapist confronted difficult and painful subjects for the patient in a detached way; also, he underlined her urgency to act autonomously, also and especially when certain situations occur outside the session. This showed probably how much he was capitalizing excessively on the patient's ability to manage himself without any external support.

On the other hand, it is possible that the dialectical dilemma of this interaction structure is the one that is often found with patients with substance dependence problems (Dimeff & Linehan, 2008), that is, the oscillation between an absolute dependence and an exasperated autonomy. In fact, we can observe how the therapist was placed in a perspective in which autonomy was sustained in a strenuous and extreme; by contrast, the patient expressed a reaction of anger in the face of an absence of support from others, while denying the explication of dependency needs. As stated by Dimeff and Linehan (2008), drug-abusing patients are often

difficult to draw into treatment. Some attach easily to their therapists, while others behave "like butterflies", with episodic engagement in therapy, failure to participate in sessions, little availability to follow therapists' suggestions, and ultimately early termination from treatment. Such patients oscillate between pervasive requests of support and detachment from care providers, and this explains the "butterfly" movements.

In summary, in the second interaction structure, it seems that both the therapist and the patient struggled to admit their difficulties. Although the patient lived with greater discomfort the lack of attunement in the couple, she could only express hostility; on the other hand, it is possible that her great and profound need of support, precisely because it was not explicit and therefore not a thematic in session (McMain, Korman & Dimeff, 2001), made the therapist uncomfortable, thus he reacted with a distancing attitude towards the patient.

In the third interaction structure, "Patient negative engagement: overwhelming negative affects" Joan claimed to experience negative emotions of high intensity. In particular, she declared to be worried, tense, to feel sad and embarrassed, to feel inadequate and incapable. Despite experiencing a fair variety of negative emotions, the patient struggled to explore her emotional states and fails to express herself in a clear and coherent manner. The patient struggled to be adherent to what therapy requires, for example describing in objective terms how she feels and respecting the therapeutic agreements.

It is interesting to note how this interaction structure is representative of a situation of evident emotional dysregulation on the part of the patient (McMain, Korman & Dimeff, 2001), without any intervention by the therapist. With regard to dialectical dilemmas (Linehan, 1993), Joan seems to oscillate between the poles of emotional vulnerability (when exposed to her emotions) and self-invalidation (when she struggled to recognize the intrinsic and authentic value of her mental states). In this interactive pattern, the therapist did not appear, and there are at least two plausible explanations: for example, it might be very difficult for the therapist to interrupt the mode of operation of the patient, since it is a real "emotional cascade" (Selby & Joiner, 2009); alternatively, the therapist might decide to maintain an observational position to leave the patient free to express herself and reserving the right to intervene only at a later time.

In the fourth and last factor, "Lack of positive attunement: therapist's restatement", the therapist formulated interventions aimed at showing the patient how many behaviors, related to self-representation, tend to repeat in a repetitive and rigid manner – in DBT terms, the therapist compared the patient with beliefs, myths, and unresolved dialectical dilemmas. The therapist

did not make any requests for change, so it is an interaction structure focused on awareness and not on problem solving.

It is interesting to note that, even in this interaction structure, there was a lack of attunement between the therapist and the patient: in fact, the patient had a detached, absent attitude. Joan recognized her responsibility for certain situations – instead of recriminating against others; however, she seemed to be emotionally "switched off", did not feel grudge or hostility, but not even positive feelings: for example, she did not prove to be reflected by the words of the therapist. In other words, when the therapist tried to help Joan in an exploratory work, she responded with an apathetic attitude, there seemed to be no content in her mind.

Joan's mental functioning resembled a typical configuration of BPD patients, well known in scientific literature and clinical practice: BPD subjects are weak in the emotional awareness, which provides feedback to the self about emotions and, in turn, facilitates the regulation of emotions. Such self-reflective process has also been referred to as mentalization or reflective function (Fonagy et al., 2002). Being unable to regard internal states as objects of thought determines that emotions – and the situations that evoke them – are difficult to understand, manage and resolve. As stated by Cole and colleagues (2009), "One of the most frustrating aspects of interacting with individuals with BPD is their refusal or inability to allow others to soothe them, even when demanding attention and solace. If one cannot reflect on internal states and their circumstances realistically, it is difficult to engage in a shared reality with loved ones and involve them in resolving these issues" (p. 1296). Restated in DBT terms, this is a severe form of self-invalidation (Linehan, 1993).

3.3.6.7. THERAPEUTIC ALLIANCE

The study of the therapeutic alliance was conducted by examining in-depth and detailed the therapist's interventions and patient responses. The scale rating used was the *Collaborative Interactions Scale – Revised Form* (CIS-R; Colli et al., 2014). The underlying theory of the relationship between the patient and the therapist: the alliance is a process that is declined in cycles of rupture and repair (Safran & Muran, 2000). Following the coding protocol provided by CIS-R, each session was divided into ten segments of the same duration and the evaluations were conducted for each segment, evaluated in its entirety.

CIS-R consists of several subscales.

Firstly, the rating scale allows to evaluate the type of interventions, in other terms their form is examined. The results of this subscale are superimposable to what is seen in the part on the technical dimension.

The exploratory interventions were the ones with the highest score, confirming that DBT is oriented to incentivize patients to put the experience in words, adopting clear, comprehensible and descriptive terms (Linehan, 2014). Supportive interventions also achieved high marks in both therapeutic couples, confirming that the extent of validation and patient enhancement is central to DBT (Linehan, 1997). Furthermore, the analyzes showed that these two types of interventions are more frequently present in Elizabeth's sessions and less in Joan's sessions: these results are in line with what has already emerged, in particular with the presence of a greater tendency towards validation in the Elizabeth therapy and with the greatest number of obstacles to the development of the reflexive function found in Joan therapy.

On the other hand, the expressive interventions were not frequent, in line with the caution suggested by DBT for interventions of an interpretative type (for example, the second and fifth level of validation, Linehan, 1997, Swenson, 2016), particularly delicate because of their inferential nature. Even the explanatory interventions have proved to be infrequent: the result confirms the findings regarding the fourth level of validation, suggesting that the "didactic" type of intervention in DBT are mostly used in the initial phase of therapy - that is, in the sessions of pretreatment (Linehan, 1993).

Regarding markers related to the content of the interventions, the average scores showed a similar trend in the two therapeutic couples: the level of collaboration of the therapist is greater than that of the patients, the level of rupture of the therapist is less than that of the patients, the collaboration scores are higher than rupture scores. These results are in line with what would be expected in a good DBT therapy, as discussed in the interaction structure on Elizabeth's commitment (see the first factor on her interaction structures, "Patient's positive engagement: participation and commitment").

Furthermore, as a whole, indirect markers were more frequent and meaningful than direct markers. This result is in line with the fact that DBT is focused on the current life problems of patients and their resolution (Linehan, 1993, 2014), differentiating itself from other treatments that, instead, place the focus on the typical relational modes of the patient and actualization in therapy of the same (for instance, Transference-Focused Psychotherapy, TFP; Clarkin, Levy, Lenzenweger & Kernberg, 2007). The result supports the choice of the DBT target, thought as

a specific treatment for patients not only diagnosed with Borderline Personality Disorder, but also – and above all – with serious behavioral problems and lack of skills (Wilks et al., 2016). In this sense, the question of the generalization of coping strategies learned in therapy becomes very useful and relevant - in other words, their application in everyday life situations, with a progressive autonomy of patients (Linehan, 2014).

It is necessary to clarify how DBT foresees a specific work on the therapeutic relationship in two phases: to support the commitment (as emerged from the results on the interaction structures of Elizabeth) and to address the patient's behaviors that interfere with the therapy (as discussed relatively to Joan's interaction structures), both in terms of problem solving, and in terms of solving dialectical dilemmas. This mode of work is specific to DBT (Linehan, 1993); at the same time, it is in agreement with what Safran and Muran suggested (2002) on the need to address the relational problems in therapy as a dedicated target, comparing the patient with tasks, goals and difficulties in respecting or maintaining them.

Proceeding with more detailed analyzes, differences emerged between the two therapeutic couples from the point of view of the contents of the interventions.

Considering the global scores, the average level of collaboration was higher in Elizabeth's sessions, while the average level of rupture was higher in Joan's sessions. This evidence seems to confirm that the outcome and the process are moving in the same direction (Burckell & McMain, 2011). However, a more careful reading highlights further relevant specificities.

As far as the therapist is concerned, direct collaborative markers are higher in sessions with Joan: this means that, in Joan's sessions, the therapist deals with more frequently issues related to participation in therapy, respect for tasks and agreements, and also to the nature of the therapeutic bond. The result is in line with what was discussed above on the indication in DBT to address relational problems when they interfere with the therapy, in order to support a solid and active commitment in the patient (Cameron et al., 2014).

The markers related to the level of indirect collaboration by the therapist are higher in the sessions of Elizabeth than Joan, in particular the marker related to the meanings that the patient draws from what happens to her. The result is in agreement with the results on the interaction structures, which showed how it was possible to perform with Elizabeth a fruitful and in-depth work on the emotional dimension and its implications: think of the fourth factor, "Discomfortable emotions processing", in which the therapist outlined unstated Elizabeth's emotions and formulated hypothesis on her inner states. Furthermore, the result is also in

agreement with what has been found with regard to the PQS prototypes, which have shown that some elements that impede the work on the reflexive function and the therapeutic work in general are pregnant for Joan.

The rupture scores of the therapist were higher in Joan's sessions than in Elizabeth, confirming how much the therapeutic work was more difficult with the patient with partial outcome, particularly critical and elusive. The result is in line with the observation by Burckell and McMain (2011), according to which in a successful treatment all proceeds as envisaged by the treatment model, while in a therapy with a more uncertain outcome, difficulties arise in respecting the program, deviations, sometimes even violations of the same. In fact, the results on the individual breaker markers of the therapist show that he has had higher scores in a variety of behaviors (linguistic avoidance, emotional avoidance, hostility and perseveration).

With regard to patients, their markers are in line with the general tendency to more frequently use indirect responses than direct ones – in other words, both patients tend to deal more often with issues related to extra sitting situations rather than events, facts or meanings associated with the therapy. This trend is evident both in the collaborative markers and in the rupture markers, without differences between the two patients.

Conversely, as regards indirect interventions, differences emerge between the two therapeutic couples: in fact, on the collaborative indirect processes Elizabeth achieved higher Joan scores, while on the indirect rupture Joan achieved higher scores of Elizabeth. The result is in line with the above and supports the different relational orientation of the two therapeutic couples.

Examining the differences between the two therapeutic couples with respect to the single markers, it is evident that there is a comparable trend in the two therapeutic couples on collaborative markers, where they are faced, in order, with a decreasing frequency, events, affects and meanings. In other words, the two therapeutic couples seem to carry out a very similar work: the result confirms the fact that DBT is very clear about what it means to do DBT, in terms of objectives, tasks and methods. Furthermore, as discussed above, DBT supports a synergistic, active and collaborative attitude between patient and therapist. The good adherence to the therapeutic model detected with the PQS prototypes is further confirmed in this result.

On the contrary, specific and different trends emerge for the two therapeutic couples as regards the rupture markers: the specificity of each therapeutic dyad seems to take shape in relation to where and how difficulties, misunderstandings, distances emerge. To paraphrase

Tolstoy, one could assert that every therapeutic couple could be “unhappy in its own way”, in the sense that the personal characteristics of the two members of the dyad, the moment of their meeting and their functioning as a couple are outlined in their uniqueness with respect to obstacles who meet and how they face them.

Finally, as regards the temporal trend of global scores, we find a pattern in line with what has been observed so far. In fact, Elizabeth’s therapy proceeds in the expected and hoped direction: the collaboration score increases over time, the breaking score is reduced; only the breakdown score of the therapist remains stable, however it must be recognized that he has always had very low scores during the course of treatment.

In contrast, in Joan’s sessions, the therapist’s markers remain stable over time, and so does the patient’s willingness to collaborate; however, the patient’s breakage score increases with the progress of the sessions. In other words, in line with what has been observed, while the therapist tries to “stay the course”, comparing the patient on her difficulties and trying to work out her personal fragility, Joan has an ambivalent position in a relationship in which she feels very strongly the need for dependence, as the drive to autonomy.

3.3.6.8. LIMITATIONS AND FUTURE DIRECTIONS

The study must be considered in the light of several limitations.

First, the single-case design, although very informative about the specificity of the examined therapeutic dyad, prevents generalizations to the population of patients with Borderline Personality Disorder treated with DBT or to the population of DBT therapists. Future studies with larger sample sizes would allow testing of hypotheses generated by our research.

Considering outcome variables, the only measures used in the study were self-report instruments. Although assessment procedures were not limited to psychiatric symptoms or behavioural aspects but instead covered a wide range of personality dimensions, future studies could add structural changes or follow-up assessment to verify the endurance of change.

Regarding the process dimension, only PQS prototypes of DBT and reflective functioning were considered. Other treatment prototypes defined by PQS, specific dimensions of therapeutic alliance or selected therapeutic interventions could be examined in forthcoming analysis, also investigating the relations between a therapist’s interventions and the patient’s

responses. Finally, the patient followed a standard DBT programme, which comprised not only individual sessions but also skills training groups and pharmacotherapy. The contribution of other modes of therapy was not examined, and it should be considered in future studies devoted to the investigation of complex causal patterns of change process.

Furthermore, with regard to DBT-VLCS, it should be necessary to examine a wider number of sessions in order to evaluate the robustness of the present findings. A greater number of observations would allow additional analyses, such as time series analysis. Also, a comparison between investigations conducted on the whole session and investigations conducted on segments of sessions should be done.

Despite these limitations, the current study is the first empirical investigation of individual sessions of DBT, conducted by an experienced therapist. After one year, one patient reached good outcomes on all target variables, while the other reached only partial outcomes. The results demonstrated the importance of both adherence to the model and a collaborative therapeutic relationship for achieving good treatment outcomes. In our opinion, it is noteworthy that results also contributed to shedding light on overlaps and differences between DBT and other theoretical models, in particular, interventions focused on reflective functioning. Regarding the relational dimension, several interaction structures were identified: some depicted positive therapeutic processes, such as the patient's commitment and the therapist's positive responsiveness, while others were related to relational difficulties, such as patients' dilemma between apparent competence and active passivity, or their difficulties in facing discomfortable emotions.

PART FOUR

Discussion

I beg you, to have patience
with everything unresolved in your heart
and to try to love the questions themselves
as if they were locked rooms
or books written in a very foreign language. [...]
Live the questions now. Perhaps then,
someday far in the future, you will gradually,
without even noticing it, live your way into the answer.

Rainer Maria Rilke

Letters to a Young Poet (1903)

4.1. Overview of Dialectical Behavior Therapy

Dialectical Behavior Therapy (DBT; Linehan, 1993, 2014) is a structured, complex and comprehensive cognitive-behavioral treatment program for patients with Borderline Personality Disorder (BPD) and severe dysfunctional behaviors (repeated suicidal attempts, self-harm behaviors, relational instability, other impulsive behaviors). DBT proved its effectiveness reducing suicide attempts and dysfunctional behaviors, and improving emotional regulation and general functioning; DBT also reduced a negative self-referential attitude, even compared with treatments provided by experienced clinicians.

Overall, the study aimed at assessing the effectiveness of DBT, examined both in terms of outcome with respect to target behaviors and processes during individual therapy sessions.

The first part of the thesis is dedicated to the presentation of the DBT model, examining its theoretical foundations, intervention strategies, the agreements underlying the treatment, and the modalities of therapeutic intervention.

In the DBT model, Borderline Personality Disorder is characterized by a component of temperamental vulnerability (emotional dysregulation) and by a component of environmental origin, later internalized with growth (invalidation of internal states, understood as the difficulty in recognizing and giving value to what is experienced; Linehan, 1993). From the point of view of functioning, patients with this disorder have serious impairments in the stability of self-image and relationships, in social and work functioning, and, consequently, their quality of life is very low. Because of the high degree of impairment resulting from this condition, Borderline Personality Disorder is associated with high health care utilization (Bender et al., 2001; Dubovsky & Kiefer, 2014).

The theoretical fundamentals of DBT are behavioural science, dialectics and mindfulness practice (Linehan & Wilks, 2015). Problematic impulsive behaviours (i.e., self-injury, alcohol or substance abuse, binge eating) are considered attempts to manage overwhelming affects, although generating harmful consequences and negative secondary emotions (Linehan, 1993). The main goal of DBT is to regulate behaviours and emotions by practising an accepting attitude and effective coping strategies, to build a life worth living (Linehan, 2014).

4.2. Outcome study

The second part of the thesis is an evaluation of the effectiveness of DBT in terms of outcome, examining the trend over time of the target variables. The study is longitudinal, single-blind, with a two-arm parallel design, conducted following the international guidelines for the outcome studies, comparing DBT with a treatment program comparable by patient type, objectives, complexity and level of structuring.

The other treatment program is Group Experience Therapy (GET), a manualized psychodynamic-oriented treatment developed by Visintini and his team (Gaj et al., 2016; Visintini, 2017; Visintini et al., 2014) at San Raffaele Scientific Institute, Milan, Italy, for outpatients with Borderline Personality Disorder. Group setting is the core element of GET, since it is considered the preferential context for developing, enhancing and sharing effective self-regulation strategies (Andión et al., 2012). Both DBT and GET are comprised by four modes: highly structured group sessions (DBT skills training vs. GET activities focused on crisis, planning, emotional and bodily activation), individual psychotherapy, emergency telephone consultations with the individual therapist, and consultation/peer-supervision meetings.

The sample of the study was comprised by 95 outpatients ($N_{completers}$ = 53), assigned to groups with the minimisation procedure and assessed every three months. Since the individual variability was expected to be consistent, Hierarchical Linear Models (HLM) with random effects were used.

Overall, results showed that suicidality, self-harm, emotional and behavioral dysregulation decreased in both groups after one year; moreover, unconditional growth models indicated that subjects differed in the elevation and in the rate of change. However, results on the completers' subsample suggested that there could be a relevance of group setting or the intensity of treatment as specific therapeutic mechanisms.

More specifically, results showed significant changes in target variables in both treatment programs over one year, supporting the effectiveness of DBT and GET. Results were consistent with previous findings on DBT and also with preliminary data of our group in outpatients (Carretta et al., 2015; Roder et al., 2017; Visintini et al., 2014). For the most variables, even if GET and DBT differed from a theoretical perspective and from clinical interventions,

differences between them were substantial only for few dimensions and their therapeutic actions are quite overlapping on target variables.

Hierarchical Linear Models allowed to take into account subject-level, determining that individual scores in all variables significantly deviating from the mean intercept for each treatment group; also, some variables showed different rates of change for different subjects. Consistent with literature on PDs (Lenzenweger et al., 2004) and on BPD psychotherapies (McMain et al., 2012; Soler et al., 2009; Wilks et al., 2016), in our study subjects differed in their response to treatment, and this confirms the necessity of computing individual regression lines to model changes during treatment.

As expected, direct self-harm reduced in both groups, also for subjects who did not complete their treatment programs. Along with structured treatment of BPD (Stoffers et al., 2012), our results confirmed that over one year DBT and GET have a significant effect on suicide and nonsuicidal self-injury, without differences between programs.

A first specificity of mechanisms of action in GET and DBT could be assumed in the use of mindfulness. Mindfulness is a complex construct consisted of two components (Dryden & Still, 2006): focus attention on purpose towards present internal and/or external experiences, and practicing this in an open and accepting way. Mindfulness capacities are relevant to patients with BPD symptomatology (Cavicchioli et al., 2015): sccordingly, both DBT (Linehan, 2014) and GET (Visintini, 2017) theorized mindfulness as a core mechanism of their therapeutic action and home mindfulness practice is strongly encouraged. The central role of mindfulness in both treatment programs accounts for the absence of significant differences between GET and DBT in the low threshold of reactivity to sensations and stimuli, and the ability to put subjective experiences in words. This, in conjunction with specific skills or group activities, could also explains the similar effects on behavioral dimensions (i.e., impulsivity, self-harm behaviors).

However, differences arise between treatment programs in the completers' subsample in relation to the first component of mindfulness, that is, the ability to put attention to inner states and to be aware of their onset, course and effects on body and mind. It seems to be enhanced in a stronger way in GET than in DBT for subjects who completed one-year of treatment, probably due to a longer, constant, and regular mindfulness guided practice in GET.

With regard to the second component of mindfulness, that is, the nonjudgmental attitude, this seems to be quite difficult to change, probably for its inherent complexity (Carson &

Langer, 2006; Linehan, 2014): in fact, these dimensions didn't show significant changes over one year in the intention-to-treat sample, nor in the completers' subsample.

Focusing on behavioral and emotional dysregulation, GET patients who completed the first year of treatment improved stronger than DBT group in some dimensions. Both common and specific mechanisms of action could be hypothesized.

A first mechanism concerns a common target of DBT and GET, the ability to interrupt impulsive behaviors. However, the same activities are addressed with a different frequency in the two groups, weekly in GET and sequentially in DBT (Carretta et al., 2015). The more frequent practice in GET could account for the better management of the impulsivity due to emotion dysregulation for patients who attended the full first year of treatment.

Another GET therapeutic factor it is likely to be sharing experiences in multiple group activities. BPD patients seem to be prone to experience strong sensitivity to social rejection (Velotti, Garofalo & Bizzi, 2015); on the other side, it has well demonstrated that, when individuals experience less interpersonal problems, they exhibited faster reduction of emotion dysregulation (Wilks et al., 2016). Therefore, sharing experiences in multiple therapeutic group settings it's a way to expose BPD patients to social cues, modulate rejection sensitivity and reduce secondary emotions, such as shame and guilt (Bungert, Liebke, Thome, Haeussler, Bohus & Lis, 2015; Berenson et al., 2016).

The demonstrated effectiveness of GET and DBT goes along with the trend of change of quality of life, which showed improvement in both treatment programs; the effect is robust since no differences were found between the completers and the full sample.

Nonetheless, a critical question of GET is the intensity of treatment in the first year (6-7 hours a week), which is higher than DBT (3-4 hours a week), since a specific attention should be devoted to the cost-effectiveness aspects (Soeteman & Kim, 2013). Future studies are needed in order to investigate if attendance is related to a significant greater or faster improvement on outcomes.

4.3. Process studies

The third part of the thesis is composed of a series of process studies with a single-case design, in the strand of the process-outcome research. The studies are the empirical evaluation of two therapeutic couples, one with a favorable outcome and one with a partial outcome.

The patients examined were Elizabeth and Joan, two young women with a DSM-IV diagnosis of Borderline Personality Disorder. Elizabeth had a codiagnosis of Narcissistic Personality Disorder, while Joan a codiagnosis of Passive-Aggressive Personality Disorders and substance abuse in remission. Elizabeth's problematic behaviors at the beginning of treatment were suicide attempts, self-harm behaviors, sexual promiscuity, abuse of alcohol and anxiolytic drugs; Joan had a substance use disorder manifested early in adolescence, an history of abusive partners and illegal conducts. The therapist was the same for both patients, a male experienced clinician, trained and certified in DBT, along with his team. Thus, patients were different for personality profile and dysfunctional behaviors at the beginning of treatment; they followed a DBT standard program and the sessions over the first year of treatment were examined ($N_1 = 38$, $N_2 = 37$).

The aim of the studies was to investigate the relationships between the outcomes and the process variables, since it was supposed that DBT outcomes depends on both technical and relational dimensions, linked to specific aspects of a therapeutic couple (Burckell & McMain, 2011). In order to do this, several studies were conducted, each with different objectives, hypotheses and instruments. In the studies, both the technical and the relational dimensions of the therapeutic process were considered (Wampold & Imel, 2015), both according to a dual perspective, macroanalytic and microanalytic (Beebe, 2006).

More specifically, the adherence to the treatment model (technical macroanalytic dimension), the validation interventions (technical microanalytical dimension), the interaction structures emerging in each therapeutic couple (relational macroanalytic dimension), and the interventions related to the therapeutic alliance were examined (relational microanalytic dimension).

Sessions were evaluated with the *Psychotherapy Process Q-Set* (PQS; Jones, 2000) and the *Collaborative Interactions Scale – Revised Form* (CIS-R; Colli et al., 2014). Moreover, a preliminary investigation on a selection of sessions was conducted with the *DBT Validation Level Coding Scale* (DBT-VLCS; Carson-Wong & Rizvi, 2016).

The results showed that some aspects can be found in both therapeutic couples.

First of all, with regard to the adherence to therapeutic model, results suggested that the examined sessions are in accordance with an ideal DBT session defined by clinicians, also confirming the specificity of DBT sessions over ordinary psychotherapy sessions. Moreover PQS prototypes concerning mentalizing interventions reached intermediate scores in both patients, supporting the hypothesis that the focus on reflective functioning represents a common therapeutic process of psychotherapies from any theoretical background (Fonagy & Adshead, 2012; Steele, Murphy & Steele, 2015).

Regarding the microanalytic technical dimension, a study was devoted to validation, which is particularly important in DBT since it balances the proneness to change supported by the behavioral component of the treatment. In the DBT model, validation interventions are divided into six levels (Linehan, 1997), suggesting that it is a complex and multifaced mechanism of therapeutic action, rather than a simple intervention.

Validation is defined as the act of paying attention, substantiating, or apprehending what is an authentic experience from the individual perspective (Linehan, 1997). The goal of validation in the DBT, in light of the biosocial theory (Linehan 1993), is to reduce the negative impact of self-invalidation and allow the development of self-validation mechanisms (Swenson & Linehan, 2016). Even if it is considered an acceptance-oriented strategy (Linehan, 2014), validation also allows patients to remain in contact with primary or painful emotions, thus it is likely to be an exposure procedure aimed at changing emotional responses (Lynch et al., 2006; McMain, Korman & Dimeff, 2001).

The results on DBT-VLCS scales showed that therapist frequently payed attention, listened to and observed the patient's statements, feelings, and behaviors with both patients. Also, he used to accurately reflect or restate patients' feelings, thoughts, and assumptions. Moreover, in responding to patients, therapists used genuine responses and treated patients as a person. Such processes played an important role in getting in synchrony during session and sustaining a collaborative relationship (Swenson, 2016).

On the other side, the verbalization of unstated patients' experiences (such as emotions and thoughts) was used to a lesser extent than the other two interventions. Such intervention is considered particularly delicate and difficult to apply, since it involves reflecting what has been *implicitly* communicated, thus it was rather used in the presence of certain conditions that would allow its therapeutic usefulness (Linehan, 1997).

However, some differences arise between therapeutic couples. Joan's sessions showed a significant higher frequency of DBT violations, it could be argued that it was more difficult for the therapist to follow what DBT suggested (both from a technical and a relational point of view) with a patient who maintained problematic behaviors.

Regarding the comparison between the two therapeutic couples on validation interventions, it seems that the therapist was therefore more attentive and empathetic towards Elizabeth, was able to better reflect the content expressed by her, and justified her behavior in the light of the current life context more than she does with Joan. The difference in radical genuineness, considered the highest level of validation, showed that the therapist tended to treat Elizabeth as a peer, structuring a therapeutic relationship of a horizontal nature, while maintaining with Joan a more direct and less involved attitude. It is possible to hypothesize that the therapist, aware of Joan's fragility and of his oscillations between addiction and anger, was struggling to maintain a spontaneous attitude during the treatment. Probably, the differences detected in the other levels are rooted in this relational configuration.

Examining interaction structures, in the treatment of Elizabeth, there was a globally positive relational climate, oriented towards collaboration and commitment. Therapist and patient can also deal with the episodes of misunderstanding, distrust and moments of fragility of the patient. Results are in accordance with what was expected from a successful DBT treatment.

Instead, in the treatment of Joan, analyses highlighted only problematic interaction structures, connoted by negative emotional experiences. Therapist and patient struggled to find an attunement, to admit their difficulties and to work in synergy on emotional states, therapeutic goals and life situations. Sometimes Joan was wary and suspicious, sometimes angry and hostile, sometimes overwhelmed by negative affectivity, sometimes absent and silent. On the other side, therapist was occasionally distant and aloof: in such situations, it is possible that Joan's great and profound need of support, not explicit and therefore not a thematic in session, made the therapist uncomfortable, thus he reacted with a distancing attitude towards the patient.

Examining therapeutic alliance, a first consideration is that indirect markers were more frequent and meaningful than direct markers. This result is in line with the fact that DBT is focused on the current life problems of patients and their resolution (Linehan, 1993, 2014).

Moreover, regarding the dimension of collaboration, no differences were found between the two couples in the scores of specific markers. The couples seem to work in a very close

way, supporting the fact that DBT is very clear about what it means to do DBT, in terms of objectives, tasks and goals. Furthermore, DBT supports a synergistic, active and collaborative attitude between patient and therapist. The good adherence to the therapeutic model detected with the PQS prototypes is further confirmed in these results.

However, the average level of collaboration was higher in Elizabeth's sessions, while the average level of rupture was higher in Joan's sessions. This evidence seems to confirm a parallelism between the outcomes and the process (Burckell & McMain, 2011). However, more careful analyzes showed a more complex picture of the relational dimension.

In fact, in Joan's sessions, the therapist deals with more frequently issues related to participation in therapy, respect for tasks and agreements, and also to the nature of the therapeutic bond. It is necessary to clarify how DBT dedicated a specific work on the therapeutic relationship in two phases: to support the commitment and to address the patient's behaviors that interfere with the therapy (Linehan, 1993). This mode of work is specific to DBT (Linehan, 1993); at the same time, it is in agreement with what Safran and Muran suggested (2002) on the need to address the relational problems in therapy as a dedicated target, comparing the patient with tasks, goals and difficulties in respecting or maintaining them. Thus, results are in line with the indication in DBT to address relational problems when they interfere with the therapy, in order to support a solid and active commitment in the patient (Cameron et al., 2014).

Furthermore, specific and different trends emerge for the two therapeutic couples as regards the rupture markers. In other words, the specificity of each therapeutic dyad seems to take shape in relation to where and how difficulties, misunderstandings, distances emerge.

Taken together, results confirmed the effectiveness and the complexity of DBT; moreover, they shed light on overlaps and differences between DBT and other theoretical models, in particular interventions promoting reflective functioning. Results underlined the importance of a collaborative relationship between therapist and patient, and they suggested that mechanisms of action in DBT can be understood only in light of the dynamics of the therapeutic couple in which they occur.

4.4. Concluding remarks

Overall, the study can be considered an attempt to represent the complexity and richness that characterize a DBT treatment.

This richness is due, on the one hand, to the variety of technical interventions that can be used by DBT therapists. Consider, for example, how much the validation levels or the overlaps with the interventions that support the reflexive function differ. On the other hand, this richness is due to the individual characteristics of the patients: the study has shown how the individuality of each patient significantly determines the outcome and the treatment process.

Since treatment is always a collaborative work, the study highlights the need to consider not only individual participants (patients and therapists), but also – and especially – what happens when they work together. In fact, the results on the process studies show how the same competent and experienced therapist acts in a very different way with two different patients. In other words, when two people work together, a third superordinate dimension is generated, specific to that couple, which will define and determine the course of therapy. It is likely to assume that such dynamics also occur in groups, although it is more complex to demonstrate it.

Another important aspect that emerged from the study is related to the instruments used in the process study, which seem to show each one its own specificity, both in the constructs that detect, as in the perspective they adopt: in fact, some tools allow an overview, while others they measure more selective and punctual aspects.

The study presented is a preliminary work. Despite the vastness of the topics addressed, it does not aim to be exhaustive. The study aims to capture the dynamics described, suggest a more dynamic and open way of looking at research in psychotherapy, and start new work hypotheses. In fact, the study leaves many pending issues: for example, the relationships between the detected variables were not examined, nor were evaluations on all the dimensions that could be measured. These are hypotheses for further study.

Implications of the study are both clinical and research.

Clinical implications are about the necessity to tailor treatments to patients, with a particular attention to specificity, strengths and weakness of each therapist involved in patients' cares. Moreover, the clinical implications concern the importance of paying attention to the

dynamics that are created within the settings of clinical work: in the therapeutic couple for individual sessions, within a group in group settings.

Research implications are about the way in which we conduct projects and analyze results. With regard to projects, it is necessary to conduct studies that take into account the individual dimensions of patients and the factors that can influence their response to treatment, for example by identifying and monitoring related variables. As far as the analyzes are concerned, multilevel models are needed to evaluate the complexity of the variables examined. Finally, from a methodological point of view, the work presented here intends to underline the usefulness of studies on the individual case, in order to offer important ideas for reflections that are able to combine clinical practice and research protocols.

Supplementary material

2017 CONSORT checklist of information to include when reporting a randomized trial assessing nonpharmacologic treatments (NPTs; Boutron et al., 2017)

Section/Topic item	Checklist item no.	CONSORT item with extension for NPT trials	In the present study
Title and abstract			
	1a	Identification as a randomized trial in the title	*Done*
	1b	Structured summary of trial design, methods, results, and conclusions	*Done*
Introduction			
Background	2a	Scientific background and explanation of rationale	*Done*
Objectives	2b	Specific objectives or hypotheses	*Done*
Methods			
Trial design	3a	Description of trial design (such as parallel, factorial) including allocation ratio	*Done*
		How care providers were allocated to each trial group	*Done*
	3b	Important changes to methods after trial commencement (such as eligibility criteria), with reasons	*Not applicable*
Participants	4a	Eligibility criteria for participants	*Done*
		When applicable, eligibility criteria for centers	*Not applicable*
		When applicable, eligibility criteria for care providers	*Not applicable*
	4b	Settings and locations where the data were collected	*Done*
Interventions	5	The interventions for each group with sufficient details to allow replication, including how and when they were actually administered	*Done*
		Precise details of both the experimental treatment and comparator	*Done*
	5a	Description of the different components of the interventions	*Done*
		When applicable, description of the procedure for tailoring the interventions to individual participants	*Not applicable*
	5b	Details of whether and how the interventions were standardized	*Done*
	5c	Details of whether and how adherence of care providers to the protocol was assessed or enhanced	*Done*
	5d	Details of whether and how adherence of participants to interventions was assessed or enhanced	*Done*
Outcomes	6a	Completely defined pre-specified primary and secondary outcome measures, including how and when they were assessed	*Done*
	6b	Any changes to trial outcomes after the trial commenced, with reasons	*Not applicable*
Sample size	7a	How sample size was determined	*Done*
		When applicable, details of whether and how the clustering by care providers or centers was addressed	*Not applicable*
	7b	When applicable, explanation of any interim analyses and stopping guidelines	*Not applicable*
Randomization			
Sequence generation	8a	Method used to generate the random allocation sequence	*Not applicable*
	8b	Type of randomization; details of any restriction (such as blocking and block size)	*Done*
Allocation concealment mechanism	9	Mechanism used to implement the random allocation sequence (such as sequentially numbered containers), describing any steps taken to conceal the sequence until interventions were assigned	*Done*
Implementation	10	Who generated the random allocation sequence, who enrolled participants, and who assigned participants to interventions	*Done*
Blinding	11a	If done, who was blinded after assignment to interventions (for ex., participants, care providers, those administering co-interventions, those assessing outcomes) and how	*Done*

Section/Topic item	Checklist item no.	CONSORT item with extension for NPT trials	In the present study
	11b	If relevant, description of the similarity of interventions	*Done*
	11c	If blinding was not possible, description of any attempts to limit bias	*Done*
Statistical methods	12a	Statistical methods used to compare groups for primary and secondary outcomes	*Done*
		When applicable, details of whether and how the clustering by care providers or centers was addressed	*Not applicable*
	12b	Methods for additional analyses, such as subgroup analyses and adjusted analyses	*Done*
Results			
Participant flow (a diagram is strongly recommended)	13a	For each group, the numbers of participants who were randomly assigned, received intended treatment, and were analyzed for the primary outcome	*Done (with diagram)*
		The number of care performing the intervention in each group and the number of patients treated by each care provider	*Done*
		The number of centers performing the intervention in each group and the number of patients treated in each center	*Not applicable*
	13b	For each group, losses and exclusions after randomization, together with reasons	*Done*
	13c	For each group, the delay between randomization and the initiation of the intervention	*Not applicable*
		Details of the experimental treatment and comparator as they were implemented	*Done*
Recruitment	14a	Dates defining the periods of recruitment and follow-up	*Done*
	14b	Why the trial ended or was stopped	*Done*
Baseline data	15	A table showing baseline demographic and clinical characteristics for each group	*Done*
		When applicable, description of care providers (case volume, qualification, expertise, etc.) in each group	*Done*
		When applicable, description of centers (volume)	*Not applicable*
Numbers analyzed	16	For each group, number of participants (denominator) included in each analysis and whether the analysis was by original assigned groups	*Done*
Outcomes and estimation	17a	For each primary and secondary outcome, results for each group, and the estimated effect size and its precision (such as 95% confidence interval)	*Done*
	17b	For binary outcomes, presentation of both absolute and relative effect sizes is recommended	*Done*
Ancillary analyses	18	Results of any other analyses performed, including subgroup analyses and adjusted analyses, distinguishing pre-specified from exploratory	*Done*
Harms	19	All important harms or unintended effects in each group	*Done*
Discussion			
Limitations	20	Trial limitations, addressing sources of potential bias, imprecision, and, if relevant, multiplicity of analyses	*Done*
		In addition, take into account the choice of the comparator, lack of or partial blinding, and unequal expertise of care providers or centers in each group	*Done*
Generalizability	21	Generalizability (external validity, applicability) of the trial findings according to the intervention, comparators, patients, and care providers and centers involved in the trial	*Done*
Interpretation	22	Interpretation consistent with results, balancing benefits and harms, and considering other relevant evidence	*Done*
Other information			
Registration	23	Registration number and name of trial registry	*Not applicable*
Protocol	24	Where the full trial protocol can be accessed, if available	*Done*
Funding	25	Sources of funding and other support (such as supply of drugs), role of funders	*Done (no funding)*

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