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Group Experience Therapy for outpatients with Borderline Personality Disorder features: preliminary results on its effectiveness in a randomized trial

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Abstract

Objective: Group Experience Therapy (GET; Visintini et al., 2019) is a structured treatment for patients with Borderline Personality Disorder (BPD) features. The study aimed at evaluating GET effectiveness in a longitudinal, single-blind, two-arm parallel design, comparing GET with Dialectical Behavior Therapy (DBT; Linehan, 1993, 2014). The individual variability was expected to be consistent.

Methods: The sample was comprised of 95 outpatients, assigned to groups with the minimisation procedure and assessed every three months. Treatments were delivered by 28 therapists at the San Raffaele Scientific Institute, Milan, Italy. Hierarchical Linear Models with random effects were used; supplementary analyses were repeated for the completers' subsample ($N = 53$).

Results: Suicidality, self-harm, emotional and behavioral dysregulation decreased in both groups after one year. Strategies to regulate intense emotions and mindfulness skills improved better in GET for the completers. Unconditional growth models indicated that subjects differed in the elevation and in the rate of change.

Discussion: GET and DBT reached comparable outcomes on target variables over one year. Group setting or the intensity of treatment could be hypothesized as GET-specific therapeutic mechanisms.

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1. Introduction

In DSM-5 (American Psychiatric Association [APA], 2013), Borderline Personality Disorder (BPD) is defined as characterized by moderate-to-severe impairments in personality, interpersonal, and general functioning. In European and US epidemiological studies it has a

prevalence of 1-2% in general adult population and 10% in psychiatric outpatients, usually more common in women (about 70% of BPD patients) (Leichsenring, Leibing, Kruse, New, & Leweke, 2011). More than 75% of BPD patients engage in nonsuicidal self-injurious behaviors (NSSI; Oldham, 2006). About 70-80% of BPD patients make at least a suicide attempt lifetime and the rate of completed suicide is between 8% and 10% (Homan, Sim, Fargo, & Twohig, 2017). BPD is associated with high health care utilization (Bender et al., 2001; Dubovsky & Kiefer, 2014). Up to now, several studies have established the efficacy of different treatment programs on BPD core features; however, results suggested that treatments' specificity could be detached in the mechanisms of action rather than in outcomes differences (Stoffers et al., 2012).

Stating the current research debate on therapeutic factors for BPD therapies (e.g., Barnicot et al., 2012), in the present study we evaluated the effectiveness over one year of the Group Experience Therapy (GET; Visintini, Baldin, Carretta, Gaj, & Segrini, 2019; Visintini et al., 2014), a psychodynamically-oriented structured program for BPD developed by clinicians with expertise in treating severe Personality Disorders (PDs) at San Raffaele Scientific Institute, Milan, Italy. It follows the recommendations of the APA Practice Guidelines (APA, 2001). Group setting is a specific 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 comprises 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). Other fundamentals are mentalization, which is considered a key strategy for actively encouraging a detailed exploration of critical events (i.e., specificity about what happened, in terms of facts, thoughts and feelings) and sustaining a fruitful discourse in group activities (Karterud, 2015a, 2015b); finally, behavioral strategies and protocols for the management of crisis situations (e.g., Beck, Davis, & Freeman, 2015; Wells, 2000). GET consists of two phases: the first one lasts for one year with the same target of DBT first stage, while the second one has a strong psychodynamic orientation. Preliminary data showed good effectiveness on emotional and behavioral dysregulation (Carretta et al., 2015; Visintini et al., 2014), with a quick achievement of more balanced emotional experiences and problem solving skills (Roder, Visintini, & Maffei, 2017).

In the present study, GET first phase was compared with Dialectical Behavior Therapy (DBT; Linehan, 1993, 2014). Previous studies demonstrated that both DBT and psychodynamic approaches seemed to be effective on self-harm behaviors, suicide attempts, health service use and psychopathological symptoms (Cristea et al., 2017). Moreover, DBT skill training was superior to standard group therapy in general psychiatric symptoms, depressive symptoms,

anxiety, irritability, anger and affect instability (Soler et al., 2009). Given the richness of their theoretical background, the complexity of scheduled activities, and the expected multidimensional therapeutic action, we considered GET first phase and DBT comparable with regard to the effectiveness over primary clinical target in a sample of patients with BPD traits. Thus, over one year, we hypothesized that participants in both groups showed relevant reduction of suicidal and non-suicidal self-harmful behaviors, behavioral and emotional dysregulation, and 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 on the wide heterogeneity within BPD patients (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 significant for all dimensions assessed.

2. Methods

2.1 Study design

The current study is a longitudinal study, single-blind, with a two-arm parallel design, designed to assess the equivalence of two treatment groups with regard to primary outcomes. Treatment allocation was done through the minimization procedure, 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 assigned to GET or DBT balancing groups for age, sex, and clinical profile (i.e., Personality Disorders traits); no random components were used. Both treatments were conducted at the Clinical Psychology and Psychotherapy Unity, San Raffaele Scientific Institute, Milan, Italy. Participants were outpatients enrolled between 2011 and 2016. The protocol was drawn up in observance of The Code of Ethics of the World Medical Association (Declaration of Helsinki), approved by San Raffaele Scientific Institute ethics board as clinical practice for monitoring and evaluating 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 PD, with at least five criteria of a cluster B PDs and three criteria of BPD, 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 disorders (i.e., DSM-IV mood disorder) and any medical condition precluding treatment attendance over one year.

Patients with alcohol/substance dependence or eating disorders were admitted only if they can be considered in 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 (C.M. and R.V.) were not blind to treatment assignment and collected patients' data about past and current 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.

2.2 Treatment programs

Dialectical Behavior Therapy (DBT) is a well-known manualized cognitive-behavioral treatment developed by Linehan (1993, 2014) for patients with BPD and chronical suicidal or self-harm acts. Its theoretical fundamentals are behavioral science, dialectic, Zen and contemplative practices. DBT main goal is to regulate behaviors and emotions through practicing mindfulness and effective coping strategies, in order to build a life worth living (Neacsiu, Rizvi, & Linehan, 2010). Along with individual sessions, skills training, preferable in group setting (Andión et al., 2012), aims to exercise 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 high-risk dysfunctional conducts and to learn new skills. Up to now, DBT proved its effectiveness reducing behavioral problems, improving emotion processing and expression, general and relational functioning, increasing acceptance and self-efficacy (Linehan et al., 2015; McMain et al., 2012; Neacsiu et al., 2014; Soler et al., 2009; Wilks et al., 2016).

GET theoretical fundamentals have been described briefly in the introduction and extensively elsewhere (Visintini et al., 2019). As all study subjects assigned to GET followed the activities of the first phase, the second phase will not be described in detail below (for a complete description, see Visintini et al., 2019). Both DBT and the first phase of GET are comprised by four modes: highly structured group sessions (DBT skills training and GET activities focused on crisis, planning, emotional and bodily activation), individual sessions, emergency telephone consultations with the individual therapist, and team consultation 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 1.

Table 1. GET (only first phase) and DBT core features.

Treatment program	**Group Experience Therapy** (GET; Visintini et al., 2019)	**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	• 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	Four group a week, all activities repeated weekly; individual sessions (6-7 hours a week)	One group a week, modules in sequence; individual sessions (3-4 hours a week)

2.3 Therapists

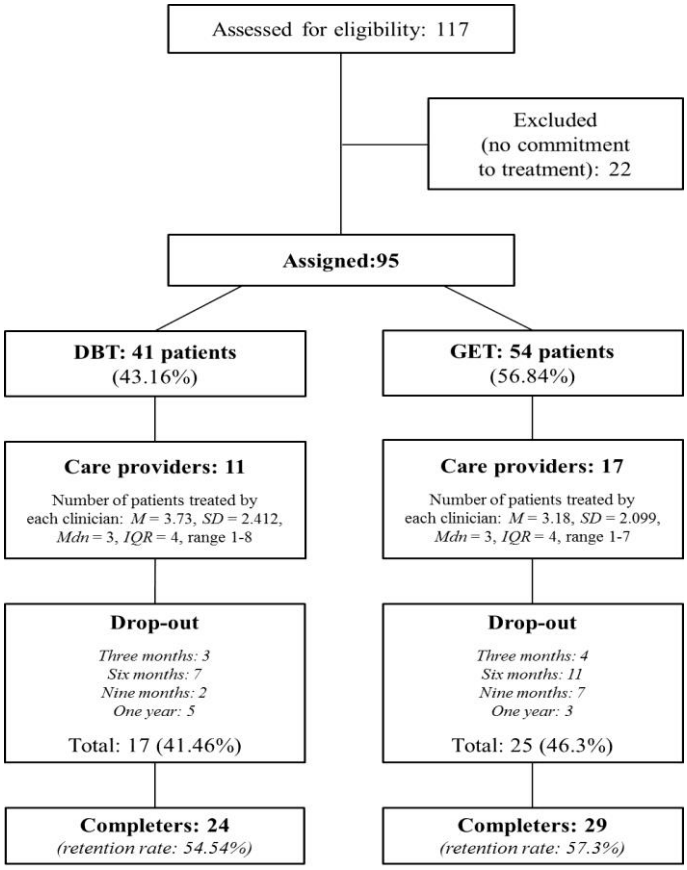
Treatments were delivered by 28 therapists, no overlapping between programs, with at least one year of clinical experience in treating BPD patients. Therapists was 17 in GET and 11 in DBT: 2 psychiatrists (one providing GET and one DBT), 6 Psy.D. psychologists (two in GET and four in DBT), 20 clinical 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 in the proportion of qualification degrees between treatment groups, $\chi^2_{(2)} = 2.705$, Cramer's $V = 0.311$, $p = .351$, nor for the years of therapists' experience, $F_{(1, 26)} = 1.915$, $p = 0.178$. No difference was 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, no one delivering psychotherapeutic activities.

2.4 Clinical sample

A total of 117 subjects were considered eligible for GET or DBT. Preliminary analyses were carried out to determine the sample size using G*Power Software. Results suggested that an overall number of 196 subjects could be considered satisfactory for detecting changes in the

main target variables (i.e., SHI total score). Thus, we considered our sample satisfactory for preliminary results, further analyses are required. The sample of Protocol of power analysis are available under request. Twenty-two subjects didn't agree upon treatments' goals or commitment; thus, they didn't begin any therapeutic program. The overall sample was comprised by 95 subjects, assigned to DBT or GET. Over one year, 53 subjects completed their program (retention rate of 55.79%). Reasons for dropout were worsening of psychiatric symptoms, loss of motivation, ruptures in the therapeutic alliance, and environmental difficulties (which required residential treatments). Patients' flow through the study is shown in Figure 1. All allocated subjects were included in the intention-to-treat analysis; additional analyses were run for the completers' subsample.

Figure 1. CONSORT flow diagram of patients' progress through the study. *Note.* DBT: Dialectical Behavior Therapy; GET: Group Experience Therapy



Descriptive statistics of demographic and clinical variables of the intention-to-treat sample are summarized respectively in Table 2 and in Table 3. In the intention-to-treat sample, all subjects had at least one PD diagnosis, the more frequent was BPD. The completers' sample was comprised by 8 males (15.1%) and 45 females (84.9%), with a mean age of 27 years (M = 26.92, SD = 7.449). 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 BPD, 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).

Table 2. 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 3. 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 DISORDERS				
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 (SCID-II diagnoses)	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

2.5 Missing data

Two types of missing values were detected in our dataset: subjects who missed an assessment intermediate phase and treatment drop-out (Mazumdar et al., 2007).

Little's Tests were run to detect if missing values were randomly distributed across observations. After three months, Little's Test was significant, $\chi^2_{(58)} = 80.282$, $p = .028$, again at six months, $\chi^2_{(53)} = 72.023$, $p = .042$, and at nine months, $\chi^2_{(20)} = 49.078$, $p = .000$. After one year, Little's Test was no longer significant, $\chi^2_{(41)} = 42.620$, $p = .401$. Comparing baseline scores between completers and drop-out subjects, no significant differences were found in all demographic and clinical dimensions assessed, thus their differences could depend on unobserved variables. Missing data due to premature interruption of treatment were imputed carrying forward the latest observation: even if this method has some critic aspects (Moher et al., 2010), it keeps a conservative estimate of scores over time since it assumes there will be no further improvement for drop-out subjects (Lane, 2008; Streiner, 2002).

2.6 Outcome measures

Outcome measures were assessed regularly every three months over one year, with overall five surveys for each subject. There was no paid reward for patients' assessment.

The first year of treatment corresponds with the first phase: thus, outcome measures concerned treatment targets of the first stage. The primary outcome measures were suicidal and self-harmful behaviors, assessed by the *Self-Harm Inventory-22* (SHI-22; Sansone, Wiederman, & Sansone, 1998), measuring the frequencies of suicide attempts, direct (i.e., cutting, burning) and indirect (i.e., lost relationships or jobs on purpose) self-harm behaviors.

Recent research findings demonstrated the complexity of affective and cognitive functioning in BPD, suggesting that their interplay was related to self-harm (Gratz, Bardeen, Levy, Dixon-Gordon, & Tull, 2015) and psychological functioning (Preti, Richetin, Suttora, & Pisani, 2016). Therefore, in the present study core features of BPD personality functioning, referred to DSM-5 trait-level description (APA, 2013), were taken into account as secondary outcome measures: 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 BPD patients of mindfulness (Cavicchioli, Rugi, & Maffei, 2015; Scheibner, Spengler, Kanske, Roepke, & Bermpohl, 2016), these dimensions were assessed by the *Five Facet Mindfulness Questionnaire* (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). Finally, quality of live was investigated by the *World Health Organization WHoQoL-BREF* (The WHoQoL Group, 1998).

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) was used to test changes in outcome variables for repeated measures in nested longitudinal data. Relevant to the present study are the tolerance toward missing values and the use of time as a continuous variable, which increases the statistical power

(Muthén & Curran, 1997; Singer & Willett, 2003) and makes HLM best suitable for cumulative responses over time sessions (e.g., Wilks et al., 2016). Another specific advantage of HLM is the fact that polynomial trends in the variance-covariance structures can be estimated shaping individual growth curves (Estes, 1956; West et al., 2011), disentangling between-subjects factors, within-subjects effects, and random error variance (Lenzenweger, Johnson, & Willett, 2004).

In the present study three models were compared. Primary aim was to determine changes in outcome variables and whether treatment groups had differential or overlapping effects on target variables. Thus, we examined the fixed effects of time (within-subjects factor) and treatment program (between-subjects factor), also computing the interaction effect Time*Treatment. The secondary aim was to investigate the growth trajectories adding random effects with subjects as clustering variables: for each dimension, two growth models were built, with first the intercept and then the slope as random parameters; an unstructured covariance matrix between random effects was specified due to its computational flexibility. In all models age, sex, and baseline scores were added as covariates. The estimator used was the Restricted Maximum Likelihood (REML). Since models for each outcome variable were nested (i.e., they had the same fixed factors), the appropriate covariance structures were determined with Deviance Test (Raudenbush & Bryk, 2002; Spiegelhalter, Best, Carlin, & Linde, 2014).

Analyses were conducted in the full sample, i.e. the intention-to-treat sample. In order to detach specific treatment effects and to overcome an 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; for multiple comparisons Bonferroni correction to the significance level was applied. Analyses were performed using SPSS 19.0 software (IBM Corp., 2010) with the MIXED procedure for HLM.

3. Results

3.1 Baseline profile

No differences were found between GET and DBT groups for demographic, clinical and personality variables at baseline. Considering baseline scores, there were no significant differences between completers and drop-out subjects.

3.2 Treatment outcome

Descriptive statistics for outcome variables are listed in Table 4. The percentage of recovered patients in the two treatment groups for each time point was calculated by the clinically significant change index (CSC; Jacobson & Truax, 1991), both in the intention-to-treat sample and for completers. Normative data were obtained from standardized norms or studies using large samples; Italian studies were preferred when available.

Table 4. 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	*M*	1.26	0.41	0.38	0.38	0.27	1.86	0.45	0.46	0.39	0.37
attempts	*SD*	1.536	.638	.565	.599	.528	2.440	.677	.711	.666	.623
SHI Direct	*M*	4.35	2.65	2.44	2.12	1.81	4.43	3.08	2.56	2.17	2.15
self-harm	*SD*	2.581	2.198	2.500	2.398	2.232	1.923	2.347	2.203	2.167	2.186
SHI Indirect	*M*	6.58	4.20	3.65	3.13	2.67	6.73	4.70	4.78	3.78	3.85
self-harm	*SD*	4.083	2.987	3.360	3.068	2.826	3.246	3.575	2.988	3.174	3.475
SHI Total	*M*	10.38	6.84	6.10	5.25	4.48	11.16	7.78	7.34	5.95	6.00
(cut-off: 5)	*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	*M*	126.74	114.25	107.57	106.56	101.02	135.13	120.78	117.98	112.05	107.85
Total	*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	*M*	75.02	74.71	72.69	69.83	69.38	74.41	70.97	70.46	68.00	70.31
Total	*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	*M*	24.87	25.00	25.07	25.98	25.79	23.39	20.22	21.97	21.66	22.10
Observe	*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	*M*	24.55	24.88	25.27	26.17	26.10	22.25	22.52	23.66	24.10	24.41
Describe	*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	*M*	23.06	24.32	24.02	25.28	25.42	20.71	21.48	22.48	23.14	24.17
Acting with	*SD*	6.377	6.295	6.662	6.971	6.940	6.235	5.402	7.074	6.626	6.887
awareness	**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	*M*	24.13	23.00	22.47	23.36	24.04	21.00	21.44	21.79	23.24	24.38
No judge	*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	*M*	14.34	15.83	17.33	18.45	19.42	13.25	14.89	16.66	16.97	16.55
No reactivity	*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	*M*	11.59	12.21	12.48	12.67	13.17	10.25	11.28	11.86	12.07	12.00
Physical	*SD*	2.556	2.665	3.195	3.186	2.714	2.611	2.408	2.661	2.528	2.830
health	**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	*M*	8.12	8.84	9.71	9.89	9.99	7.07	8.23	8.87	9.01	9.16
Psychological	*SD*	2.885	3.015	3.643	3.464	3.504	2.056	2.859	3.024	3.200	3.377
health	**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	*M*	9.71	10.88	11.27	11.33	11.66	9.90	10.60	11.14	11.52	11.52
Social	*SD*	3.334	3.475	3.510	3.346	3.318	3.088	3.338	3.049	3.215	3.273
relationships	**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	*M*	11.92	12.17	12.54	12.73	12.67	11.47	12.03	12.01	12.07	12.26
Environment	*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 5. 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

3.3 Linear Mixed Models

Best fitting models in the intention-to-treat sample are described in **Table 5**; coefficients for fixed effects and estimate of variance of random parameters are listed.

With regard to primary outcome measures, in the intention-to-treat sample the number of suicide attempts decreased, $F_{(1, 81.316)} = 10.36$, $p < .005$; treatment condition was not significant, $F_{(1, 80.504)} = 2.01$, $p = .16$, nor was Time*Treatment interaction, $F_{(1, 81.586)} = 1.378$, $p = .244$. The variance of random effects was different from zero, ps < .001; the covariance between random components was negative and significant, $cov_{(2,1)} = -0.15$, $SE = 0.032$, $p < .001$. Adding random components improved the model's fit, $\chi^2_{(3)} = 110.728$, $p < .001$.

For SHI Direct self-harm, subjects changed over time, $F_{(1, 80.219)} = 34.618$, $p < .001$, the variance of random effects was significant, ps < .001, and the covariance between random effects was negative and slightly significant, $cov_{(2,1)} = -1.12$, $SE = 0.061$, $p < .05$. Adding random effects improved the model's fit, $\chi^2_{(3)} = 202.859$, $p < .001$.

SHI Indirect self-harm reduced, $F_{(1, 80.847)} = 36.44$, $p < .001$, the variance of random effects was significant, $ps < .001$, and 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 the same trends were found for primary outcome measures; however, for indirect self-harm, results didn't support a model with random slopes.

Examining DERS total score, in the intention-to-treat sample a main effect was found for time, $F_{(1, 90.029)} = 21.884$, $p < .001$, and the variance of random effects was different from zero, ps < .001. Adding random effects improved the fit of the model, $\chi^2_{(3)} = 247.62$, $p < .001$. In the completers' subsample, the same trend was found; furthermore, a main effect of treatment program emerged, since subjects who completed GET gained better improvement over DBT, $F_{(1, 48.423)} = 5.212$, $p < .05$, even if the interaction Time*Treatment was not significant, $F_{(1, 48.008)} = 0.071$, $p = .792$.

Considering DERS subscales, in the intention-to-treat sample, results were homogeneous for all them, with the main effect of time, ps < .005, random intercepts, ps < .001, and random slopes, ps < .001. In the completers' subsample a reduction over time was confirmed for all facets, ps < .005, and also random intercepts, ps < .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, $s^2 = 0.2$, $SE = 0.063$, $p = .001$, Non acceptance, $s^2 = 0.23$, $SE = 0.092$, $p < .05$, Awareness, $s^2 = 0.1$, $SE = 0.043$, $p < .05$, and Clarity, $s^2 = 0.31$, $SE = 0.134$, $p < .05$.

Results indicated that BIS-11 Total scores showed a reduction over time, $F_{(1, 85.603)} = 13.062$, $p = .001$; the variance of random components was significant, ps < .001. Adding both random intercepts and random slopes increased model's fit, $\chi^2_{(3)} = 190.998$, $p < .001$. For completers there were the same trends.

With regard to mindfulness dimensions in the intention-to-treat sample, FFMQ Observe and FFMQ No judge didn't change over time, respectively $F_{(1, 69.907)} = 3.156$, $p = .08$, and $F_{(1, 77.778)} = 0.752$, $p = .389$. Also the effect of treatment group was nonsignificant, respectively, $F_{(1, 71.497)} = 3.373$, $p = .07$, and $F_{(1, 72.689)} = 3.79$, $p = .055$. In the completers' subsample data confirmed such trends.

For FFMQ Describe, considering only fixed factors, in the intention-to-treat sample there were no significant main effects. However, adding random effects, the model became more sensitive and an improvement over time was found, $F_{(1,\ 68.803)} = 8.67$, $p < .005$; random effects were significant, ps < .05, and they improved model's fit, $\chi^2_{(3)} = 346.684$, $p < .001$. In the completers' subsample a main effect of time, $F_{(1,\ 140.534)} = 11.106$, $p = .001$, and 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 main effects of time, $F_{(1,\ 69.662)} = 5.728$, $p < .05$, no differences between groups, $F_{(1,\ 69.662)} = 5.728$, $p = .019$, and random effects, ps < .005. Random effects improved model's fit, $\chi^2_{(3)} = 205.502$, $p < .001$. In the completers' subsample there were 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, $s^2 = 12.71$, $SE = 4.05$, $p < .005$.

For FFMQ No Reactivity in the full sample the main effect of time, $F_{(1,\ 70.582)} = 23.336$, $p < .001$, and random components, ps < .001, were significant. Results suggested to considered random effects, $\chi^2_{(3)} = 206.81$, $p < .001$. For completers there were a 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 in the intention-to-treat sample: Physical Health, $F_{(1,\ 68.522)} = 10.588$, $p < .005$, Psychological Health, $F_{(1,\ 68.338)} = 18.015$, $p < .001$, Social relationship, $F_{(1,\ 68.292)} = 12.317$, $p < .005$, and Environment, $F_{(1,\ 276.258)} = 11.044$, $p < .005$. The same trends emerged for completers. 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, in either sample. Both the intention-to-treat sample and in the completers' subsample random intercepts were significant for all dimensions, ps ≤ .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 slopes were significant, ps < .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, $\chi^2_{(1)} = 222.702$, $p < .001$.

4. Discussion

Results showed significant changes in target variables in both treatment programs over one year, supporting the effectiveness of GET and confirming the effectiveness of DBT. 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.

HLM allowed taking 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. Results are in line with the current perspectives on PDs diagnosis, such as the DSM-5 alternative model (APA, 2013), which suggest focusing on psychological functioning as defined by personality traits. Subsequent research should assess which individual factors could account for different change trajectories on primary and secondary treatment targets.

A main target of both treatment programs is replacing dysfunctional coping strategies, such as suicide attempts and self-harmful behaviors, with more effective skills. Direct self-harm reduced in both groups, also for subjects who did not complete their treatment programs. Along with structured treatments of BPD (Barnicot et al., 2012; Stoffers et al., 2012), our results confirmed that over one year both GET and DBT 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 BPD symptomatology (Cavicchioli et al., 2015) and also to suicidal ideation (Shorey et al., 2016). The effects of mindfulness practice cover a wide range of dimensions: cognitive control, bodily awareness, emotional reactivity, reappraisal, nonjudgmentalness (Elices et al., 2016; Feliu-Soler et al., 2014; Hölzel et al., 2011; Tsur, Berkovitz, & Ginzburg, 2016)

Accordingly, both DBT (Linehan, 2014) and GET (Visintini et al., 2019) 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 reactivity), and the ability to put subjective experiences in words (FFMQ Describe). This, in conjunction with specific skills or group activities, could also explain 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 (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 longer, constant, 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.

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 (Dryden & Still, 2006; Linehan, 2014): in fact, FFMQ Observe and FFMQ No judge didn't show significant changes over one year in either sample.

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 GET and DBT, the ability to interrupt impulsive behaviors. In GET specific group activities are devoted to crisis management and to cope ahead with difficult situations, while 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 cross-situational behavior.

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 practice of skillful behaviors proved to reduce emotionally-related problematic behaviors (Barnicot, Gonzalez, McCabe, & Priebe, 2016; Neacsiu et al., 2010), probably for a decrease in experiential avoidance (Neacsiu et al., 2014). The denser practice in GET could account for the better management of the impulsivity due to emotion dysregulation (DERS Impulse, DERS Strategies, DERS Goals) 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) and to overreact with maladaptive impulsive reactions to interpersonal stressors (Berenson et al., 2016; 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 (Andión et al., 2012), it's a way to expose BPD patients to social cues, modulate rejection sensitivity and reduce secondary emotions, such as shame and guilt, (Berenson et al., 2016) – i.e., DERS Non acceptance, which got reduced significantly higher in GET than in DBT for completers.

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 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.

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 (American Psychiatric Association, 2001) agree on suggesting psychotherapy as first choice for the treatment and management of all PDs, in particular for BPD, more specific recommendations are needed for the cost-effectiveness aspects (for a review, see Soeteman & Kim, 2013). 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.

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. Furthermore, the clinical heterogeneity within the sample (i.e., the presence of different diagnoses of Personality Disorders) could influence the effectiveness of the treatments. Subsequent studies should examine whether and how Axis II diagnoses increase or weaken the effectiveness of GET and DBT.

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 analyses 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, and 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 analyses could model group trajectories or examining time lagged relations between variables (considering separately treatment programs or subtyping patients by relevant psychological dimensions) to identify patterns of treatment response.

Despite these limitations, the current study is the first empirical investigation of the effectiveness of GET for outpatients with BPD features. Results demonstrated that GET reached satisfactory outcomes on target variables over one year, even compared with another structured and effective treatment, such as DBT. 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, due to specific theoretical and clinical routes. 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. 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.

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