The relationship between DBT family training and perceived criticism: a pre-post study

Hanneke van Leeuwen (✉ jpavanleeuwen@gmail.com)

Vincent van Gogh Institute for Psychiatry <https://orcid.org/0000-0003-2977-5902>

Wies van den Bosch

Synthis consultancy, Dialexis Advies

Lindsey Ossewaarde

Vincent van Gogh Institute for Psychiatry

Jos Egger

Vincent van Gogh Institute for Psychiatry, Radboud University, Stevig

Research article

Keywords: Emotion dysregulation, Dialectical Behaviour Therapy, Personality, Family Functioning, Perceived criticism

Posted Date: August 2nd, 2020

DOI: <https://doi.org/10.21203/rs.3.rs-50515/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License.
[Read Full License](#)

Abstract

Background: Dysregulating emotional and behavioural phenomena of patients with Borderline Personality Disorder (BPD), such as repeated non-suicidal self-injury, are strongly affecting patients' family members or partners. In addition, critical disapproval of this emotional and behavioural phenomena by family members and reconciling understanding, affects the patients' sensitivity for rejection. As a result, individuals with BPD appear to have less satisfying social support. This negative spiral possibly elicits further challenging behaviour. Therapy programs for BPD might therefore benefit from the inclusion of family members or partners in the treatment. One of the programs that includes family members is the network training of Dialectical Behaviour Therapy (DBT). This study examines the impact of the DBT network training on the perceived criticism of both patients and network members.

Method: This study follows a pre-post design where a DBT network training is given to 33 patients (mean age 25 years) and 61 relatives during 8 group sessions. The degree of perceived criticism is measured by using a self-report questionnaire.

Results: Results show that the overall scores of the perceived criticism scale decrease significantly for both patients and relatives after following the DBT network training. More specific, item scores of both patients and relatives concerning how critical they looked towards the other and how critical they thought the other looked at them also decreased significantly after following the DBT network training.

Conclusion: Findings suggest that a DBT network training may be instrumental in decreasing levels of perceived criticism. Further research may focus on the putative mechanisms of behaviour such as improved perspective taking, behavioural change, and the evaluation of social cues.

Background

One of the most prevalent examples of emotion dysregulation disorders is Borderline Personality Disorder (BPD), defined as "a pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity that begins in early adulthood and is present in a variety of contexts" (p. 456). (1) Apart from emotion dysregulation, the disorder is characterized by e.g., impulsive aggression, repeated non-suicidal self-injury (NSSI) and chronic suicidal tendencies (2). BPD has the highest rates of utilization of psychosocial services. (3-5) In the Netherlands, the number of patients with a diagnosis of BPD is estimated at 1 to 2% of the population. (6)

Dialectical Behaviour Therapy (DBT) is a treatment program for individuals with BPD that was developed by Marsha Linehan. (7, 8) Standard DBT consists of weekly skills training, weekly individual therapy, telephone consultation between sessions if needed and team consultation for therapists. A meta-analysis by Stoffers et. al. shows that DBT for BPD is especially helpful in the improvement of general functioning and reducing inappropriate anger and NSSI. (9) The DBT model understands the disruption of the emotional regulation as the result of a transaction between emotional vulnerabilities (the biological component) and the invalidating environment (the social component). It thus considers chronic and

pervasive emotion dysregulation to lead to disruption of someone's emotional life in all areas: identity, behaviour, cognition and interpersonal.

An invalidating environment is one which lacks acknowledgement of the experiences or expressions of emotions from an individual. As a response to a child that's crying, an invalidating environment could say 'why are you crying? There is no reason for crying. Just act normal', and then soothe the child when it throws a tantrum. Or answering to a child who says being thirsty they could say 'you're not thirsty, you just have had a drink'. Expressed emotions, especially emotions linked to pain and suffering, are punished by the invalidating environment by judging the emotion as inappropriate or neglect the emotion until the reaction is seen as disproportional and then responds, thereby reinforcing extreme emotional or behavioural reactions. The invalidating environment contributes to emotion dysregulation because it does not teach the individual how to recognize, label and regulate their emotions. Nor does it teach the individual how to tolerate frustrations. On the contrary, the individual learns to self-invalidate her or his own experiences and emotions. (7, 8)

On the other hand, we know how difficult it can be for the environment to respond in an appropriate way to an individual with biological vulnerabilities like a high negative affect, high reactivity and lowered inhibition to stimuli. If you are not equally sensitive, it is difficult to understand the reaction of each other. Family members or partners of people with BPD are directly affected by dysregulating emotional and behavioural phenomena, including repeated (non-suicidal) self-injuries (NSSI). They experience severe impact from the patient's problem behaviour and are concurrently most likely the ones who affect the patient. (10)

Research shows that invalidating responses lead to significant changes in heart rate, skin conductance and negative affect. (11) To reduce this autonomous bottom up emotional reactivity, (12) studies show that self-destructive behaviour is helpful to reduce this, (13) but unfortunately leads to misunderstanding, rejection, or invalidation in the environment. Also, individuals with BPD are more likely to evaluate social cues in a negative way and notice criticism or rejection where others would not. Research from Domsalla et al. (14) shows in a simulated computer game that participants with BPD reported a more intense feeling of rejection when being rejected but also reported a more intense feeling of rejection while having the same neutral interaction as others. Being prone to feeling rejected or suspected criticism can lead to avoidance of social relationships and in the end to feelings of abandonment. This causes a negative spiral of emotions and reactions where disruption of interpersonal contact in turn leads to increased reactivity to social stressors in patients with BPD, and due to higher rates of perceived criticism, to a stronger chance of relapse after treatment. (15) As a result, individuals with BPD appear to have less satisfying social interaction and receive less support when they try to cope with their distress, causing further impairment of their emotion regulation abilities. (16)

To reduce the tendency to evaluate social cues in a negative way, to minimise drop out and relapse rates for patients and maximise generalisation of new skills, therapy programs have been developed in the last twenty-five years. More recently there is a growing tendency to include family members or partners in the

treatment of BPD individuals to increase the degree of generalization of the therapy and enhance social support. One of these therapy programs is the family network training of DBT. (17) In this training patients and network are trained together.

Until now few studies have focused on the effect of standard DBT - including a network module - on the transaction between individuals with BPD and their network members. What we do know is that residential DBT has an influence on change in attachment style of BPD patients, (18) but as far as we know, this is the first study to investigate the possible impact of a DBT family training with patients and network members on perceived criticism towards each other. In this study, the DBT network training was added to the standard DBT program. The network training was given every other week and uses the standard DBT skills training as framework. Family members, partners and other important relatives or friends of patients diagnosed with BPD received the DBT network training. The training consisted of eight sessions in which patients together with family and friends, guided by the skills manual, (8) learned to understand the theory of DBT and learned to apply the skills together.

To assess changes in interpersonal judgment we measured perceived criticism before and after family network training. It was hypothesized that after following the DBT network training patients and their family would be less critical towards each other.

Method

Participants

This study comprises 33 female patients aged 17-50 ($M=25.3$ years, $SD=8.6$) who all participated in a step-down DBT program at Jelgersma Center for Personality Disorders, based on Linehan's protocol (19) which consisted of 3 months residential DBT plus 6 months of outpatient DBT. (20) Originally the group of patients consisted of 36, but three patients dropped out.

All patients met the criteria for Borderline Personality Disorder according to the Dutch version of the Structured Clinical Interview for DSM-IV Axis II personality disorders (SCID-II) (21, 22) and showed a severe level of borderline symptomatology (> 24 on the Borderline Severity Index; BPDSI) (23) with parasuicidal behaviour present in the last month preceding the start of residential DBT. Other inclusion criteria were adequate understanding of the Dutch language and living within travelling distance from Leiden. Exclusion criteria were an $IQ < 80$, a chronic psychotic condition, bipolar disorder, drug abuse that requires inpatient detoxification, forced treatment framework, and DBT treatment in the year preceding intake.

The network training was considered part of the residential DBT program, but in the event of a network that could not or did not want to cooperate the patient could continue the residential DBT program. Patients were informed about the residential program through an extensive script, they were asked to read the script and there was an appointment where they could ask questions about it. Then they were asked to fill in an informed consent about the program, about permission to make video recordings of sessions

and where they gave permission to evaluate the effectiveness of the program. In conclusion they were informed about the fact that all information would be processed anonymously. Patients could bring family members, partners, friends or other persons of importance to them to the DBT network training. All 33 patients followed the DBT network training, 31 of them together with their network. The network group consisted of 61 people: mothers (N=21), fathers (N=16), partners (N=11), sisters (N=6) and friends (N=7). All patients and network members were asked to sign a written informed consent about the use of the data for scientific purposes.

Measures

The perceived criticism (PC) scale (15) reflects how critical an individual is towards his or her environment and how critical someone experiences their environment to him or her. Two questions are asked: 'how critical are you of your relative?' and 'how critical is your relative of you?'. The scale is a 10-point Likert scale from not at all critical to very critical indeed. Patients filled in the PC scale that refers to the family member(s), partner or other important relative they brought with them to the DBT network training. Network members who came with a patient to the DBT network training filled in the PC scale that refers to the patient. The scales were filled in at the end of the first session and again at the end of the last one, after 16 weeks.

Intervention

The DBT network training consisted of 8 sessions of two hours (break included), every other week. This network training was based on the network training of Hoffman, Fruzzetti & Swenson. (18) The meetings were always planned in the beginning of the evening to give network members with jobs the opportunity to participate without having to take leave. The DBT network training was led by experienced skills trainers from the DBT team who received supervision on a regular basis by the second author, who is a certified DBT clinician.

The first two meetings of the training consisted of psycho-education (information about the treatment program of dialectical behaviour therapy and about Borderline Personality Disorder), followed by the commitment question i.e. whether the participants were willing (and able) to participate in all sessions of the skills training part of the training. The content of the next six meetings was structured as follows: the start of the session consisted of a mindfulness exercise given by one of the trainers, followed by an overview of the content of that session and last week's theory was summarized. This summary was followed by discussing the homework assignments by patients and their relatives and after a short intermission finally new theory was discussed and practiced (including role plays in the group). The theory of the third, fourth, fifth and sixth meetings was respectively mindfulness, interpersonal effectiveness, emotion regulation and distress tolerance. The last two meetings of the training consisted

of evaluating all the DBT skills previously discussed. At the end of the last meeting there was an evaluation of how to continue practicing the DBT skills in the future.

Procedure

All patients participated in an intensified adapted DBT program, which consisted of 3 months residential DBT plus 6 months of outpatient DBT. (24) In residential DBT, support staff were present during office hours to help the patients apply DBT skills. Different program parts were added to the standard DBT program like daily mindfulness classes, daily meetings about living together as a group, weekly drama therapy, weekly group sessions on validation skills and chain analyses and every other week the network training was given. Therefore, the network training was also a part of the 3 months residential DBT program. Patients could choose who they wanted to participate with in the DBT network training. In clinical practice, this meant that mothers, fathers, partners, friends and siblings were invited in person by the patients to join the DBT network training with them.

As mentioned before at the end of the second meeting, all participants were asked for commitment to continue training in the skill modules. Commitment not only consisted of participating in the remaining meetings, but also the willingness to practice the skills material and practice homework assignments together (both network member and patient).

At the start of the first network training session everyone was asked to fill in the PC scale. At the end of the last network-training session, everyone was asked again to fill in the PC scale.

Data collection took place during the years that residential DBT was provided by the Jelgersma Centre. In the last part of this period, the study of the effectivity of residential DBT treatment took place (24) but the collection of data of the network training was not included in the study protocol. The scientific commission and the board of GGZ Rivierduinen agreed to support the execution of the data collection.

Statistical analyses

Statistical analyses are performed by SPSS for windows version 22. The impact of the DBT network training is determined by paired sample t-tests. Scores of the perceived criticism scale before and after following the DBT network training were compared. All tests were two-tailed tests and alpha was set at .05. To determine the size of the effect, Cohen's d is calculated. The formula $d = t/\sqrt{n}$ is used because of the within-subject design. (25)

Results

The results of the paired sample t-tests, as showed in Table 1, were used to identify significant differences between PC scale score before and after following the DBT network training. First, we examined whether the DBT network training led to change in the overall PC scale rates.

	Pre Training (T0)	Post Training (T1)	Outcomes			
	M (Sd)	M (Sd)	T	Df	P	Cohen's d
<i>Total scores PC scale</i>						
PC Patient (N33)	6.91 (1.84)	5.01 (1.47)	7.90	32	0.00	1.38
PC Relative (N61)	6.54 (1.40)	4.89 (0.99)	7.57	30	0.00	1.36

Table 1 Pre and post scores concerning the DBT network training of the perceived criticism scale (PC), total scores.

The perceived criticism scores of both patients and network members were significant higher before the DBT network training than after the training with a large effect (Figure 1).

Next, we examined whether the DBT network training led to changes in scores of the two separate items of the PC scale, because these differentiate between how critical they looked towards the other and how critical they thought the other looked at them (Table 2). The difference in scores of patients and their relatives concerning how critical they think the other is towards them, decreased significantly after following the DBT network training, with a large effect. The difference in the scores of patients and their relatives concerning how critical they are towards the other, also decreased significantly after following the DBT network training, with a large effect.

Table 2 Pre and post scores concerning the DBT network training of the perceived criticism (PC) scale: subscales.

	Pre Training (T0)	Post Training (T1)	Outcomes			
	M (Sd)	M (Sd)	T	Df	P	Cohen's d
<i>Item: 'How critical do you think your relative is towards you?'</i>						
PC Patient (N33)	7.48 (1.69)	5.27 (1.49)	7.16	32	0.00	1.25
PC Relative (N61)	6.91 (2.19)	5.30 (1.60)	6.21	30	0.00	1.12
<i>Item: 'how critical do you think you are towards your relative?'</i>						
PC Patient (N=33)	6.34 (2.39)	4.75 (1.92)	5.76	32	0.00	1.00
PC Relative (N=61)	6.16 (1.43)	4.48 (0.96)	5.77	30	0.00	1.04

Discussion

To our knowledge, this is the first study to examine the impact of a DBT network training on perceived criticism of patients and family members, partners and other important relatives towards each other. As hypothesized, we found that the overall scores of the perceived criticism scale decreased significantly for both patients and relatives after following the DBT network training. Given the large effect sizes, this may be considered a highly relevant finding, although the specific mechanisms underlying the indicated change remain unclarified as yet.

It can be argued that the results cannot be explained by an interactional change. Relatives and members of the network might take advantage of the fact that they are trained in the DBT skills. Research shows that it is common to find psychiatric disorders in relatives of individuals with BPD. Most common disorders are primarily characterized by negative affect like depression, anxiety and trauma related disorders and difficulties in impulse control like substance abuse. (26) It is possible that such disorders were present during the DBT network training. The results then would indicate that through the training the network members learn how to react better to the patient but also how to cope with and manage their own distress. This might explain why the positive results on the PC scale were also found by the relatives of people with BPD.

A more cognitively based explanation for the results could be that a change in perspective taking takes place. Change in perspective taking means the ability to see the world from your own or from others perspective. (27) Perspective taking is an important feature of social cognition and interpersonal communication. (28) The meta-analysis of Berkhout and Malouff (29) shows that we can train

perspective taking consisting of cognitive, behavioural and affective elements to help develop the understanding of (other peoples) feelings, react accurately to the feelings of others and feel the same emotions that someone else is feeling. The decrease in perceived criticism could point out that the network training results in changing emotion regulation processes and subsequently in creating the possibility of a less critical and more realistic stance for both patients and network members. Unfortunately, we have no data on the emotion regulation processes because the data of the efficacy study (24) could not be used. The change in perspective taking can be influenced directly by role playing during the DBT network training. It gives the patients the opportunity to feel validated because they are ahead of their families in that they already know some of the skills applied. Patients and family members are asked to take each other's perspective in a role play. On this way, they can experience and feel how certain (difficult) interpersonal situations that can arise in normal life can be for the other. During the role play trainers (and participants) also can help by shaping new (emotional) reactions for both patients and family members. Besides directly influencing perspective taking, analysing situations together and talking about different ways to react or respond to each other for sixteen weeks could also change the perspective by reconciliation and finding a new way to connect with each other. Perspective taking is one of the core elements of DBT and mentalization. Mentalizing includes the interpretation of your own or others behaviour based on mental states of thoughts, believes, desires or feelings. (30) Montgomery-Graham (31) shows that DBT enhances the perspective taking skills by making automatic or indirect thoughts, feelings and behaviour more explicit, for example through the process of chain analysis. When mentalization is more explicit, helped by interpersonal skills learned in DBT, people can better influence their behaviour instead of being led by impulsive, automatic responses.

From a behavioural framework it can be hypothesized that attending to a skill training and doing homework assignments together leads to changes in (interpersonal) behaviour and thus changes the interaction between patients and family members. Also, patients and relatives learn and train new behaviour and social skills in the training session. This is a form of active learning. (32) We know that active learning is superior to passive learning (33) when it comes to learning new skills. According to the research of Holsbrink-Engels (34) role plays are most common to practice the development of interpersonal skills. This way individuals not only learn theoretical new skills, but also practice new behaviour directly in the group through role play. Moreover, patients and relatives were motivated to plan homework sessions between two training meetings. In this way they trained a lot of interpersonal and emotion regulation skills by planning, spending time together and carrying out the homework assignments together. Also, because the homework was discussed in the following meeting, feedback and encouragements of other families/networks could reinforce their interactions and behaviour change. Spending time together with important relatives and receiving support might also contribute to positive long-term effects for patients with BPD. Research from Hooley and Hoffman (35) showed that higher emotional involvement from family/network members leads to better longitudinal results in patients with BPD.

Behavioural change may redirect the circle of invalidation by learning new interpersonal skills for both patients and network members. (36) This supports the notion that BPD is a transactional, systemic disorder in which all parts of the system influence each other. Furthermore, support for the behavioural

change comes from observations made during the DBT network training. Patients and network members show changed behaviour towards each other. The following quote of a father who participated in the DBT network training with his daughter can be seen as an example. During the last session of the training father said:

"I never realised till this training that I was judging you. Whenever I was trying to reach out a hand to help you, I thought you refused to take it because you blamed me for your problems. And I got mad at you. Now I see that you couldn't see my hand because of your regulation problems. And my own."

A strength of this study is the fact that this study has been conducted in clinical practice. This kind of research gives a representation of effects and achieved results without all kind of preconditions.

The present study is limited in several ways. First of all, we missed control measures by a lack of a control group. Although the effect sizes are big, results have to be interpreted with caution. The DBT network training was a training added to the standard DBT program, so we don't know if the results are specifically attributed to the DBT network training or to the fact that patients were in psychological treatment in general. Secondly, the residential DBT program was a supra-regional program. This could have influenced the external validity of this study because of the high level of expertise in this clinic and the fact that all attendees needed to be highly motivated to participate in the program since they came from all over the country. It should be noted that patients and their network members had the opportunity to refuse future participation at any time without consequences for the treatment. However, there were no refusals. Next, all participants were referred to the treatment centre because of a high burden of illness, seen as untreatable by the referring hospitals. Results from this group might therefore differentially apply to patients with a lower illness burden. A further limitation is that attachment style of patients and network members could not be systematically assessed. Oostendorp and Chakhssi (18) showed that attachment style and change in attachment style of BPD patients can be a predictor of psychological functioning. The possible influence of attachment style of patient and network members and how this might influence the degree of change in the context of perceived criticism could be the focus of future research.

Conclusion

If we take up the gauntlet of Kirtley and colleagues (37) in which they asked to address the concept of criticism in designated interventions because caretakers of individuals with BPD experience higher levels of burden and criticism than other caretakers, we can on the hand of our present findings conclude that adding a network training (of 8 sessions duration) to a standard DBT program seems to be feasible. We found that the application of the DBT network training in the context of a DBT program resulted in a significant decrease in scores on the perceived criticism scale. This study contributes to our knowledge of the relationship between the DBT network training for patients and social network and perceived criticism. The results seem to support the biosocial theory of DBT where the importance of the transaction between an individual and the invalidating environment is emphasized. However, a multitude

of mechanisms might play a role in the changes found. Whether adding a network training enhances the efficacy of a DBT program concerning the BPD problems of patient stays unanswered. Therefore, further research is needed to understand the relationship between DBT treatment, the application of the DBT network training and perceived criticism.

Abbreviations

BPD: Borderline Personality Disorder; DBT: Dialectical Behaviour Therapy; DSM: Diagnostic and Statistical Manual of Mental Disorders; NSSI: Non Suicidal Self Injury; SCID-II: Structured Clinical Interview for DSM-IV Axis II personality Disorders; BPDSI: Borderline Severity Index; PC: Perceived Criticism.

Declarations

Acknowledgements

We would like to thank all the participants, both clients and their network members for participation. We also want to thank Lisa Davies for the feedback on the final version of the manuscript.

Ethics approval and consent to participate

This study was approved by the scientific commission and the board of GGZ Rivierduinen. All participants gave written informed consent to the second author, at that time supervising clinical psychologist at the GGZ Rivierduinen institute.

Consent for publication

Written informed consent was obtained from the participants for publication of their individual details in this manuscript.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

HvL is shareholder of Dialexis, the training institute for Dialectical Behaviour Therapy (DBT) in the Netherlands. WvdB works for Dialexis as an instructor. The authors declare that they have no competing interests.

Funding

GGZ Rivierduinen provided financial support to collect the data. Our project did not receive any other specific grants from funding agencies in the public, commercial, or non-profit sectors.

Authors' contributions

HvL and WvdB designed the study. WvdB was responsible for the datacollection at GGZ Rivierduinen by the DBT network trainers. HvL analysed and interpreted the data. HvL and WvdB drafted the manuscript. LO and JE supervised the project and critically reviewed the manuscript for important intellectual content. All authors provided final approval for the manuscript in its current form.

References

1. Association AP. Diagnostic and statistical manual of mental disorders (DSM-5®): American Psychiatric Pub; 2013.
2. van den Bosch LMC. Borderline personality disorder, substance abuse, and dialectical behavior therapy: Swets & Zeitlinger Lisse; 2003.
3. Bender DS, Dolan RT, Skodol AE, Sanislow CA, Dyck IR, McGlashan TH, et al. Treatment utilization by patients with personality disorders. 2001;158(2):295-302.
4. Soeteman DI, Roijen LH-v, Verheul R, Busschbach JJJJoCP. The economic burden of personality disorders in mental health care. 2008;69(2):259.
5. Sansone RA, Farukhi S, Wiederman MWJGHP. Utilization of primary care physicians in borderline personality. 2011;33(4):343-6.
6. ten Have M, Verheul R, Kaasenbrood A, van Dorsselaer S, Tuithof M, Kleinjan M, et al. Prevalence rates of borderline personality disorder symptoms: a study based on the Netherlands Mental Health Survey and Incidence Study-2. 2016;16(1):249.
7. Linehan MM. Skills training manual for treating borderline personality disorder: Guilford Press; 1993.
8. Linehan M. Dialectical behavior therapy skills training manual. New York: The Guilford Press; 2015.
9. Stoffers-Winterling JM, Völlm BA, Rücker G, Timmer A, Huband N, Lieb KJCDoS. Psychological therapies for people with borderline personality disorder. 2012(8).
10. Hoffman PD, Fruzzetti AE, Buteau EJJoMH. Understanding and engaging families: An education, skills and support program for relatives impacted by borderline personality disorder. 2007;16(1):69-82.
11. Shenk CE, Fruzzetti AEJJoS, Psychology C. The impact of validating and invalidating responses on emotional reactivity. 2011;30(2):163-83.
12. Ochsner KN, Ray RR, Hughes B, McRae K, Cooper JC, Weber J, et al. Bottom-up and top-down processes in emotion generation: common and distinct neural mechanisms. 2009;20(11):1322-31.
13. Reitz S, Kluetsch R, Niedtfeld I, Knorz T, Lis S, Paret C, et al. Incision and stress regulation in borderline personality disorder: neurobiological mechanisms of self-injurious behaviour. 2015;207(2):165-72.

14. Domsalla M, Koppe G, Niedtfeld I, Vollstädt-Klein S, Schmahl C, Bohus M, et al. Cerebral processing of social rejection in patients with borderline personality disorder. 2014;9(11):1789-97.
15. Hooley JM, Teasdale JD, Joop. Predictors of relapse in unipolar depressives: Expressed emotion, marital distress, and perceived criticism. 1989;98(3):229.
16. Hughes AE, Crowell SE, Uyeji L, Coan JAJ, Joacp. A developmental neuroscience of borderline pathology: Emotion dysregulation and social baseline theory. 2012;40(1):21-33.
17. Hoffman PD, Fruzzetti A, Swenson CJ, Fp. Dialectical Behavior Therapy-Family Skills Training. 1999;38(4):399-414.
18. Oostendorp J, Chakhssi F, J, Tvp. Inpatient dialectical behaviour therapy for borderline personality disorder: effect on symptoms, coping, attachment and quality of life. 2017;59(12):750-8.
19. Linehan MM, Thijssen T. Dialectische gedragstherapie bij borderline persoonlijkheidsstoornis: theorie en behandeling: Swets & Zeitlinger; 2002.
20. van den Bosch LM, Sinnaeve R, Hakkaart-van Roijen L, van Furth EF, J, T. Efficacy and cost-effectiveness of an experimental short-term inpatient Dialectical Behavior Therapy (DBT) program: study protocol for a randomized controlled trial. 2014;15(1):152.
21. First M, Spitzer R, Gibbon M, Williams J, Benjamin L, J, N, Y, B, R, D, New York State Psychiatric Institute. The Structural Clinical Interview for DSM-IV axis II disorders (SCID-II). 1994.
22. Weertman A, Arntz A, Kerkhofs MJ, L, The Netherlands: Swets Test. Gestructureerd diagnostisch interview voor DSM-IV persoonlijkheidsstoornissen (SCID II)[Structural and Clinical Interview for DSM-IV personality disorders (SCID II)]. 2000.
23. Arntz A, van den Hoorn M, Cornelis J, Verheul R, van den Bosch W, M, C, de Bie A, J, H, T. Reliability and Validity of the Borderline Personality Disorder Severity Index. Journal of Personality Disorders. 2003;17(1):45-59.
24. Sinnaeve R, van den Bosch L, M, C, Hakkaart-van Roijen L, Vansteelandt K. Effectiveness of step-down versus outpatient dialectical behaviour therapy for patients with severe levels of borderline personality disorder: a pragmatic randomized controlled trial. Borderline Personality Disorder and Emotion Dysregulation. 2018;5(1):12.
25. Rosenthal R, J, N, P, CA: Sage. Meta-analytic procedures for social sciences. 1991;10:9781412984997.
26. Ruocco AC, Daros AR, Chang J, Rodrigo AH, Lam J, Ledochowski J, et al. Clinical, personality, and neurodevelopmental phenotypes in borderline personality disorder: a family study. 2019;49(12):2069-80.
27. David N, Bewernick B, H, Cohen M, X, Newen A, Lux S, Fink G, R, et al. Neural representations of self versus other: visual-spatial perspective taking and agency in a virtual ball-tossing game. 2006;18(6):898-910.
28. Hendriks AL, Barnes-Holmes Y, McEnteggart C, De Mey H, R, Janssen G, T, Egger J, I, J, F, i, p. Understanding and remediating social-cognitive dysfunctions in patients with serious mental illness using relational frame theory. 2016;7:143.

29. Teding van Berkhout E, Malouff JMJJocp. The efficacy of empathy training: A meta-analysis of randomized controlled trials. 2016;63(1):32.

30. Allen JG, Fonagy P, Bateman AW. Mentalizing in clinical practice: American Psychiatric Pub; 2008.

31. Montgomery-Graham SJJoCP. DBT and schema therapy for borderline personality disorder: Mentalization as a common factor. 2016;46(1):53-60.

32. Van Ments M. The effective use of role-play: Practical techniques for improving learning: Kogan Page Publishers; 1999.

33. Bell MJEMI. Online role-play: Anonymity, engagement and risk. 2001;38(4):251-60.

34. Holsbrink-Engels GAJBjoet. Using a computer learning environment for initial training in dealing with social-communicative problems. 2001;32(1):53-67.

35. Hooley JM, Hoffman PDJAJop. Expressed emotion and clinical outcome in borderline personality disorder. 1999;156(10):1557-62.

36. Fruzzetti AE, Shenk C, Hoffman PDJD, psychopathology. Family interaction and the development of borderline personality disorder: A transactional model. 2005;17(4):1007-30.

37. Kirtley J, Chiocchi J, Cole J, Sampson MJJopd. Stigma, Emotion Appraisal, and the Family Environment as Predictors of Carer Burden for Relatives of Individuals Who Meet the Diagnostic Criteria for Borderline Personality Disorder. 2019;33(4):497-514.

Figures

Figure 1

Average scores of the total PC scale pre and post DBT network training for patients and their relatives.