



The Effectiveness of Functional Analytical Therapy on Controlling, Expressing and Internalizing Anger in Patients with a Borderline Personality Disorder

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Received: 9 June 2021

Accepted: 30 June 2021

Abstract

Background: Borderline personality disorder affects many cognitive, behavioral, and even emotional domains of individuals. This study aimed to evaluate the effectiveness of functional analytical therapy on controlling, expressing, and internalizing anger in patients with a borderline personality disorder.

Methods: The research method was a quasi-experimental pre-test-post-test with experimental and control groups. The statistical population of this study included all 43 women referred to Asal psychological Clinic in Karaj city in 2020. Out of 33 patients with moderate borderline personality disorder, 24 were selected by simple random sampling method and were randomly assigned to two groups of 12 (experimental and control groups). The functional analytical psychotherapy package of Tsai, Kohlenberg, Kanter & Waltz (2010) was performed on the experimental group in 10 sessions of 45 minutes. For experimental and control groups in pre-test and post-test anger questionnaire of Spielberg (1988) was used. Data were analyzed using analysis of covariance mixed with SPSS18 software.

Results: The results showed that functional analytical therapy has a significant effect on improving controlling, expressing, and internalizing anger in patients with borderline personality disorder ($Pvalue \leq 0.001$).

Conclusions: These results emphasize the level of performance of functional analytical psychotherapy in different areas of cognitive, behavioral, and emotional in the treatment of people with a borderline personality disorder.

Keywords: Functional therapy, Anger, Borderline personality disorder.

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Please cite this paper as: Siroos M, Mirzaian B, Hasanzadeh R. The effectiveness of functional analytical therapy on controlling, expressing and internalizing anger in patients with a borderline personality disorder. Int J Health Stud 2021;7(4):12-16

Introduction

Borderline personality disorder is a heterogeneous mental disorder, and patients with this disorder have problems in most aspects of their lives.¹ The main feature of borderline personality disorder is emotional instability, which includes severe mood swings.² Frequent and intense response to emotional stimuli is a feature of this behavioral pattern, and this emotional vulnerability causes the patient to be emotionally aroused³ and this disorder causes instability behavioral and excitement as well as poor interpersonal communication.⁴ People with borderline personality disorder have difficulty identifying, distinguishing, and integrating their emotions and those of others.⁵ Relationship failure and instability in it is the most basic characteristic of patients with a borderline personality disorder that leads to interpersonal

problems and emotional instability.⁶ Aggressive behavior, which originates from the motivation of anger, means militancy and belligerence, and violent behavior, and is used to describe different emotional states from normal resentment to intense anger.⁷ Anger is one of the most common reactions of people to grievances and failures that is done to hurt others, gain rewards, satisfy needs or remove obstacles.⁸ Defects in cognitive regulation of emotion lead to inappropriate emotional responses such as anger.⁹ Aggressive behavior also has a purpose and purpose is the most important factor in justifying the type of behavior that based on knowing the purpose, we can distinguish between various actions and behaviors¹⁰ and consider them as healthy or aggressive behaviors.¹¹ It is possible to perform two identical actions at the same time with two different goals, one of which is considered healthy behavior and the other is considered aggressive behavior;¹² Therefore, in identifying and conceiving anger and aggressive behavior, the purpose of doing that action should be specified.^{13,14} Regarding the treatment of people with borderline personality disorder, there has been a lot of discussions recently about mindfulness-based and context-based therapeutic interventions, especially for people who are difficult to treat.¹⁵ Functional analytical psychotherapy is one of these therapies, which focuses on accepting beliefs in the face of challenges with them, mindfulness, cognitive failure, or describing thoughts and feelings without giving them personal meaning.¹⁶ On the other hand, functional analytical psychotherapy promotes appropriate behaviors to develop social interaction.^{17,18}

Functional analytical psychotherapy encourages the therapist to identify three categories of clinical behavior that occur during a treatment session; behavioral problems that occur during the session, improvement in behavior or progress in the session, and finally, describing references to functional control variables of his behaviors helps.¹⁹ In this regard, Saghati, Shafiabadi and Sudani showed that group training based on interaction analysis has a significant effect on reducing anger and nervousness.²⁰ Nourizadeh golnkesh, Mehrbizadeh Honarmand and Zargar showed that psychotherapy based on performance analysis reduced the use of emotional strategies and increased the use of positive emotion strategies in the experimental group compared to the control group in the post-test phase.²¹ Reyes-Ortega et al. concluded that functional analytical psychotherapy intervention has a significant effect on improving emotion coping strategies, reducing anger, and developing problem-oriented coping strategies in patients with a borderline personality disorder.¹⁶ Ortega et al. found that functional analytical psychotherapy had

a significant effect on emotion regulation, anger management coping strategies, and thematic relationships in individuals with a borderline personality disorder.²¹ Kanter et al. concluded that functional analytical psychotherapy has a significant effect on improving negative emotion regulation such as anger and the development of coping strategies.²² In general, understanding the components and factors influencing personality disorders and taking a preventive approach helps to reduce trauma and mental illness.²³ Also, understanding the factors affecting personality disorders to some extent leads to determining therapeutic orientation and facilitating the progression of treatment, and in this way used appropriate treatment techniques, also due to the large number of injuries that borderline personality disorder. Affects patients in different areas of life and sometimes requires hospitalization and intensive care such as referral and centralized psychotherapy in the hospital, doubles the attention to modern treatment methods, due to the lack of research in the country in the community of people with borderline personality disorder adds to the importance of this work. Therefore, the question is whether functional analytical psychotherapy affects on controlling, expressing, and internalizing anger in patients with a borderline personality disorder?

Materials and Methods

The research method was quasi-experimental pretest, posttest with an experimental group, and a control group with a follow-up stage. The research methods were semi-experimental: pretest, posttest with an experimental group, and a control group with a quarterly follow-up stage. The statistical population of this study included all 43 women with borderline personality disorder who referred to Asal psychological Clinic in Karaj in 2020. The sample size is estimated according to the population size based on the following equation and the probability of error in measuring 12 people for each group. First, people answered to the borderline personality questionnaire of Rawlings et al. (2001). A total of 33 patients had moderate borderline personality disorder. Then, 24 of these people were randomly selected. They were randomly replaced in two groups of 12 people (12 people in the experimental group) (12 people in the control group).

$$n = \frac{2\sigma^2(z_{1-\frac{\alpha}{2}} + z_{1-\beta})^2}{d^2} = \frac{2(1.50)^2(1.96 + 1.62)^2}{5.665} = 10.18$$

Inclusion criteria include borderline personality disorder at the discretion of the center psychiatrist, age 20 to 35 years, female gender, married, unemployed, minimum literacy, at least 2 to 6 months from the date of diagnosis of the disorder, no Receive any effective psychological or pharmacological treatment, lack of association with other disorders such as depression, substance use and self-destructive behaviors such as self-harm, and moderate severity disorder at the discretion of the center psychiatrist based on the diagnostic and statistical manual of mental disorders.⁵

Exclusion criteria include incomplete completion of questionnaires, doubts about having any of the inclusion criteria during the intervention, dissatisfaction at any stage of the intervention, use of sedatives or hypnotics (Triazolam, Buspirone, Diazepam, Temazepam), the occurrence of

concomitant psychological disorders such as epilepsy, and referral to a physician or psychologist.

In the field, licenses were received from the Islamic Azad university, Sari Branch, and the confirmation of the code of ethics in research was registered in the research ethics committee under the number IR.IAU.SARI.REC.1399.114. Then, Asal psychiatric disorders treatment center was considered in Karaj city. This center, according to its scope of duty in the treatment of disorders and acute psychological disorders, a sufficient number of samples to conduct the present study it had. Then, referring to this center, therapeutic sessions were performed by a doctor of psychology on the subjects in the experimental group with a sequence of two weekly sessions in the morning from 10 am in the summer of 2021. To perform functional analytical psychotherapy in the present study, the guidebook of functional analytical psychotherapy Tsai et al.²⁴ was used in 10 sessions of 45 minutes on the experimental group and for the control group in this study, facial interventions did not, but after the study was completed by Asal center for cognitive-behavioral therapies, dialectical behavior therapy and neurofeedback were used. Commitment to participate in the research and demographic characteristics of age were received from individuals, then according to the questionnaires and pre-test self-report was obtained from the experimental group and the control group, and at the end of the sessions, post-test was taken from both groups. It was also followed up after three months.

The outburst and anger questionnaire was developed by Spielberg²⁵ and the subscales included: 1) anger output: Articles 27, 31, 35, 39, 43, 47, 51, and 55. 2) anger intrusion: Articles 29, 33, 37, 41, 45, 49, 53, and 57. 3) anger ejection control: Articles 26, 30, 34, 38, 42, 50, 54, and 46. 4) anger intrusion control: Articles 28, 32, 36, 40, 44, 48, 52, and 56. This section is graded on a four-point scale from "almost never=1" to "always=4". The validity of the structure and content was confirmed by Sandegan, and reliability was reported by Cronbach's alpha method between 0.69 and 0.84. In Iran, the validity of structure and content was confirmed by Khodayari fard, Gholam ali lavasani, Akbari zardkhaneh and Liaqat²⁶ and the reliability of Cronbach's alpha method has been reported between 0.63 and 0.81. In the present study, the reliability of Cronbach's alpha method was obtained between 0.74 and 0.80.

This questionnaire was designed by Rawlings et al.²⁷ with 22 questions. The response range is such that each yes option is given a score and each no option is given a zero score. To get the score for each dimension, add up the total score for the questions related to that dimension. The overall score is between 0 and 22. A score between 0 and 7 is unlikely to be a borderline character. A score between 7 and 15 is average for a person to be a borderline character, a score between 15 to 22 is a high probability for a person to be a borderline character. The validity of the structure and content was confirmed by Sandegan and the reliability of Richardson's Koder method was reported to be 0.81. In Iran, the validity of structure and content was confirmed by Mohammadzadeh et al.²⁸ and the reliability of Richardson's Koder method was reported to be 0.64. (Table 1).

After collecting data, descriptive statistics of mean and standard deviation were used for analysis, and in inferential statistics, the method of analysis of covariance mixed with SPSS18 software was used.

Table 1. Summary of cognitive rehabilitation training sessions

Sessions	Target	Content
1	Introduction and presentation of goals	Familiarity and expression of goals and methods of doing work
2	Therapeutic evaluation	Formulation of treatment, functional evaluation of the individual, presentation of treatment logic, functional assessment of communication problems
3	Investigating cognitive-behavioral levels	Cognition and emotional management, learning to respond appropriately to emotions, mindfulness exercises
4	Teaching effective techniques	Familiarity with clinical target behaviors (robots), empathy with clients and the use of the pronoun "we" and explaining mutual effort, allowing clients and talking about problems and their daily life
5	Investigate target behavior	Monitoring clinical target behaviors and self-disclosure
6	Behavioral and cognitive adjustment	Calling out clinical target behaviors (these goals will be pursued until the end of treatment)
7	Provide reinforcements and techniques	Strengthening type 2 clinical target behaviors (repetition until the end of treatment), evoking important clinical behaviors of clients in the treatment session and providing natural reinforcement based on the strengthening history and values of the clients
8	Repeat the exercises	Investigating client avoidances, instability management training
9	Generalization training	Training to generalize learning to everyday life, training people to reinforce each other's type two clinical target behaviors
10	Conclusion	Closing treatment, reviewing exercises, final evaluation, planning for long-term goals

Results

According to the results regarding the demographic characteristics of people with borderline personality disorder, most of the subjects in the experimental group are equal to 5 people (41.7%) aged 20 to 25 years, while most of the subjects in the control group are equal to 5 people (41.7%) are between 26 and 30 years old. The t-test showed a significant effect on the test and a total of 6 years. According to table 2, the mean and standard deviation of the subscales of control, ejection, and internalization of anger in the two groups were obtained. In the post-test of control, ejection and internalization of anger, the mean scores of the experimental group are different from the mean scores of the control group.

First, the normal statistical assumptions of the data were confirmed by the Shapiro-Wilkes test and the homogeneity of variance was

confirmed by Machley and Levine sphericity test, then the main test was performed, which according to table 3 is between control, extrinsic and internal subscales. The values obtained from the effect size indicate the effect of functional analytical psychotherapy on outbursts of anger, exhaust control and input control in patients with borderline personality disorder. But there is not significant difference was observed between the two groups in intrusion of anger.

According to table 3, there is a significant difference between the scores of improving control, ejection, and internalization of anger in the pre-test and post-test stages, and pre-test and follow-up. The difference between post-test and follow-up is not significant, which is due to the stability of treatment. The mean comparison shows that the scores of improving anger control, ejection, and internalization in the post-test and follow-up stages compared to the pre-test stage have decreased significantly.

Table 2. Mean and standard deviation of pre-test, post-test and follow-up scores

Variable	Time	Experimental group	Control group
		Mean (standard deviation)	Mean (standard deviation)
Outbursts of anger	Pre-test	20.42(2.81)	19.92(1.83)
	Post-test	16.25(1.96)	19.74(2.12)
	Follow up	16.17(2.23)	19.69(1.95)
Intrusion of anger	Pre-test	18.58(2.31)	18.78(1.42)
	Post-test	16.42(2.39)	18.56(1.24)
	Follow up	16.21(2.31)	18.49(2.40)
Exhaust control	Pre-test	14.75(2.67)	14.20(2.39)
	Post-test	17.11(2.73)	14.38(2.61)
	Follow up	17.24(3.16)	14.42(2.94)
Input control	Pre-test	15.58(1.92)	14.13(2.19)
	Post-test	18.78(2.27)	14.39(1.67)
	Follow up	18.91(2.31)	14.52(1.98)

Table 3. Results from mixed analysis of variance to determine the effectiveness of functional analytical psychotherapy on anger control, ejection and internalization

Variable	Sources change	F	DF 1 and 2	Pvalue	Effect size
Outbursts of anger	group	25.812	1,24	0.001	0.640
	Time	10.734	2,24	0.001	0.528
	Group interaction * Time	48.569	2,24	0.001	0.788
Intrusion of anger	group	4.804	1,24	0.057	0.134
	Time	2.347	2,24	0.086	0.103
	Group interaction * Time	2.768	2,24	0.068	0.115
Exhaust control	group	4.755	1,24	0.041	0.478
	Time	8.022	2,24	0.001	0.567
	Group interaction * Time	11.776	2,24	0.001	0.849
Input control	group	24.314	1,24	0.001	0.725
	Time	27.150	2,24	0.001	0.792
	Group interaction * Time	48.556	2,24	0.001	0.879

Discussion

This study aimed to evaluate the effectiveness of functional analytical psychotherapy on controlling, expressing, and internalizing anger in patients with borderline personality disorder. Findings showed that functional analytical psychotherapy affects on controlling, expressing, and internalizing anger in patients with a borderline personality disorder. These findings are consistent with the results of previous studies. Reyes-Ortega et al. concluded that functional analytical psychotherapy intervention has a significant effect on improving emotion coping strategies, reducing anger, and developing problem-oriented coping strategies in patients with borderline personality disorder.¹⁶ Saghati, Shafiabadi and Sudani showed that group training based on interaction analysis has a significant effect on reducing anger and nervousness.²⁰ Although, the findings of the present study with previous studies have differences in terms of the location of the study, the gender of the people study and even the tools of study. However, the findings of this study are consistent with previous studies in terms of the basis of opinion on the effectiveness of functional analytical therapy.

The main reason for this alignment can be attributed to the theoretical foundations of psychotherapy of functional analysis, which emphasizes the cognitive, behavioral, and emotional dimensions comprehensively, although there are different tools in the two studies. Kanter et al. concluded that functional analytical psychotherapy has a significant effect on improving emotion regulation and the development of coping strategies.¹⁸ Nourizadeh golnesh, Mehrbizadeh honarmand and Zargar showed that psychotherapy based on functional analysis reduced the use of emotional strategies and increased the use of positive emotion strategies.²¹ Ortega et al. found that functional analytical psychotherapy group therapy had a significant effect on emotion regulation, coping strategies, and thematic relationships in individuals with borderline personality disorder.²²

Explaining these findings, it can be stated that in people with borderline personality disorder, due to disturbed attachment in childhood, a kind of cognitive distrust has been created that prevents constructive social interactions.³ Functional analytical psychotherapy focuses on functional analysis and reinforces appropriate clinical behaviors and helps the patient focus on interpersonal relationships.¹⁵ When a person is able to see thoughts only as a thought and emotions only as emotions and does not value or judge them, he focuses to some extent on his cognition and behavior.¹⁸ Functional analysis therapy reinforces appropriate clinical behaviors and helps the patient to focus on interpersonal relationships that are a serious factor in the type of thinking as well as the dysfunctional thought cycle of these patients.²⁴ Functional analytical psychotherapy, based on behavioral principles, claims that the "functional similarity" that exists between one situation and another should be considered rather than physical or physical similarities.²² Unlike diagnostic categories-based psychopathology, the goal of behavioral therapy is not to eliminate inappropriate behavior or its symptoms, but rather to persistent variables, in which case treatment focuses on using therapeutic relationship to strengthen interpersonal skills. Individual rather than using emotion-oriented coping strategies

and avoidance emphasizes the use of problem-oriented method,¹⁶ therefore, the orientation of functional analytical psychotherapy is towards the variables related to change within the psychotherapy process.⁵ Functional analytical psychotherapy considers the relationship between the therapist and the clients very important, so that during the session, the therapist plays the role of the client's people and by recognizing the clinically important behaviors of the clients and motivating them in the session, Shows to references.¹⁴ This increases the clients' communication skills and they can finally use these skills to better strategize the psychosocial stressful situation and generalize their strengthened relationships.²⁹ Functional analytical psychotherapy, using cognitive-behavioral rules, shows them the negative reactions that exist in clients' relationships and helps them to abandon their avoidant and conflicting behaviors. This study was limited to people with a borderline personality disorder, to the female gender, to the age range of 20 to 35 years, and to the 2020 period. Recognizing the effects of psychotherapy on people of all ages and personalities at different times can emphasize the effectiveness of psychotherapy.

This study showed that functional analytical psychotherapy affects on improving control, externalization, and internalization of avoidant anger in patients with a borderline personality disorder. Functional analytical psychotherapy is a method with direct training and cognitive enhancement that helps avoid coping strategies and improve the relationships of people with a borderline personality disorder. The findings of this study can provide practical implications for improving the control, ejection, and internalization of avoidance anger in patients with borderline personality disorder using functional analytical psychotherapy.

Acknowledgement

This article is taken from a part of Ms. Mandana Siroos's doctoral dissertation in psychology at Islamic Azad university, Sari branch. To conduct the research, first while receiving the code of medical ethics from the medical ethics Committee of Islamic Azad university, Sari branch, number: IR.IAU.SARI.REC.1399.114, written consent was obtained. The authors thank the management of the Asal psychological clinic in Karaj and all patients for their cooperation in the research. This research was done with the financial support of Islamic Azad university, Sari branch.

Conflict of Interest

The authors declare that they have no conflict of interest.

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