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The effectiveness of treatment based on acceptance and commitment to psychological flexibility and perfectionism in mothers of children with tic disorders

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Abstract

Introduction: Regarding the prevalence of tic disorders in children and their psychological burden, this study aimed to evaluate the effectiveness of treatment based on acceptance and commitment to psychological flexibility and perfectionism in mothers of children with tic disorders.

Materials and Methods: The statistical population of this study included mothers of children with tic disorder who referred to Ibn-e-Sina Psychiatric Hospital and Astan-e-Mehr Counseling Center in Mashhad city in 2019-2020. Amongst them, 30 mothers were selected through the convenient method of sampling. Then they divided into experimental and control groups randomly. Both groups completed Hills Perfectionism Questionnaire and Acceptance and Action Questionnaire-II. Multivariate analysis of variance (MANOVA) was used to analyze the data.

Results: Commitment and acceptance-based therapy has a significant effect on increasing psychological flexibility (P=0.001), and reducing perfectionism (P=0.000).

Conclusion: It seems that commitment and acceptance-based therapy is an effective method to improve psychological flexibility, and reducing perfectionism in mothers of children with tic disorders.

Keywords: Acceptance, Commitment, Perfectionism, Psychological flexibility, Tic disorders.

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Introduction

Tic disorders are a group of common neurodevelopmental disorders in childhood that they are associated with many challenges in management and treatment (1-4).

According to the 5th Diagnostic and Statistical Manual of Mental Disorders (DSM 5), it can be defined as a sudden, recurring, unbalanced, rapid, and repetitive movement or phoneme (5,6). Tics occur in rounds and can be simple, such as

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blinking, kicking, jaw or neck movements, sniffing, snoring, clearing the throat, and coughing or complicated, such as smiling, touching, shrugging, ugly movements, echo or repetition (7,8). Tic disorder includes four diagnostic categories: tourret disorder, chronic motor or vocal tic disorder, temporary tic disorder, and other specific and uncertain tic disorders that are divided over time based on the type of symptoms, frequency, and pattern of their onset (9). Also, the prevalence of tic disorder is higher in boys than girls (1.06-4.5% in boys and 0.25-1.7% in girls) (10,11). People with tic disorders appear to have higher scores of perfectionism, which is related to criteria and personal organization, compared to the control group (12). Perfectionism plays a very important role in psychological pathology. Many studies have linked perfectionism to anxiety disorders, psychosis, obsessive-compulsive disorder, eating disorders, and other mental health problems. Perfectionism can also be seen as a personality trait associated with psychological pathologies and mental health problems.

Research on personality and individual differences reveal that perfectionism is a multidimensional tendency that it has adaptive and inconsistent aspects.These two factors are due to personal standards and perfectionism due to concern about the judgments of others (13,14).

In the late 1980s, a type of behavioral therapy called Acceptance and Commitment was done by Steven Hayes rooted in behavioral attitudes. Acceptance and commitment therapy supposes that Psychological Flexibility is one of the primary determinants of mental health and behavioral effectiveness. It refers to a type of ability related to the current situation, thoughts, feelings, memories, and psychological feelings. In psychological flexibility, there are no obstacles and avoidance of being in the situation and it fully adapts to the current situation and insists on trying to achieve goals and values, and tries to change its behavior as well. One of the main effects of this attitude, as its name implies, is that in each situation people should have some flexibility toward their actions depending on situations and internal conditions (thoughts, feelings, memories, and psychological feelings) and the likelihood of circumstances that may result in support or punishment.

During this process, people are encouraged to develop more psychological resilience and focus more on their personal values, leading to meaningful activities (15).

This third wave of behaviorism supports the acceptance of psychological events and relates to those areas that can be referred to as conditions and situations that are considered negative and irrational as well as traditional.

The main goal of acceptance-based therapy is for people to behave constructively and correctly in such situations and to try to adapt to the situation simultaneously, and accept these challenging cognitive situations, and the emotions that may follow, not seek alternatives. One of the main features of acceptance-based therapy is the emphasis on behaviors and emotions created simultaneously and independently. Acceptance and commitment-based therapy encourages people to accept these conditions and try to cope in their personal lives with situations that may provoke challenging emotional reactions. It encourages them to be able to identify these situations, control specific environmental situations, and eliminate them (16). One of the most important aspects of commitment and acceptance-based therapy is its realistic philosophical structure, which focuses on psychological behavior and is presented as a realistic context (17).

In this method, it is assumed that many people find their inner feelings, emotions and thoughts annoying and always try to change or get rid of these internal experiences. This effort is ineffective in controlling, and on the contrary, it intensifies the feelings, emotions and thoughts that the person initially tried to prevent. Acceptance and commitment-based therapy is a treatment that involves six specific psychological processes: acceptance, confrontation, self as context, contact with the present moment, values and commitment. All six of these processes are used with metaphors, experimental exercises, and logical conflicts to escape verbal or verbal content and to make more contact with the ongoing flow of experience (18). It should be noted that no research has so far examined the effectiveness of commitment and acceptance-based therapy to the psychological flexibility and perfectionism in mothers of children with tic disorder. According to the above and the research

gap in this field, we aimed to assess the effectiveness of treatment based on acceptance and commitment to psychological flexibility and perfectionism in mothers of children with tic disorders.

Materials and Methods

The statistical population consisted of all mothers of children with tic disorders who were referred to Ibn-e-Sina Psychiatric Hospital in 2019-2020. Inclusion criteria included a net diagnosis of tic disorders in their children, not having comorbid psychiatric disorder, not receiving psychiatric and psychological treatment, educational level equal or more than intermediate education, and willingness to participation. Exclusion criteria included absence of more than one session, having a clinical disorder, receiving psychological and psychiatric interventions, and unwillingness to continue treatment. Based on the formula, 60 mothers were selected through the convenient sampling method. Then divided into two groups of experimental and control group randomly.

Research instrument

A) Hills Perfectionism Questionnaire: This questionnaire was made by Hills et al. in 2004 to evaluate perfectionism with 59 questions. This scale has two general dimensions of positive and negative perfectionism and six subscales, such that the subscales of order and organization, purposefulness, and striving for excellence as positive perfectionism and the subscales of negative self-perception, perception of pressure by Parents and high standards for others are seen as negative perfectionism. The scores on this scale are based on a 5-point score. Hills et al. reported that the internal homogeneity of this questionnaire was reported to be high, ranging from 0.38 to 0.91 for all subscales. The final scale according to the Cronbach alphabet was 0.89 (19). In Samaei et al. study, the results showed that the internal consistency was 0.92 (20).

B) Acceptance and Action Questionnaire-II (AAQ-II): This questionnaire was made by Bond et al. in 2011. The questionnaire has ten items graded on a seven-point Likert scale (never to always). This questionnaire measures acceptance, empirical avoidance, and cognitive inflexibility. The retest reliability of this questionnaire is 0.81, and its internal consistency is 0.84.

In studies on psychometric characteristics of this scale, the results showed that the reliability was 0.89, and the retest coefficient was 0.80 (21).

After selecting the sample, first, the purpose of the research was explained to them and in the pre-test stage, the questionnaire was given to them and then the mothers were randomly assigned to two experimental and control groups.

Individuals in the experimental group received 8 sessions of 90-minute treatment of acceptance and adherence in a group manner, and the control group did not receive any treatment. After the sessions, both groups were evaluated. The structure of the sessions is based on the 8-session protocol of the step-by-step self-treatment book based on the acceptance and commitment of (17).

Results

The mean and standard deviation related to the scores of the participants in the research variables and its subscales in the pre-test and post-test are presented in Table 2.

Multivariate analysis of covariance test was used to determine the significance of the difference between the experimental and control groups. However, to first examine the assumptions that data distribution is normal, variance homogeneity of variables and variance-covariance matrix homogeneity, Shapiro-Wilk test, Leven test and Box test were used. The results of the Shapiro-Wilk test showed that the research variables have a normal distribution (P>0.05). The results of the Leven test showed that the variance of all research variables between the two groups was equal and did not differ significantly (P>0.05). In addition, the homogeneity results of the variance-covariance matrix of perfectionism and psychological flexibility showed that the default homogeneity of the variance-covariance matrix was observed (P>0.05, F=0.793, M Box's= 2.640). Wilkes' multi-variable Lambda statistic (P<0.001, F= 74.763) was also significant for perfectionism and psychological flexibility, as well as the dimensions of perfectionism (P<0.001, P<0.222). Finally, the same regression slope test is the same for experimental and control groups (P>0.05). Therefore, covariance analysis can be used.

Table 1. The structure of acceptance and commitment treatment

Sessions	Descriptions and goals of treatment
1st session	Welcoming and getting to know the members of the group with the therapist and each other, connecting with the members of the group, describing the goals and rules of the group, including not being absent, attend meetings on time, doing the homework, expressing the principle of confidentiality, and mutual respect of group members to each other, psychological training, and general description of psychological approach.
2nd session	Creating insight into members' problems, and challenging control, introducing desire as another answer, homework, make a list of ways to control problems, and examine their pros and cons.
3rd session	Assess the homework, and review the previous session, introduction and application of cognitive fault techniques, intervention in the performance of problematic language chains, homework, writing troublesome thoughts, and having them with you, discovering, and examining the reasoning, and its impact on people's mood.
4th session	Assess the homework and review the previous session, application of mindfulness techniques, mind modeling, learning to see inner experiences as a process, homework, apply mindfulness exercises outside of treatment sessions and in routine life.
5th session	Assess the homework and review the previous session, see yourself as a background, weaken self-concept and self-expression as an observer, homework, perform your observation practice and record the cases in which the students have succeeded in observing and not evaluating the experiences and emotions.
6th session	Assess the homework and review the previous session, introducing the concept of value and identifying members' life values and measuring values based on their importance, homework, discovering the practical values of life in different fields and preparing a list of obstacles to advancing the realization of values.
7th session	Assess the homework and review the previous session, provide practical solutions to remove barriers to values, understanding the nature of desire and commitment, determine patterns of action commensurate with values, homework, report on tracking values, and thinking about meeting achievements.
8th session	Summarize the concepts reviewed during the meetings, request members to explain their achievements to the group

Table 2. Mean and standard deviation of the variables in pre-test and post-test

Variable	Experimental Group		Control Group	
	Mean	Std. Deviation	Mean	Std. Deviation
Pre-test order and organization	18.75	4.30	17.16	4.13
Post-test order and organization	19.41	1.88	17.00	3.64
Pre-test targeting	17.25	5.78	16.83	5.81
Post-test targeting	17.66	5.78	16.33	5.80
Perception of pressure by parents pre-test	13.16	2.88	12.583	2.60
Perception of pressure by parents post-test	13.25	2.26	12.16	2.40
Striving for excellence pre-test	15.41	3.96	14.41	5.74
Striving for excellence post-test	10.83	3.35	15.16	6.20
High standard for others pre-test	13.17	3.99	14.08	3.65
High standard for others post-test	10.16	3.99	14.66	4.11
Approval need pre-test	19.08	7.83	18.58	5.10
Approval need post-test	14.58	6.81	19.83	5.02
Focusing on mistakes pre-test	17.91	4.56	17.41	3.96
Focusing on mistakes post-test	14.34	4.39	18.08	3.55
Rumination pre-test	15.33	4.41	14.66	4.92
Rumination post-test	11.41	4.03	15.41	4.71
Perfectionism pre-test	130.08	12.36	125.75	14.69
Perfectionism post-test	114.33	10.00	128.66	15.94
Flexibility pre-test	17.50	6.08	16.58	6.653
Flexibility post-test	23.83	5.33	16.08	6.62

Table 3. Assessing the assumptions of normal distribution and homogeneity of research variables

Variable	Normality		Homogeneity of variance		Variable	Normality		Homogeneity of variance	
	Pre-test	Post-test	Pre-test	Post-test		Pre-test	Post-test	Pre-test	Post-test
	P	P	F	P		P	P	F	P
Perfectionism	0.61	0.54	0.46	0.50	Striving for excellence	0.71	0.37	1.66	0.20
Psychological flexibility	0.80	0.67	0.51	0.47	High standard for others	0.25	0.57	0.474	0.49
Order and organization	0.14	0.20	0.02	0.88	Approval need	0.39	0.12	3.97	0.059
Purposefulness	0.11	0.53	1.67	0.20	Focusing on mistakes	0.19	0.45	0.105	0.74
Perception of pressure by parents	0.33	0.38	0.65	0.42	Rumination	0.41	0.36	0.338	0.56

The results of multivariate analysis of covariance related to perfectionism and psychological flexibility were presented in (Tables 3,4). The results of Table 3 show that after controlling the pre-test effect, the difference between the pre-test and post-test scores of the two groups is significant for the perfectionism variable and the mean scores of the experimental group in the perfectionism variable are also significantly lower than the control group (The square of Eta= 0.62, $P<0.05$, F= 106.35). Also, the scores of the experimental group in the variable of cognitive flexibility are significantly lower than the control group (The square of Eta= 0.46, $P<0.05$, F= 17.103). Similarly, the results of Table 4 show that there is a significant difference between the averages of the two groups in the components of perfectionism, including: striving for excellence, high standards for others, the need for approval, focusing on mistakes, and Rumination ($P<0.05$). However, there was no significant difference in the components of order and organization, purposefulness and pressure perception by parents ($P>0.05$).

Table 4. The results of multivariate analysis of covariance related to experimental and control groups in the variables of perfectionism and psychological flexibility

Source of changes		The sum of squares	df	Average squares	F	P	Square of Eta
Perfectionism	Group	1970.71	1	1970.718	106.35	0.000	0.62
	Error	370.59	20	18.530			
Psychological flexibility	Group	296.67	1	296.673	17.003	0.001	0.46
	Error	384.96	20	17.44			

Table 5. Results of multivariate analysis of covariance related to two experimental and control groups in perfectionism components

Source of changes		The sum of squares	df	Average squares	F	P	Square of Eta
Order and organization	group	15.56	1	15.56	3.69	0.075	0.11
	error	58.93	14	4.21			
Purposefulness	group	5.623	1	5.623	1.740	0.208	0.11
	error	45.245	14	3.232			
Perception of pressure by parents	group	0.233	1	0.233	0.101	0.755	0.007
	error	32.359	14	2.311			
striving for excellence	group	153.40	1	153.40	96.86	0.000	0.39
	error	22.17	14	1.58			
High standard for others	group	69.78	1	69.78	126.12	0.000	0.48
	error	6.01	14	0.429			
Approval need	group	184.11	1	189.11	115.42	0.000	0.42
	error	11.98	14	0.856			
Focusing on mistakes	group	88.52	1	88.52	78.49	0.001	0.38
	error	15.78	14	1.128			
Rumination	group	104.11	1	104.11	151.68	0.001	0.61
	error	6.91	14				

Discussion

The findings of the present study indicate that treatment based on acceptance and commitment to the overall score of psychological flexibility has positive and significant effects with a volume of 0.46. Thus, in the total score of psychological flexibility, the mean of the experimental group has increased significantly compared to the control group. Also, the effect of treatment based on acceptance and commitment on perfectionism of mothers with children with tic disorder is significant and the volume of the effect of intervention is 0.62.

In this field, Zare Bidaki and Jahangiri in a study published in 2017 evaluated the effectiveness of acceptance and commitment therapy on psychological flexibility in mothers with autistic children. In this study 30 mothers were divided randomly into two experimental and control groups. The experimental group received 8 sessions of treatment based on acceptance and commitment, while the control group did not receive any intervention. Research instrument was Acceptance and Action Questionnaire-II. Based in the results, this treatment can improve psychological flexibility and its effect size was measured equal to 0.36. The mean score of psychological flexibility of mothers who received acceptance and commitment-therapy increased significantly (49.53 vs 41.53). This finding supports the finding of our study which suggests the effect size of acceptance and commitment-based therapy as 0.46 (22).

Another study by Gharaee-Ardakani et al. on the effectiveness of acceptance and commitment therapy on psychological flexibility in 30 women with chronic headache indicated that this treatment led to significant improvement of psychological flexibility and acceptance of pain in the experimental group compared to the controls (23). This finding supports the present study. Although the samples were not mothers of patients children and themselves had physical problem.

Also, Taghvainzadeh et al. in a study published in 2020 assessed the effect of acceptance and commitment therapy on perfectionism and emotional regulation in 30 patients with obsessive-compulsive disorder who divided into two experimental and control groups. They revealed that the effect of ACT was significant on these two variables. The effect size of ACT reported Eta=35.2 and Eta= 25.9 for perfectionism and emotional regulation, respectively. This effect was persistent after one-month (24).

The same findings were indicated in study by Mardani Garmdareh et al. to assess the effectiveness of ACT on psychological flexibility and perfectionism in girl students with exam anxiety. They concluded that ACT is associated with significant differences between experimental and control groups (25).

Overall, the results of the present study showed that treatment based on acceptance and commitment has a significant effect on increasing psychological flexibility and reducing perfectionism. Due to the high perfectionism in mothers who have children with tic disorder and its effect on the aggravation of symptoms of tic disorder, there is a need for new psychotherapy programs among psychotherapists, counselors and other mental health professionals. Therefore, this treatment method can play an effective role.

The present study has some limitations such as sample size consisted mothers who referred in one psychiatric center and lack of demographic factors such as age, marital and occupational status.

Conclusion

It seems that commitment and acceptance-based therapy is an effective method to improve psychological resilience and reduce perfectionism in mothers of children with tic disorders.

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