



# Effectiveness of acceptance and commitment therapy in improving interpersonal problems, quality of life, and worry in patients with body dysmorphic disorder

Maryam Akbari Dehbaneh<sup>1</sup>

## ABSTRACT

**Background:** Body dysmorphic disorder (BDD) is a relatively common yet understudied disorder of perceived flaws in one's appearance.

**Aims:** To evaluate the effectiveness of acceptance and commitment therapy (ACT) in improving interpersonal problems, quality of life, and worry in patients with BDD.

**Methods:** This was a single-case research with multiple baseline design. Six eligible cases were recruited from among the clients of a cosmetic center in Tehran city during 2015–16. Yale-Brown Obsessive Compulsive Scale modified for Body Dysmorphic Disorder, the Inventory of Interpersonal Problems, WHOQOL-BREF, and the Penn State Worry Questionnaire were used for data collection. The intervention included 8 weekly sessions of acceptance and commitment therapy. Data were collected before intervention, after 4th session, after intervention, and 3-month follow-up. Descriptive statistics was used for data analysis by using SPSS 22.

**Results:** Mean score for interpersonal problems decreased from 65 at pre-intervention to 39 at 3-month follow-up, and that for worry decreased from 59 to 33. All domains of quality of life increased at 3-month follow-up compared with pre-intervention: physical domain increased from 41 to 75, psychological domain from 36 to 72, social domain from 32 to 75, and environment domain from 41 to 73.

**Conclusion:** ACT can be considered an effective approach to improving interpersonal problems, quality of life, and worry in patients with BDD.

**Keywords:** acceptance and commitment therapy, interpersonal problems, quality of life, body dysmorphic disorder

## INTRODUCTION

Body dysmorphic disorder (BDD) is an obsessive-compulsive disorder that is characterized by preoccupation with one or more perceived flaws in one's own appearance that are not observable or appear slight to others and that is accompanied, at some point in the course of disorder, by repetitive behaviors (e.g., mirror checking, excessive grooming, skin picking, reassurance seeking) or mental acts (e.g., comparing his or her appearance with that of others) in response to the appearance concerns (1). The preoccupation causes clinically significant distress or impairment in social, occupational, or other important areas of functioning. BDD is a fairly understudied disorder because most patients would rather refer to dermatologists, internists, or cosmetic surgeons than psychiatrists. A study revealed that more than 50% of college students were at least to some degree preoccupied with one aspect of physical appearance, and this preoccupation had significantly affected the emotions and functioning in about 25% of these students (2). The prevalence of BDD among the general population and the United States adults has been reported to be 7% and 2.4 percent, respectively (1,3). The most common age at onset is 13–15 years, with females being affected more than males, and singles more than the married.

BDD usually coexists with other psychopathology. A study revealed that patients with BDD had experienced an episode of major depression (>90%), anxiety disorder (about 70%), or a psychotic disorder (30%) in their lives (2). Other common comorbidities of BDD are social anxiety (social phobia), OCD, and substance-related disorders (1). A study found that adolescents with BDD suffered from somatization, obsessive disorders, and depression (4). Another study reported that 7% of the cosmetic surgery patients present with BDD diagnostic criteria (5).

<sup>1</sup> Ma, Clinical Psychology, Islamic Azad University, Rasht branch, Rasht, Iran

Received: 29 Mar 2018, Accepted: 7 May 2018

**Correspondence:** Maryam Akbari Dehbaneh

Ma, Clinical Psychology, Islamic Azad University, Rasht branch, Rasht, Iran.

E-mail: [marryam.akbari.dehbaneh@gmail.com](mailto:marryam.akbari.dehbaneh@gmail.com)

Interpersonal problems is one of the main constructs of BDD. Some psychotherapy theories maintain that interpersonal relations can both be a cause and a consequence of mental and physical problems (6). The object relations theory maintains that interpersonal relations are central to organization of an individual's life (7). Sayad et al. claimed that interpersonal sensitivity is the main psychological construct of BDD (8) and Basaknejad and Ghafari showed that interpersonal sensitivity is the major predictor of BDD in college students (9).

Another important construct of BDD is quality of life. Quality of life is highly related to individuals' emotional moods and mental health and reflects their satisfaction with life (10). Cuhandaoglu showed that BDD is associated with low self-esteem and, consequently, decreased quality of life (11). Albertiny et al. reported that adolescents with BDD had lower quality of life (12).

Worry in another construct addressed in this study. Worry represents a cognitive process through which individuals anticipate threatening events and results and gradually evolves to a strategy for discovering and counteracting imminent threats. Therefore, worrying people live in a constant state of hypervigilance. Since anticipated threats are naturally improbable, humans' intrinsic ability to planning through thinking about the future will lead to counterproductive behavior and finally cause distress and anxiety (13). The most objective approach to worry is to try to dissolve mental problems, although it might prove ineffective (14). Worry is also associated with continuous negative affection and impaired cognitive skills (15). Research shows that worry about physical appearance is a predictor of seeking cosmetic rhinoplasty in women referring to cosmetic surgeons (16).

Multiple pharmacological as well as psychological interventions have been introduced for the treatment of BDD. The first generation of behavior therapies were developed in the 1950's and 1960's based on classical conditioning and operant conditioning. The second-generation therapies, i.e. cognitive-behavioral, was developed by the 1990's, with an emphasis on cognitive aspects, and acknowledged the role beliefs, cognition, schemas, and information processing system in the development of psychopathologies. Today, the third generation of the therapies, including dialectical behavior therapy, functional analytic psychotherapy, and acceptance and commitment therapy (ACT), have been developed. ACT was developed by Hayes within the philosophy of functional contextualism (17). It is based on a theory of language and cognition called relational frame theory.

ACT has six core principles, namely, acceptance, cognitive defusion, self as context, contact with the present moment, values, and committed action, that help clients achieve psychological flexibility (18). These principles affect the function of language, are interrelated, and influence each other to enhance psychological flexibility (19). From this perspective, distorted experience of unpleasant emotion leads patients to engage in problematic behaviors designed to avoid or attenuate those unpleasant emotions (20). While this strategy may prove effective in the short run, it eventually places the client in harmful situations and causes more distress. Individuals with BDD are constantly appraising their appearances and, experiencing unpleasant affections in the process, try to avoid the situation. However, this does not eliminate the negative thoughts or affects, but may even exacerbate them in the long term. Therefore, avoidance is not an effective strategy and could lead to problematic behaviors. According to the relational frame theory, based on which ACT has been developed, the individual labels his or her emotions as disturbing and resorts to ineffective measures to change them (21). Since patients with BDD are preoccupied with personal appearance and tend to overlook other important values in life, they are asked to try and establish other values in their lives and commit themselves to follow those values. Given the relative prevalence and the chronic nature of BDD and that people with BDD are more likely to resort to unnecessary cosmetic surgeries, the successful treatment of the disease could significantly contribute to mental health in community. Research on the use of ACT in the treatment of BDD is limited. Habibollahi and Soltanzadeh found that ACT significantly reduced body image dissatisfaction and the fear of negative judgment (21). Linde and colleagues applied acceptance-based exposure therapy in patients with BDD and reported significant improvements in BDD symptoms, quality of life, depression, psychological flexibility, and disability (22). Forman and associates also showed that ACT helps reduce the feeling of shame and embarrassment associated with overweight (23).

The aim of the present study, therefore, was to investigate the effectiveness of ACT in improving interpersonal problems, quality of life, and worry in patients with BDD.

## **METHOD**

This was a single-case research with multiple baseline design. Participants were recruited via convenience sampling from among clients of a cosmetic center in Tehran city during 2015–16. Twelve volunteers with the highest scores on the Yale-Brown Obsessive Compulsive Scale modified for Body Dysmorphic Disorder (YBOCS-BDD) were interviewed for the diagnosis of BDD according to DSM-5 criteria and six of them were entered in the intervention after giving their written

**Table 1:** Demographic characteristics of the cases

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
<b>Age</b>	40	28	25	18	19	20
<b>Gender</b>	Female	Female	Female	Female	Female	Male
<b>Marital status</b>	married	married	single	single	single	single
<b>Education</b>	Diploma	BA	BA	Diploma	Diploma	Diploma

consent. The intervention consisted of weekly 1-hour sessions of ACT for 8 weeks. Participants were familiarized with the ACT principles and techniques before starting the program, and completed the questionnaires in four time points (pre-intervention, after 4th session, post-intervention, and 3-month follow-up). Inclusion criteria were (1) being diagnosed with BDD based on DSM-5, (2) being between 18 and 40 years old, and (3) not starting psychotherapy during last month. Participants were excluded in case of failure to attend the sessions, not adhering to the group rules, and receiving psychotherapy during intervention. ACT sessions were supervised by a trained psychologist.

## RESEARCH TOOLS

Yale-Brown Obsessive Compulsive Scale modified for Body Dysmorphic Disorder (YBOCS-BDD) is a 12-item Likert-type self-administered instrument designed to assess severity of BDD. The instrument enjoys a desirable validity and reliability (24). Rabiee et al implemented the instrument in an Iranian sample and evaluated its psychometric properties and showed a desirable validity and reliability (25).

The inventory of interpersonal problems (IIP-32) is a 32-item self-report instrument, developed by Barkham et al. (26) consisting of 8 scales: supportiveness, assertiveness, aggressiveness, sociability, openness, being too caring, dependence, and involvedness. Fath and colleagues standardized the Iranian version and reduced its items to 29. Cronbach's alpha coefficients for the scale was 0.82. Convergent validity between this test and Alexithymia test was positive and significant. The instrument is a 5-point Likert scale from "strongly disagree" to "strongly agree," with score ranging from 0 to 116.6

The Penn State Worry Questionnaire (PSWQ) is a 16-item self-report questionnaire designed to assess extreme, uncontrollable worry. It is a 5-point Likert-type scale which is rated from 1 (not at all typical of me) to 5 (typical of me). Items 1, 3, 8, 10, and 11 are reverse scored. The total score ranging from 16 to 80. Dehshiri et al showed that the bifactorial model of the questionnaire (generalized anxiety and absence of anxiety) has a better goodness of fit than the unifactorial model. The alpha coefficient for the questionnaire is 0.88.27

The World Health Organization Quality of Life (WHOQOL)-BREF comprises 26 items, which measure four broad domains of physical health, psychological health, social relationships, and environment. The items are rated on a 5-point scale, with higher score corresponding to better quality of life. A comparison of the WHOQOL-BREF with the longer version revealed a good consistency of scores between the two questionnaires (28). The analysis of psychometric properties of the WHOQOL-BREF indicated a good discriminant validity, content validity, internal consistency (physical health: 0.8, psychological health: 0.76, social relationships: 0.66, and environment: 0.8), and reliability (29).

## DATA ANALYSIS

Descriptive statistics (mean and standard deviation) were used to investigate the effectiveness of ACT. Data were analyzed using SPSS V22.

## RESULTS

Demographic characteristics of the study cases are presented in **Table 1**.

The protocol used in this study was adapted from the intervention protocol for chronic pain developed by Vowles and Sorrell in 2008 (30). **Table 2** illustrates the general structure of the therapy sessions.

**Table 2:** The structure of ACT sessions

Session	Agenda	Goals
1	Introductions and basic foundations of treatment	(1) Introducing the group members and treatment aims, (2) explaining BDD, (3) review of past treatments for BDD (4) homework
2	Options and setting a course for treatment	(1) Mindfulness practice (breathing exercise); (2) describing the interrelations among BDD, mood, and function; (3) homework (a task based on mindfulness, reflecting on self and living with BDD, and recording daily experiences)
3	"Learning to live" with BDD	(1) Mindfulness practice (breathing exercise); (2) acceptance of BDD (defining acceptance, the Serenity Prayer, the Polygraph metaphor, control, avoidance); (3) values (exploring the values in life, the funeral metaphor); (4) homework (rating values, mindfulness practice)
4	Values and action	(1) Mindfulness practice (leaves on a stream exercise); (2) clarification of values; (3) barriers to values (imagery, the "magic wand" question, BDD as a barrier); (4) goals and actions
5	Action—getting your feet moving	(1) Mindfulness practice; (2) planning and action; (3) observing self and mindfulness; (4) Titchener's repetition exercise (milk, milk, milk); (5) the "Passengers on the Bus" metaphor; (6) stage show metaphor
6	Commitment	(1) Mindfulness practice (past, present, future); (2) willingness (the unwelcome guest metaphor); (3) commitment to actions and values; (4) committed action
7	Review and practice	(1) Mindfulness practice; (2) overview of the 6 principles of ACT and important metaphors
8	Lifelong maintenance	(1) Mindfulness practice (breathing exercise); (2) commitment; (3) relapse prevention and setbacks; (4) lifelong assignment

**Table 3:** Mean (SD) scores for QoL, worry, and interpersonal problems

	Variable	Time	Mean (SD)	SE	95% CI
Interpersonal problems		1	65.83 (7.94)	3.24	57.51–74.16
		2	52.83 (5.11)	2.08	47.46–58.20
		3	50.2 (11.3)	5.05	36.17–64.23
		4	39.28 (2.98)	1.13	36.52–42.04
Physical		1	41.83 (17.52)	7.15	23.45–60.22
		2	61.33 (11.48)	4.68	49.28–73.38
		3	61 (29.02)	12.98	24.97–97.03
		4	75.86 (4.14)	1.56	72.03–79.69
Psychological		1	36.5 (13.87)	5.66	21.95–51.05
		2	56.17 (6.94)	2.83	48.88–63.45
		3	71.4 (3.29)	1.47	67.32–75.48
		4	72.43 (5.85)	2.21	67.01–77.84
QoL	Social	1	32.33 (18.75)	7.65	12.66–52.01
		2	48 (14.63)	5.97	32.65–63.35
		3	67 (6.98)	3.12	58.93–76.27
		4	75 (3.46)	1.3	71.8–78.2
Environment	1	41.67 (14.83)	6.05	26.10–57.23	
	2	59 (6.77)	2.76	52.39–66.61	
	3	69 (4.24)	1.9	63.73–74.27	
	4	73.28 (8.28)	3.13	65.63–80.94	
Worry		1	59.5 (6.25)	2.55	52.94–66.06
		2	43.5 (3.83)	1.56	39.48–47.52
		3	34.8 (1.1)	0.49	33.44–36.16
		4	33 (1.63)	0.62	31.49–34.51

The scores for quality of life, worry, and interpersonal problems obtained at 4 different time points (1: pre-intervention, 2: 4th week of intervention, 3: post-intervention, 4: 3-month follow-up) are presented in **Table 3**.

As demonstrated in **Table 3**, the mean score for interpersonal problems decreased from 65.83 at pre-intervention to 39 (29). At 3-month follow-up, which indicates the effectiveness of ACT in reducing interpersonal problems.

The scores for different domains of QoL were increased significantly: from 41 to 75 for the physical health domain, from 36 to 72 for the psychological domain, from 32 to 75 for the social domain, and from 41 to 73 for the environment domain. These results show that ACT has been effective in improving QoL among our cases.

Also, the intervention decreased the score for worry from 59 at pre-intervention to 33 at 3-month follow-up, indicating an effective role for ACT intervention in decreasing worry among patients with BDD.

## DISCUSSION

The present study investigated the effectiveness of an 8-session ACT intervention in improving interpersonal problems, QoL, and worry in 6 patients with BDD. The results show that the effect of the intervention on the study variables was desirable and was maintained through the follow-up period. Although research on the effect of ACT on BDD is limited, our results are consistent with the findings of Habibollahi and Soltanizadeh that ACT results in decreased body image dissatisfaction and fear of negative judgment (21), as well as Linde et al. that ACT significantly improves BDD symptoms, quality of life, depression, psychological flexibility, and disability (22). Also, our findings are supported by Forman et al., who showed that ACT helps reduce the feeling of shame and embarrassment associated with overweight (23).

In support of our finding that ACT decreased worry in patients with BDD, Codd et al. have reported that ACT reduces anxiety and worry in patients with anxiety disorders, including generalized anxiety disorder (31). Also, Rajabi and colleagues showed that ACT is more effective an approach in reducing worry than is integrative behavioral marital therapy (32).

Also, consistent with our results regarding the effectiveness of ACT in improving QoL in patients with BDD, Kahel et al. have shown that ACT improves QoL in patients with chronic pain (33), and Mohabbat-Bahar et al. reported that group psychotherapy based on acceptance and commitment is an effective approach to improving QoL in patients with cancer (34).

In explaining these findings, various aspects should be considered. Patients with BDD are highly worried about their appearance, and this worry could lead to disruptions in daily life. Individuals with BDD usually avoid interpersonal relations. The perception of being ugly or unattractive leads them to be preoccupied with their appearance and seek to offset these "defects" through makeup, excessive grooming, or surgery. They usually seek reassurance of their family and friends. This impairs their quality of life and detaches them from main issues of life, including education and occupation. The paradigm of ACT holds that thoughts are the product of normal human mind, and beliefs the product of conceptual integration. What turns thoughts into beliefs is the individual's integration with the content of the thoughts. When the individual act based on a thought about body image dissatisfaction, he gets integrated with the content of that thought, and body dysmorphic beliefs are developed. The acceptance and commitment therapy techniques attempt to decrease this conceptual integration. As the conceptual integration decreases, the individual defuses from the content of the thought. Cognitive defusion techniques help clients to see the thoughts as thoughts, feelings as feelings, and memories as memories, and physical perceptions as physical perceptions only. These internal events are not detrimental to health per se, however, they cause problems when they are seen as unhealthy, adverse experiences that should be controlled and avoided (35). The therapist teaches clients through cognitive defusion to see internal events as they are, not as what the events say they are, and this results in better acceptance (36).

## CONCLUSION

ACT can be used as a treatment approach in patients with BDD, and it is effective in improving interpersonal problems, quality of life, and worry in these patients.

## REFERENCES

1. American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorders, 5th, DSM-5, 2013.
2. Sadock BJ, Sadock VA. Kaplan and Sadock's Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry. 2011.
3. Otto UV, Wilhelm S, Chohen LS, et al. Prevalence of body dysmorphic disorder in a community sample of women. *Am J Psychiatry*. 2001;158-206;1-3.
4. Erica L. The relationship between body dysmorphic disorder and depression, self-esteem, somatization and obsessive compulsive disorder. *J Clin Psychology*. 2011;15-26.
5. Sarwer DB, Crerand CE. Body image and cosmetic medical treatments. *Body Image*. 2004;1(1):99-111. [https://doi.org/10.1016/S1740-1445\(03\)00003-2](https://doi.org/10.1016/S1740-1445(03)00003-2)
6. Fath N, Azadfallah P, Rasolzadeh S, et al. Validity and reliability inventory of interpersonal problems. *Jur clin psychol*. 2013;5(3). [Persian]
7. Simanowitz V, Pearce P. Personality and development. Uk:MC Grow-Hill. 2003.
8. Sayad S, Zargar Y, Besaknejad S. Efficacy cognitive behavioral therapy on body dysmorphic disorder in daughter student. *Res Behavior*. 2010;8-34.

9. Basaknejad S, Ghafari M. Relation between body dysmorphic concern and psychological disorders in Students of university, *Journal of Behavior Science Research Center*. 2007;1(2):179-87. [Persian].
10. Rafiee M. The relationship between quality of life and job satisfaction of faculty at Sharif University. *Journal of Research and Planning in Higher Education*. 2003;48:72-80. [Persian]
11. Cuhandaoglu F. Self-esteem and quality of life in adolescents with body dysmorphic disorder in Turkey. (Dissertation). Ankara: Hacettepe uni. 2006.
12. Albertiny MM, Malters C, Philips KA. Psychological and quality of life in adolescent with body dysmorphic disorder behavior. *Psychiatry Res*. 2010;4(2):53-143
13. Hazlett-Stevens H. Psychological approaches to generalized anxiety disorder: A clinician's guide to assessment and treatment. New York: Springer Verlag. 2008. <https://doi.org/10.1007/978-0-387-76870-0>
14. Hong RY. Worry and rumination: Differential associations with anxious and depressive symptoms and coping behavior. *Behavior Research and Therapy*. 2007;45(4):227-290. <https://doi.org/10.1016/j.brat.2006.03.006>
15. Hughes ME, Alloy LB, Cogswell A. Repetitive thought in psychopathology: The relation of rumination and worry to depression and anxiety symptoms. *J Cogn Psychother*. 2008;22(3):271-289. <https://doi.org/10.1891/0889-8391.22.3.271>
16. Veal D. Cosmetic rhinoplasty in body dysmorphic disorder. *Br J Plast Sur*. 2003;56(6):546-551. [https://doi.org/10.1016/S0007-1226\(03\)00209-1](https://doi.org/10.1016/S0007-1226(03)00209-1)
17. Hayes SC, Strosahl K, Wilson KG. Acceptance and commitment therapy. An experimental approach to behavior Change. New York: Guilford press. 1999.
18. Hayes SC, Luoma JB, Bond FW, et al. Acceptance and Commitment therapy: model, processes and outcomes. *Behav Res Therapy*. 2006;44(1):1-25. <https://doi.org/10.1016/j.brat.2005.06.006>
19. Hayes SC, Strosahl KD. A practical Guide to Acceptance and commitment Therapy. New York: springer science and Business media Inc. 2010.
20. Blakledge JT, Hayes SC. Emotion regulation in acceptance and commitment therapy. *J Clin Psychol*. 2001;57(2):243-255. [https://doi.org/10.1002/1097-4679\(200102\)57:2<243::AID-JCLP9>3.0.CO;2-X](https://doi.org/10.1002/1097-4679(200102)57:2<243::AID-JCLP9>3.0.CO;2-X)
21. Habibollahi A, Soltanzadeh M. Efficacy acceptance and commitment therapy on body evaluation in girl adolescents with body dysmorphic disorder. *J Mazandaran Uni Medsci*. 2016;25(134):278-290. [Persian].
22. Linde J, Ruck C, Bjureberg J, et al. Acceptance-Based Exposure Therapy for body dysmorphic disorder: A pilot study. *Behav Ther*. 2015;46(4):423-431. <https://doi.org/10.1016/j.beth.2015.05.002>
23. Forman EM, Butrun ML, Hoffman KL, et al. An open trial of an acceptance-based behavioral treatment for weight loss. *Cogn Behav Pract*. 2009;16(2):223- 235. <https://doi.org/10.1016/j.cbpra.2008.09.005>
24. Phillips KA, Hollander E, Rasmussen SA, et al. Severity rating scale for body dysmorphic disorder: development, reliability and validity of a modified version of the Yale-Brown obsessive compulsive scale. *Psychopharmacol Bull*. 1997;33(1):17-22.
25. Rabiee M, Khoramdel K, Kalantari M, et al. Factor structure, validity and reliability of the modified yale-brown obsessive compulsive scale for body dysmorphic disorder in students. *Psychiatry Clin Psychol*. 2010;15(4):343-350 [ Persian]
26. Barkham M, Hardy GE, Startup M. The IIP-32: A short version of the inventory of interpersonal problems. *Br J Clin Psychol*. 1996;35(1):21-35. <https://doi.org/10.1111/j.2044-8260.1996.tb01159.x>
27. Dehshiri GH, Golzari M, Borjali A, et al. Psychometric properties of the Farsi version of the Penn state worry questionair in student. *Jur Clin Psychol*. 2009;1(4).
28. Skevington SM, Lotfy M, O'Connell KA. WHOQOL Group. The world Health organization's WHOQOL-BREF quality of life assessment: psychometric properties and results of the WHOQOL Group. *Qual Life Res*. 2004;13:299-310. <https://doi.org/10.1023/B:QURE.0000018486.91360.00>
29. WHOQOL Group. Development of the world health organization WHOQOL-BREF quality of life assessment. *Psychol Med*. 1998;28:551-558. <https://doi.org/10.1017/S0033291798006667>
30. Vowles K, Sorrell JT. Life with chronic pain: An acceptance-based approach therapist guide and patient work book. 2007
31. Codd RT, Twohig MP, Crosby JM, et al. Treatment of three anxiety disorder cases with acceptance and commitment therapy in a private practice. *J Cogn Psychother*. 2011;25(3):203-17. <https://doi.org/10.1891/0889-8391.25.3.203>

32. Rajabi, GR, Imani M, Khojastehmehr R, et al. Review performance-based acceptance and commitment therapy based on an integrated behavioral marital therapy and marital concerns women have martial turmoil and generalized anxiety disorder. *Research and behavioral Sciences*. 2013;11(6): 600-619.
33. Kahel KG, Winter L, Schweiger U. The third wave of cognitive behavioural therapies: what is new and what is effective? *Curr Opin Psychiatry*. 2012;25(6):522-528. <https://doi.org/10.1097/YCO.0b013e328358e531>
34. Mohabbat-Bahar S, Maleki-Rizi F, Akbari ME, et al. The effectiveness of group psychotherapy based on acceptance and commitment on quality of life in women with breast cancer. *Thought & Behavior in clinical psychology*. 2015;9(34):17-26.
35. Hayes SC. Acceptance and commitment therapy, relation frame theory, and the third wave of behavioral and cognitive therapies. *Behav Ther*. 2004;35(4):639-665. [https://doi.org/10.1016/S0005-7894\(04\)80013-3](https://doi.org/10.1016/S0005-7894(04)80013-3)
36. Hayes SC, Lillis J. *Acceptance and commitment therapy (theories of psychotherapy)*. USA: American psychological Association. 2012.



<http://www.ejgm.co.uk>