

# The Effectiveness of Cognitive-Behavioral Therapy on Psychological Well-Being in People with Panic Disorder

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## Abstract

The aim of the present study was to determine the effectiveness of cognitive-behavioral therapy on psychological well-being in people with panic disorder. The current research is of the basic research type, and in terms of the research method, it is a quasi-experimental type with a pre-test, post-test design with a control group. The statistical population consisted of all women suffering from panic disorder who referred to specialized psychiatric clinics in the 2nd district of Tehran in 2024 and who filed a case in the centers. The sampling method was available, and the sample size was 30 people. In order to collect data, Riff's psychological well-being questionnaire (1980) was used. In this study, the 12-session cognitive behavioral therapy protocol of Lehan and Hutton (Frey, 2007; Frey, 1999; Robert, 2010; and Keith, 2010) was implemented during 12 90-minute sessions. Descriptive statistics (frequency, percentage, central dispersion statistics, etc.) and inferential statistics (variance analysis with repeated measurements) were used to analyze the data. The results showed that cognitive-behavioral therapy is effective on psychological well-being in people with panic disorder.

**Keywords:** cognitive-behavioral therapy, psychological well-being, panic disorder

## Introduction

Many psychiatric conditions, including anxiety disorders, are common among the general population, and they have significant effects on an individual's psychological and social functioning, as well as their quality of life. Among these disorders is panic disorder, which is identified by repeated and unexpected episodes of panic. Those affected by this disorder remain anxious about the potential for sudden appearance of these disturbances, or experience detrimental adaptive behavior due to its consequences. This panic attack is an

abrupt onset of intense fear or discomfort, which peaks in intensity in a matter of minutes and involves at least four out of a list of thirteen symptoms, which are two cognitive-related (such as fear of losing control or going crazy and fear of dying) and eleven physical symptoms (including heart palpitations, sweating, etc.). (American Psychiatric Association, 2022). One of the challenges faced by people suffering from panic disorder is a decline in their psychological well-being. Panic is among the most disabling of the anxiety disorders because subjects repeatedly experience a severe and sudden sense of fear and anxiety. They are extremely sensitive to unforeseen events, which will significantly disrupt their mental status (Javelot et al., 2021). The assessment indicates how well an individual understands that their set of targets aligns with their performance outcomes, as determined through ongoing assessments. Consequently, it results in an overall and consistently high level of internal contentment throughout one's life (Khodaypanahi et al. 2009). Ryff and her colleagues' definition of psychological well-being was mainly an assessment of its categorization. It tried to categorize the definition of conditions of a desirable life or, in this case, of a "good life," with an exquisite philosophical touch. Based on this, they found six important ways to tell if something is good or not. The components of psychological well-being in Ryff's model (1989) include 1.Self-acceptance, 2.personal growth, 3.purpose in life, 4.positive relations with others, 5.environmental mastery, 6. autonomy). Lee and Orsillo (2014) suggested in their study that as well-being and mental adaptability rise in people, anxiety levels drop, and the reverse is true. According to Goetter & Elizabeth (2019), individuals with high psychological well-being can effortlessly restructure data to meet different situations and modify their thinking methods to handle novel and unforeseen scenarios. People who achieve psychological well-being face difficult situations and stressful events without anxious negative effects (Eskandari et al., 2016).

People who experience panic attacks often show a distinct decrease in emotional reaction and find it hard to identify and name their

feelings. People with panic disorder often struggle with cognitive reappraisal, which affects their ability to assess threats accurately. Research suggests that deficits in cognitive reappraisal can enable individuals to gain a more objective perception of personal threat levels. (Sheppes et al., 2015). Identifying efficient interventions to modify and restructure dysfunctional thoughts remains vital based on these clinical factors. The effectiveness of cognitive-behavioral therapy seems probable because its underlying principle posits that most disturbances originate from damaged ways of thinking, which then trigger unhealthy emotional reactions and problematic behaviors. The model of faulty cycles between cognition, emotion, and behavior exists to explain and support the development of all behavioral and psychological disorders (Thakral et al., 2020). Under this framework, cognitive behavioral therapy works to identify and restructure dysfunctional cognitive patterns because it helps clients address their issues effectively. According to Wilhelm et al. (2019), cognitive-behavioral therapy focuses on altering cognitive processes and beliefs because they strongly shape emotional responses and behavioral patterns. The primary purpose of this approach is to change mistaken beliefs and suboptimal thought patterns along with faulty perceptions and cognitive distortions, so the patient can achieve control over their life and develop effective self-talk skills and coping strategies (Thakral et al., 2020). According to Naushneen et al. (2017), individuals experience symptoms of loneliness disappearing when they are in a group and receive cognitive-behavioral intervention after they feel they are in an appropriate network of social interactions. According to Namjoo et al. (2019), cognitive therapy can be quite influential in reducing alexithymia and can even result in a reduction of pain in patients via the reduction of alexithymia. In their research, Tsapelas et al. (2016) mentioned that the cognitive-behavioral approach has led to a greater awareness of attributions and irrational beliefs in people who often show cognitive distortions, as they hold irrational and maladaptive beliefs in their lives. Considering

these factors, and because the presentation of effective and efficient methods is one of the foundational requirements in the clinical sciences, and cognitive behavioral therapy is one of the good treatments considered effective, this study will examine the effectiveness of the proposed combined practices and the question of whether cognitive behavioral therapy is effective on psychological well-being in individuals with panic disorder.

### Research method

The current investigation is applied research and, with respect to research method, is quasi-experimental research, which is a pre-test, post-test with a control group design. The statistical population of this research included all women with panic disorder who visited specialized psychiatric clinics in Region 2 of Tehran in the year 2024 and registered in these centers. Based on the semi-experimental research method, it is sufficient to have a sample size of 10-20 individuals (Hasanzadeh, 2019), and therefore, the sample in the research was comprised of 30 individuals with panic disorder (15 members of the first experimental group and 15 in the control group) who visited specialized psychiatric clinics in Region 2 of Tehran. Prior to the data collection, standardized questionnaires were utilized, followed by:

### Ryff's Psychological Well-Being

**Questionnaire** (1980): Ryff (1980) designed multiple psychometric scales aimed toward measuring psychological well-being, spanning over all four questionnaires with 84 items, 14 items, 9 items, and 3 items. Initially, these scales were item tested to develop the original 84-item psychological well-being scale. Next, the developed 54-item version and the smaller, shorter 18-item version were then produced.

This 54-item questionnaire is designed to assess the six core dimensions of the psychological well-being model. Each dimension includes a set of three items, with the six dimensions consisting of, autonomy, environmental mastery, personal growth, positive relations to others, purpose in life, and self-acceptance. This assessment utilizes a five-point Likert-type scale .Higher

psychological well-being is suggested by higher scores and lower emotional well-being by lower scores. The Cronbach's alpha coefficients obtained from the Ryff study had the following values: self-acceptance (0.93), positive relations with others (0.91), autonomy (0.86), environmental mastery (0.90), and personal growth (0.87) (Ryff, 1995). In Iran, one study conducted on a student sample measured internal consistency using Cronbach's alpha. The values that were calculated were 0.69 for mastery of the environment, 0.74 for personal growth, 0.65 for positive relations with others, 0.60 for autonomy, and 0.90 for the total score (Mikaeili, 2009). The reliability of the questionnaire was published as 0.82 in the research study titled "An Investigation of Aspects of Well-being and Their Role in Physical and Mental Health," by Bayani (2013). Furthermore, its validity was corroborated with an alpha coefficient of 0.88 using Cronbach's alpha. Specifically, the computed Cronbach's alpha coefficient

denotes excellent reliability of the questionnaire, which allows the researcher to assume a certain level of confidence in employing the questionnaire results for the final implementation .Fakhari et al. (2011) investigated the psychometric properties of this questionnaire as well. Their factor analysis indicated that the psychological well-being indicated by the questionnaire was supported. Further, Khanjani et al. (2014) determined by using a one-group confirmatory factor analysis that the six-factor model for the scale (self-acceptance, environmental mastery, positive relations with others, purpose in life, personal growth, and autonomy) had a good fit in the overall sample and for both male and female participants .Cronbach's alpha was used to assess internal consistency of the six factors of this scale; self-acceptance measured.51; environmental mastery, .76; positive relations with others,.75; purpose in life,.52; personal growth,.73; and autonomy,.72, as reported. The overall Cronbach's alpha for the entire scale was .71.

Table 1: Description of the Cognitive Behavioral Therapy Plan (Keith, 2010)

Content of sessions	Session
Initial Meeting- Discussing group norms - Discussing the interaction of physiological, cognitive, and behavioral processes - Introducing participants to the cognitive components of emotional responses - Identifying initial surface thoughts which take place between an event and emotional response - Writing those out in a three-column table: - A: Activating event - B: Beliefs or thoughts - C: Consequences or emotional response Assignment: With the A-B-C sequence, write ten of the worst events that happened in your life.	First
Acquaintance with the cognitive theory aspects of depression, anxiety, and anger; familiarity with automatic thoughts; familiarity with cognitive distortions and identifying them in one's own thinking; recognizing potential resistances to therapy and developing ways to deal with these resistances.	Second
An understanding of the basic principles of behavioral consequences (the nature of schemas, core beliefs, schemas, dysfunctional attitudes, schemas and automatic thoughts, and how to identify schemas through the vertical arrow technique). Assignment: Review of the assignment from the second session, continue to write daily A-B-C charts, and draw vertical arrows for two of them.	Third
Examining the vertical arrow method and the challenges that group members face when using this technique to identify negative schemas. Allowing individuals to recognize ten prevalent negative schemas and group their beliefs within these tense categories	Fourth
Assignments: Revision of assignment from the previous session and instruction on identifying beliefs.	
The participants will understand better how their multiple negative beliefs connect with one another. Participants must establish a complete record of their beliefs followed by visual depiction of relationships between them and prioritization for effects measurement.	
During the session participants perform three main tasks by reviewing previous assignment work and selecting core beliefs then identifying factors that sustain those negative beliefs. The Subjective Units of Distress Scale (SUDS) will aid us in this process whereas the vertical arrow technique will help categorize beliefs and each belief will receive a SUDS rating.	Fifth
The transformation of our beliefs can occur while people alter their existing convictions. You should write down all your beliefs for analysis while maintaining objective observation.	Sixth
The seventh level includes recognizing that beliefs possess varying usefulness levels which can be evaluated through particular criteria.	
You must identify your problematic beliefs through assignments which lead you to assess them along with deciding their retention or dismissal.	Seventh
Learning to analyze logically regarding one's personal beliefs remains the main objective of this assignment.	
The participants need to perform a comprehensive evaluation targeting their conditional and absolute belief frameworks to discover and challenge the mental constructs forming their personal views.	Eighth
The educational task of gaining awareness about belief systems different from your own serves as an assignment.	
Establish successive situations which connect to your fundamental beliefs The strategy involves finding alternative statements to counter negative self-beliefs and identifying personal counter-beliefs and creating a double-sided card that shows core beliefs with their challenging negative statements.	Ninth
This session divided its attention between perceptual change exploration and voluntary cortical inhibition evaluation. The current assignment involves reviewing previous session tasks. You will learn perceptual change by showing ambiguous images which lead to practice exercises. After that you will do exercises about cortical inhibition and daily practice of perceptual change or voluntary cortical inhibition.	Tenth
The session will focus on the method of self-punishment and self-reward for behavior modification. Assignments: Review the tasks from the previous session, Practice the self-punishment and self-reward technique to facilitate cognitive change, Review opposing beliefs, Engage in imaginative exercises, Complete the self-maintenance plan	Eleventh
Additionally, participants will present their plans for maintaining treatment goals, and feedback will be gathered from them regarding the treatment program.	Twelfth

### Implementation method

The researcher introduced participants to what would happen in the therapy sessions, followed by a response to their questions about the purpose of these sessions. The participants in the control group were also committed to attending therapeutic sessions after the experimental group session ended. Out of the 30 participants, 15 were randomly selected to be in the experimental group, and 15 other participants were randomly selected to be in the control group.

Therefore, the issue of informed consent in the research arose, and all participants indicated their full attendance to the research process. After completing the psychological well-being scale, participants were randomly assigned to the experimental and control groups during the pre-test stage.

The participants finished the psychological well-being questionnaire before their random selection into experimental or control groups

in the pre-test phase. Group sessions of cognitive-behavioral therapy were provided in an accessible format to participants who belonged to the experimental group. The control group participants awaited further therapy sessions on the waiting list after the end of the treatment period without receiving any pre-treatment interventions. The developed cognitive-behavioral intervention sessions faithfully followed the cognitive-behavioral therapy model defined by Keith (2010).

### Results

Regarding the analysis of the data in the current study, the information was first separated into two methods: descriptive and inferential. In the descriptive analysis, statistical indices related to the main variables in the study were calculated. In the inferential section, covariance analysis was conducted to test the research hypotheses, and results are shown in separate tables.

Table 3: Frequency Distribution of Participants in the Experimental and Control Groups

Total		Control		Based on cognitive-behavioral therapy		Groups
Percent	Frequency	Percent	Frequency	Percent	Frequency	Indices
0.100	45	3.33	15	3.33	15	Total

According to Table 3, a total of 45 participants enrolled in the study based on the inclusion and exclusion criteria. Participants were then randomly allocated to 3 groups, with fifteen participants (33.3%) assigned to the Cognitive-

Behavioral Therapy group, fifteen participants (33.3%) assigned to the Schema Therapy group, and fifteen participants (33.3%) allocated to the control group.

Table 4: Central Tendency and Dispersion Indices of Psychological Well-Being in Individuals with Panic Disorder across Groups

Shapiro-Wilk test		Post-test		Pre-test		Group	Variable
Significance level	w	SD	M	SD	M		
16.0	83.0	4.2	9.72	7.2	7.61	Cognitive Behavioral therapy	Psychological Well-Being
40.0	78.0	8.4	5.62	8.4	5.62	Control	

Table 4 presents the mean and standard deviation scores of psychological well-being at the pre-test and post-test stages by groups. Results indicate that the psychological well-being score of the cognitive-behavioral Therapy group increased from 61.7 to 72.9. The psychological well-being score of the

Table 5: The results of the between-group ANCOVA indicated a significant difference in psychological well-being between the experimental group (receiving cognitive-behavioral therapy) and the control group

control group was 62.5, indicating no change after the post-test. In addition, the normal distribution of the variables was examined using the Shapiro-Wilk test and was non-significant, indicating normal distribution of the variables ( $p > 0.05$ ).

Effect size	P	F	Mean squares	df	Sum of squares	Source	Dependent variable
54.0	001.0	9.14	82.60	1	82.60	Pre-test	Psychological Well-Being
			1.6242	1	1.5242	Group	
			4.41	27	1.1273	Error	
				30	2.6615	Total	

In Table 5, we displayed the analysis of covariance results to assess whether a difference exists between the experimental group (cognitive-behavioral therapy) and the control group following the post-test regarding psychological well-being in individuals with panic disorder.

## Discussion

The current study sought to assess the effect of cognitive-behavioral therapy (CBT) on psychological well-being in individuals diagnosed with panic disorder. The results indicated, at post-test, the analysis of covariance (ANCOVA) that assessed the differences of the experimental group (CBT) and control group on psychological well-being (in individuals who have panic disorder) demonstrates results that reveal a significant difference with the experimental group in psychological well-being as reflected in the F value and P value ( $P < 0.001$ ). In summary, cognitive-behavioral therapy statistically and meaningfully affects the psychological well-being of the subjects that were diagnosed with panic disorder. When applied to the comparison of hypotheses on the effect of cognitive-behavioral therapy on psychological well-being in patients with panic disorder, the results of this study are consistent with the findings of both domestic and worldwide researchers, such as Ghasemnejad et al. (2021), Naderi et al. (2022), Jillian (2022), and Kalti (2022), who all shared the same findings. Ghasemnejad and colleagues (2021) aimed to compare the effectiveness of cognitive-behavioral

Based on the F value and the P value, there is a significant difference between the experimental and control groups in psychological well-being ( $P < 0.001$ ). Thus, cognitive-behavioral therapy does significantly impact the psychological well-being of individuals with panic disorder.

therapy and training of diaphragmatic respiratory exercises on panic symptoms in women with asthma.

The findings of the research indicated that, in the post-test phase, cognitive-behavioral therapy had more of an effect than diaphragmatic breathing exercises in the follow-up phase on panic symptoms in women with asthma. Using interventions such as cognitive-behavioral therapy and lifestyle changes—the adaptation of regular physical activity in the ordinary lives of asthma patients—will play an adjunct role in reducing panic symptoms associated with asthma. In the research study conducted by Naderi et al. (2022), "A Comparison of the Effectiveness of Group Counseling Based on Reality Therapy and Schema Therapy Approaches on Self-Differentiation in Women with Dependent Features," an experimental methodology was employed while being marked as a pre/post-test methodological study with a control group. The study established that both therapies had a significant effect on self-differentiation at post-test and improved self-

differentiation in the experimental groups overtime. A comparative analysis of two group counseling methods concluded that schema therapy was more effective than reality therapy in enhancing self-differentiation. In addition, the results indicated that utilizing these approaches did not have a significant impact on emotional cutoff. The results were further discussed. Jillian (2022) conducted a study titled "Investigating the Effectiveness of Cognitive-Behavioral Therapy on Differentiation in Sexual Minority Women." Sexual minority women have increased risk for mental health problems when compared to heterosexual women. This study used qualitative data collected from 39 sexual minority women who disclosed symptoms related to depression, anxiety, suicidal ideation, and heavy alcohol use within the last three months. The results of this study indicated seven considerations for providing mental health services to sexual minority women: (1) paying attention to diverse sexual identities and expressions; (2) focusing on non-binary stressors; (3) conceptualizing gender-based stressors of sexual minority women in a feminist lens; (4) applying intersectional lenses; (5) incorporating issues of diversity, multiculturalism, and social justice; (6) examining the impact of trauma exposure; and (7) examining the impact of alcohol use on the lives of sexual minority women. These considerations were examined relative to their implications for clinical practice, with a specific focus on how to enhance the applicability of current cognitive-behavioral therapy (CBT) approaches to better meet the needs of this distinct group. The findings indicated that cognitive-behavioral therapy (CBT) has an impact on differentiation in women who are sexual minorities. Kalti (2022) conducted a study entitled "A Comparison of the Effectiveness of Cognitive-Behavioral Therapy and Acceptance and Commitment Therapy (ACT) in Treating Social Anxiety." A bibliographic search was conducted using PubMed, EMBASE, and Scopus from inception to February 3, 2022, for all studies that

evaluated the impact of Acceptance and Commitment Therapy on individuals classified as experiencing social anxiety but none with a comorbidity. Among the articles gathered, 11 satisfied the inclusion criteria. According to the reviewed research studies, Acceptance and Commitment Therapy (ACT) can therefore be thought of as a promising treatment for social phobia and/or distress tolerance based on its potential to improve attentional bias, awareness, emotion regulation, and safety/avoidance behaviors. All that said, studies have yet to demonstrate a consistent and reliable alternative to Cognitive Behavioral Therapy (CBT).

This study had some limitations. It is limited to women with diagnosed panic disorder who visited psychiatric specialty clinics in District 2 of Tehran in 2024. Therefore, caution should be exercised when generalizing to other women or cities. It was impossible to follow up with any of the samples due to the time-limited nature of this study. Consequently, the findings of this study are limited to the specific tools (questionnaires) that were utilized. Therefore, utilizing different tools may yield different results. Given the importance and uniqueness of this research topic, it would be wise to expand this study to include other populations. Additionally, future research should consider therapeutic approaches that are pertinent to the subject at hand. Lastly, it would be beneficial for upcoming studies to provide a more extensive literature review and incorporate a wider range of variables into the conceptual model. This way, the exploration of the relationships between different constructs can be much more in-depth. The study suggests that holding workshops could really help people with panic disorder by providing them with cognitive-behavioral therapy, which can enhance their psychological well-being. It's important for psychologists, psychotherapists, and other mental health professionals to embrace these cognitive-behavioral therapy approaches when working with individuals facing panic disorder.

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