

# Original Article: Investigating the Effect of Metacognitive Therapy and Cognitive Behavioral Therapy on Anxiety and Depression of Single Middle-Aged Men

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## ABSTRACT

The main purpose of this research is to investigate the effectiveness of metacognitive therapy and cognitive therapy on reducing depression and anxiety in single middle-aged men. This research is a field experiment. This plan is pre-test and post-test with control group. First, a number of unmarried middle-aged men, members of private associations, filled depression and anxiety questionnaires, and among them, 50 people with the highest levels of depression and anxiety were selected and randomly replaced in two groups. One group of unmarried middle-aged men were exposed to the experimental intervention and one group was considered as the control group. In general, based on the findings of the research, cognitive behavioral therapy group by improving symptoms and negative psychological reactions such as depression, feeling of loss, and loneliness can lead to an increase in men's hope, finding meaning in loss, reducing death, anxiety, and improving their attitude towards the future and yourself.

## Introduction

With the expansion and evolution of psychological treatments, metacognition therapy was also proposed by Adrian Wells. In the definition of metacognition, Wells states that metacognition is: "Knowledge about knowledge". Metacognition actually refers to a cognitive and conscious process, the subject of which is the review or control of cognition. Metacognition is a multidimensional concept

and includes beliefs, processes, and strategies that monitor and control cognition. Most cognitive activities depend on metacognitive factors. In fact, metacognitive factors control and monitor cognitive activities. Metacognition is one of the variables that is seriously damaged in many mental disorders such as anxiety disorders. In fact, there is a significant positive relationship between metacognitive beliefs and anxiety disorders. Metacognitive therapy has been used to treat many disorders: Depression and anxiety, emotional disorders (1-3), major

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depressive disorder, obsessive-compulsive disorder and many other disorders that the results show one of the positive effects of this treatment is reducing the mentioned disorders.

Concerning the positive effect of cognitive behavioral therapy on the reduction of anxiety and depression of middle-aged physically single men and the effect of metacognitive therapy on anxiety and depression and major depression, the question comes to mind whether metacognitive therapy reduces anxiety and does the depression of single middle-aged men have a physical effect? Therefore, the current research tries to answer the question: Is metacognitive and cognitive behavioral therapy effective in reducing depression and anxiety in single middle-aged men? [4-6].

### *Components of cognitive behavioral therapy*

People often have thoughts that reinforce wrong beliefs. Such beliefs can cause problematic behaviors that can affect many areas of life, such as family, romantic relationships, work, and college. For example, a person suffering from low self-esteem may have negative thoughts about their abilities and appearance. Due to these negative thinking patterns, that person may avoid accepting social situations or miss opportunities for advancement at work or school. To combat these destructive thoughts and behaviors, a cognitive therapist first helps the patient identify problematic beliefs. This step is known as functional analysis. It is important to learn how thoughts, feelings, and situations can contribute to aberrant behaviors [7].

This process can be difficult especially for patients who struggle with self-reflection, but it ultimately leads to self-discovery and insights that are an important part of the healing process. The second part of cognitive behavioral therapy focuses on the actual behaviors that are involved in this problem. The patient begins to learn and practice new skills that he can later use in real situations. For example, a person suffering from drug addiction begins to practice new skills to cope with addiction and learns ways to avoid social situations that can cause the return of that state

(addiction), avoid them, or deal with them. In most cases, cognitive behavioral therapy is a gradual process that helps a person to take incremental steps towards behavior change.

A person suffering from social anxiety first imagines himself in an anxiety-provoking social situation. In the next stage, the patient starts talking to friends, family, and acquaintances. By moving towards a bigger goal, it seems that this process is not so daunting and reaching the goals becomes easier. During the process of cognitive behavioral therapy, the therapist plays a very active role. Cognitive behavioral therapy is highly targeted and the patient and therapist work together as partners to achieve mutual goals. The therapist usually explains the details of the process and the patient is often given assignments to complete for the next session. Cognitive behavioral therapy is one of the most researched types of therapy, partly because it focuses on very specific goals and its results can be measured relatively easily [8-10].

### *Background research*

In a research, Wells *et al.* (2007) studied the effectiveness of metacognitive therapy on depressed people. This study was conducted as a single case on 4 people and with 3 to 6 follow-ups together. The results of this research indicated a significant improvement in depression symptoms and a reduction in rumination [11].

Also, the results obtained in the follow-up period were also continued. In the study of Wells, Fisher *et al.* using the multi-baseline A-B design, unmarried middle-aged men received six to eight weekly sessions of metacognitive therapy. Significant improvement was observed in depression, anxiety, and metacognitions. For example, the average score of the Beck depression questionnaire (BDI) before treatment was 23.35, which reached 6.5 after treatment, and the 6-month follow-up of all unmarried middle-aged men estimated the standard recovery criterion of the Beck depression scale. In a pilot study, Wells and King (2006) treated middle-aged unmarried men with generalized anxiety disorder based on QSM-IV stages 3 to 12 sessions of

metacognitive therapy, each session lasting 45-60 minutes. Pretreatment scores of unmarried middle-aged men on trait anxiety and worry scales were comparable to scores of unmarried middle-aged men in other pilot studies. All single middle-aged men improved during metacognitive therapy, and this improvement was striking and statistically significant, and at 6 and 12-month follow-up, 75% of single middle-aged men had maintained the recovery process [12].

Wells and Fisher (2008) followed a multi-baseline study by examining the effect of metacognitive therapy in unmarried middle-aged men with depressive disorder. The treatment was associated with a significant improvement in depression and anxiety symptoms, which were assessed by interviewer and self-assessment. Treatment resulted in significant reductions in rumination and maladaptive metacognitive beliefs. Using an official criterion to determine clinically meaningful change and recovery based on the Hamilton depression scale in the treated sample, 75% of unmarried middle-aged men recovered after treatment and 66% of them recovered completely after 6 months of follow-up [13].

In a research, Hashemi *et al.* (2010) investigated the effectiveness of metacognitive therapy on major depressive disorder. In this research, which was a case report type. Metacognitive therapy was performed on 3 patients with symptoms of depression, anxiety and rumination. The results of the research showed that metacognitive therapy is effective in treating depression. The research showed that metacognitive therapy caused significant changes in all three symptoms (depression, anxiety, and rumination) in all subjects [14-16].

In Hedayati's research (2005), which was conducted on three groups of 60 people, anxious, depressed, single middle-aged men, and normal people, it was found that people in the anxious group obtained higher scores than depressed middle-aged single men and non-diseased people in metacognition and worry. And the depressed group also showed higher scores in these criteria than non-sick people. A research was conducted as a comparison of the effectiveness of two metacognitive and cognitive-behavioral therapy methods in the treatment of students with epilepsy by Fereydoun Pakpour (2006). In this research, two metacognitive and cognitive-behavioral therapy methods were used separately, and metacognitive therapy method was more effective than the cognitive-behavioral therapy method in reducing metacognitive variables and thoughts and anxiety in unmarried middle-aged men with generalized anxiety disorder [17].

### Research plan

This research is a field experiment. This plan is pre-test and post-test with control group. First, a number of unmarried middle-aged men, members of private associations, filled depression and anxiety questionnaires, and among them, 50 people with the highest levels of depression and anxiety were selected and randomly replaced in two groups. One group of unmarried middle-aged men was exposed to the experimental intervention and one group was considered as control group. The following table shows the experimental design.

**Table 1:** Test plan

Random assignment	Group	Pre-test	Intervention	Post-test
R	Metacognitive	*	*	*
R	Control	*	-	*

As it can be seen in Table (1), subjects were randomly assigned to metacognitive treatment

and control groups. A pre-test was performed on both groups. One group received

metacognitive intervention and control group did not receive any intervention, and then both groups received a test.

### Statistical Society

The statistical population of this research included all unmarried middle-aged men.

### Sample size and sampling method

This research is available from the sampling method. First, a number of unmarried middle-aged men completed depression and anxiety questionnaires, and then 50 unmarried middle-aged men were randomly selected and replaced in two experimental and control groups as follows:

1- Metacognitive therapy group of 25 people and

2- Control group (without intervention) 25 people.

In addition, the minimum sample for experimental designs is 15 people (Delavar, 1999) and in this research, 20 people were selected in each group to increase credibility.

### Data analysis

**Characteristics of the subject:** The age range of the subjects of this research is between 30 and 45. The mean (and standard deviation) age of the metacognitive group subjects is (SD=13.764)  $\bar{x}$ =37.90 and the control group subjects' age is (SD=12.65),  $\bar{x}$  = 38.54. Other features are according to the following tables.

**Table 2:** Distribution of the frequency of education of experimental and control group subjects

Total		Control		Metacognition		Group
Percent	Abundance	Percent	Abundance	Percent	Abundance	
52.5	21	55	11	50	10	Diploma
7.5	3	5	1	10	2	Associate Degree
40	16	40	8	40	8	Bachelor's degree and higher

**Table 3:** Distribution of frequency and percentage of diabetes type (1 and 2) of experimental and control group subjects

Type 2 diabetes		Type 1 diabetes		Group
Percent	Abundance	Percent	Abundance	
70	14	35	6	Metacognition
75	15	25	5	Control
72.5	29	27.5	11	Total
20	4	40	6	Single

As it can be seen in Table (3), 27.5% of all subjects have type 1 diabetes and 72.5% have type 2 diabetes.

**Table 4:** Descriptive statistics of depression in the control and experimental groups in the pre-test and post-test

Post-test		Pre-test		Level
Standard deviation	Average	Standard deviation	Average	
9.76	29.12	9.43	27.90	Group
2.33	12.20	8.96	19.10	Control

According to the results of Table (4), in the control group, the mean post-test depression scores show an increase compared with the pre-test group. While in the experimental group, the post-test scores show a decrease

compared to the pre-test scores, and the total scores of experimental group are also lower than control group.

**Table 5:** The results of multiway analysis of variance (MANOVA) to determine the significance of the mean difference

The significance level	F	Average squares	Degrees of freedom	Sum of squares	Source of changes
0.001	643.48	48411.10	1	48411.10	Intercept
0.001	89.27	6716.11	1	6716.11	Test-control
0.001	25.23	1898.66	1	1898.66	Pre-test - post-test
0.001	72.81	5477.71	1	5477.71	Test-control with pre-test - post-test

According to the results of Table (5) and given that the significance level of MANOVA test error for 0.95 confidence level is less than 0.05 ( $P < 0.05$ ), it can be mentioned that there is a

significant difference between the depression of the group control and testing in pre-test and post-test scores.

**Table 6:** Descriptive statistics of anxiety in the control and experimental groups in the pre-test and post-test

Post-test		Pre-test		Level
Standard deviation	Average	Standard deviation	Average	Statistical indicators group
18.95	98.20	17.74	97.70	Control
7.02	32.40	19.59	98.70	Trial

According to the results of Table (6), in control group, the average scores of the post-test have increased compared to the pre-test group. While in experimental group, the post-test

scores show a noticeable decrease compared to the pre-test scores, and the total scores of the experimental group are also lower than control group.

**Table 7:** The results of multivariate analysis of variance to determine the significance of the mean difference

The significance level	F	Average squares	Degrees of freedom	Sum of squares	Source of changes
0.001	1953.47	534546	1	534546	Intercept
0.001	79.71	20995.20	1	20995.20	Test-control
0.001	79.09	21648.20	1	21648.20	Pre-test - Post-test
0.001	81.52	22311.20	1	22311.20	Test-control with pre-test-post-test

According to the results of Table (7) and concerning that the significance level of MANOVA test error for the confidence level of 0.95 is less than 0.05 ( $P < 0.05$ ). It can be

mentioned that there is a significant difference between the anxiety of control and experimental groups in the pre-test and post-test scores.

**Table 8.** Descriptive statistics of trait anxiety in the control and experimental groups in the pre-test and post-test

Post-test		Pre-test		Level
Standard deviation	Average	Standard deviation	Average	Statistical indicators group
19.99	48.50	19.26	47.83	Control
7.10	19.85	20.51	48.21	Trial

According to the results of Table (8), in the control group, the average scores of the post-test have increased compared to the pre-test group. While in the experimental group, the

post-test scores show a noticeable decrease compared to the pre-test scores, and the total scores of experimental group are also lower than control group.

**Table 9:** The results of multiway analysis of variance (MANOVA) test to determine the significance of the mean difference

The significance level	F	Average squares	Degrees of freedom	Sum of squares	Source of changes
0.001	414.78	126438.66	1	126438.66	Intercept
0.001	12.26	3739.78	1	3739.78	Test-control
0.001	11.77	3588.19	1	3588.19	Pre-test - post-test
0.001	12.93	3942.02	1	3942.02	Test-control with pre-test-post-test

According to the results of Table (9) and given that the significance level of MANOVA error for the confidence level of 0.95 is less than 0.05, it can be mentioned that there is a significant

difference between trait anxiety of the control and experimental groups in the pre-test and post-test.

**Table 10:** Descriptive state anxiety statistics of control and experimental groups in pre-test and post-test

Post-test		Pre-test		Level
Standard deviation	Average	Standard deviation	Average	Statistical indicators group
11.78	47.66	12.13	47.88	Control
11.57	12.55	11.21	51.47	Trial

According to the results of Table (10), in control group, the average scores of the post-test have not changed compared to the pre-test group. While in the experimental group, the post-test scores show a noticeable decrease

compared to the pre-test scores, and the total scores of experimental group are also lower than control group.

**Table 11:** The results of multivariate analysis of variance to determine the significance of the mean difference

The significance level	F	Average squares	Degrees of freedom	Sum of squares	Source of changes
0.001	1179.20	119141.07	1	119141.07	Intercept
0.001	46.04	4651.66	1	4651.66	Test-control
0.001	70.96	7169.37	1	7169.37	Pre-test - post-test
0.001	69.35	7007.50	1	7007.50	Test-control with pre-test-post-test

According to the results of Table (11) and given that the significance level of MANOVA test error for the confidence level of 0.95 is less than 0.05 ( $P < 0.05$ ). It can be mentioned that there is a significant difference between the state anxiety of the control and experimental groups in the pre-test and post-test scores.

## Discussion

The current research was carried out in the scope of metacognitive therapy with the aim of investigating the effect of metacognitive therapy on reducing depression and anxiety in single middle-aged men [18-20]. Cognitive behavioral therapy in the depression treatment is a type of psychotherapy that emphasizes the importance of impact of thoughts and feelings on behavior [21-23]. In cognitive behavioral therapy sessions, the psychologist asks the patient to focus on his thoughts, beliefs and attitudes and to understand the relationship between these categories and problematic behaviors [24]. In this way, clients can find healthy ways to manage troublesome emotions and feelings and difficult life situations. Cognitive behavioral therapy helps clients to lead a happy and satisfying life by changing their way of thinking and behavior. The findings of this research showed a statistically significant difference between the two experimental and control groups. ( $P < 0.05$ ) [25].

## Conclusion

Metacognitive therapy has been effective in reducing the depression of single middle-aged men. These results are in agreement with the findings of Pazak and Wells (2009) regarding the confirmation of metacognitive therapy on the depression reduction in middle-aged single men, Wells and Fisher (2008), Wells *et al.* (2007), and Hashemi *et al.* (2010). Metacognition is consistent with the reduction and treatment of depression. In this study, metacognitive therapy reduced the depression of unmarried middle-aged men. The result of this research showed a statistically significant difference between the two experimental and

control groups ( $P < 0.05$ ). In some cases, cognitive behavioral therapy is more effective than other psychotherapy approaches. Likewise, the combination of cognitive behavioral therapy and drug therapy is considered as a successful method to reduce the symptoms of patients. The results of clinical studies have always indicated that coping strategies of cognitive behavioral therapy increase the possibility of long-term recovery of patients. A comparative analysis of 53 clinical studies showed that cognitive behavioral therapy is an effective method for treating a wide range of addiction disorders such as alcoholism, drug abuse, nicotine addiction, and many other complications.

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