

Investigating the Effectiveness of Mentalization-Based Treatment on the Life Quality and Mental Status of Women with Hypothyroidism

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Abstract

Psychological problems and quality of life are two very important variables in hypothyroid patients. The purpose of this study was to investigate the effectiveness of mentalization-based treatment on mental status (depression and anxiety) and quality of life in women with hypothyroidism. This study was a semi-experimental type with a post-test-pre-test design and follow-up with a control group. The mental status and life quality of the participants were evaluated using the anxiety, depression, and stress questionnaire (DASS-21) and the short version of the World Health Quality of Life (WHO-QoL-BREF). 30 patients were selected and diagnosed with depression and anxiety by a fellow psychiatrist, and they were randomly divided into two groups of 15: test and control. Then the participants of the experimental group received mentalization therapy in 12 sessions of 90 minutes. In data analysis, analysis of variance with repeated measurements and LSD post hoc test were used. The findings of the research showed that the average pre-test depression and anxiety scores of the experimental group decreased in the post-test stage. Also, comparing before and after the intervention, the average scores of the quality of life dimensions of the experimental group, including mental health, physical health, environmental health, and social relations were increased. Therefore, MBT is effective in reducing anxiety and depression and increasing life quality in women with hypothyroidism ($P \leq 0.01$). According to the obtained results, it can be concluded that one of the effective educational approaches to help women with hypothyroidism is the mentalization approach, which can be used as a useful treatment model to prevent psychological disorders and improve the quality of life.

Keywords: Hypothyroidism, Life quality, Mental status, Women, Mentalization-based treatment

Introduction

Hypothyroidism is a clinical syndrome and one of the endocrine disorders that occurs as a result of thyroid hormone malfunction. The clinical spectrum of this disease is wide, in such a way that its prevalence varies from an asymptomatic disease to a severe disease with coma and myxodemia. It is also thought that thyroid hormones play an important role in changes in mental status. In particular, they affect mood [1-3]. Symptoms and signs of hypothyroidism in mental and physical conditions include depression, drowsiness, anxiety, fatigue, apathy, sexual reluctance, weight gain, and delayed tendon reflexes. Also, much evidence has shown irreversible nutritional, cardiac, renal, and muscular abnormalities due to thyroid hormone deficiency. Thyroid disorders in women are about ten times more common than men. Thyroid hormone deficiency causes various psychological disorders such as depression and anxiety and also affects people's quality of life and sleep [4-6].

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Many physiological pathways affect a person's mental state, which is often described as depression, anxiety, and stress. On the other hand, depression is one of the four major diseases in the public health of developing and developed countries. And the most common cause of disability is caused by diseases [7, 8]. In depression, a person feels sadness, lack of pleasure, and discouragement and cannot be happy. One of the most common psychological disorders studied in hypothyroid patients is depression [9-11].

Research has shown that suffering from depression can have negative effects on people's life quality. Life quality is a multidimensional concept that evaluates a person's physical, mental, and social health [12, 13]. Numerical evidence emphasizes the relationship between thyroid disorders and health-related quality of life [7, 8, 14]. Probably, the correct functioning of the thyroid plays a vital role in the stability of the mental state. On the other hand, hypothyroidism can have many negative effects on the quality of life and it is necessary to examine it according to the culture and context of societies [15, 16]. Today, societies want to improve life quality, and therefore governments in most parts of the world pay attention to improving the life quality of their people and try to reduce the incidence of disease and death caused by it [17, 18].

Considering the mentioned problems caused by hypothyroidism, finding a treatment method that can solve these problems is a very important priority. So far, according to the research background, various methods have been used to improve the mental state of general health and life quality. Methods such as the integrated approach of emotion-oriented reality therapy, therapy based on acceptance and commitment [11, 19], and cognitive behavioral therapy [20] are among these cases. Among the methods that can affect the mental state of patients with chronic disorders such as hypothyroidism, is the Mindfulness-Based Treatment (MBT) method invented by Fonagy and Bateman, which according to researchers' searches has been effective in reducing anxiety, depression, and stress and increasing the life quality of women with hypothyroidism have not been investigated [21].

MET is based on two main concepts: mentalization and attachment theory [22]. The main assumption is that the lack of mentalizing capacity leads to the development of psychological and mood problems. Mentalizing capacity is the ability to understand the mental states of oneself and others, which is obtained through interpersonal relationships during childhood, especially attachment relationships. Mentalizing is awareness of mental states and activities of oneself or other people, especially when it is used to explain behavior. This mental activity includes a person's ability to distinguish internal from external reality and internal emotional and mental processes from interpersonal events [23]. The therapist's awareness of the primary states of thinking (non-mentalizing states), i.e. mental equivalence state, rationalization state, and pretend state is a basic principle in this treatment. Also, the therapist must carefully control the levels of arousal, because both interfere with mentalization and if the therapist's mentalization is compromised, it will not be possible to provide effective treatment [24]. Initial evaluations have shown that this approach can be helpful for a wide range of people's existing problems, including mental disorders (such as stress, anxiety, and depression) [23-25].

Now, due to the importance of the topic, identifying and introducing effective treatment methods to improve mental status and life quality in chronic patients, including hypothyroidism, is of interest to researchers. Therefore, it seems that investigating the effect of treatment based on mentalization on mental status and life quality in women with hypothyroidism can provide useful results for health professionals and crises caused by diseases related to the individual and improve peace. To help improve and increase the life quality of patients in a stressful environment. Therefore, this research was conducted to determine the effectiveness of treatment based on mentalization on mental status and life quality in women with hypothyroidism.

Materials and Methods

The present study is semi-experimental. The implementation method was that first, one center was randomly selected among the medical centers, and then among the women with hypothyroidism referred to this center, who had been diagnosed by an endocrinologist and were under drug treatment. 100 people were selected and to screen and identify hypothyroid women with depression and high anxiety, the DASS questionnaire was provided to them. From these (whose score in the questionnaire was above the cut-off point of 12) taking into account the criteria for entering the research, select 30 people and then randomly divide them into two groups. In this study, based on the logic proposed by Cohen (1986), assuming that $\alpha = 0.05$ and the effect size equal to 0.50 to achieve the power of the statistical test equal to 0.90, for each of the control and experimental groups. A sample of 15 participants was selected. Inclusion criteria included female gender, age range from 20 to 60 years, at least diploma education, willingness to participate, obtaining a score higher than 12 of the depression and anxiety subscales (DASS-21), and not simultaneously participating in other psychological interventions. Nair's exit criteria included unwillingness to cooperate and the absence of more than two meetings. The research tool for collecting information was the following questionnaires:

The Depression, Anxiety, and Stress Scale (DASS), which is a self-report instrument that shows recent mental status and mood changes, was first presented by Lovibond in 1995. This questionnaire contains 21 items that check whether the respondent has experienced depression, anxiety, and stress several times in the last week. This questionnaire has three components and there are 7 items for each. Its Likert options are scored from zero to three.

The highest score in each of the sub-groups is 21, after which to compare the scores with the long form of the questionnaire, the total score of each sub-scale should always be multiplied by 2 before being recorded in the complete DASS form. The reliability of this questionnaire based on Cronbach's alpha is reported as 0.95 for depression, 0.90 for anxiety, and 0.93 for stress [26]. It should be noted that only two components of depression and anxiety were examined in the present study.

To measure the life quality index, the World Health Quality of Life Questionnaire (WHO-QoL-BREF) was used. This questionnaire contains 26 items. Individual items are rated on a 5-point Likert scale, where 1 represents the least negative score and 5 represents the most positive score. The score range of the questionnaire is from 26 to 130. In this questionnaire, domain scores are scaled positively, and the higher the score, the higher the life quality. Mindfulness-based training means a person's participation in 12 sessions of 90 minutes for approximately two months of group training based on MBT [22] for the experimental group. After one month of the post-test, all the participants were assessed using the DASS and WHO-QoL-BREF questionnaires for the follow-up phase, and after completing the three assessment stages to comply with ethical considerations, training MBT was administered intensively for the control group. In the current study, repeated measurement analysis of variance and LSD post hoc tests were utilized to analyze the data.

Results and Discussion

In the two experimental and control groups, the age range of the sample members was between 21 and 58 years, the average age of the experimental group participants was 41.29 ± 9.33 and the average age of the control group participants was 45.23 ± 8.28 . Among the 15 participants in the experimental group, 6 (40%) have diploma and postgraduate education, 8 (53.33%) have bachelor's and postgraduate education, and 1 (6.67%) had doctorate level education. Also, among the 15 participants in the control group, 5 (33.33%) had diploma and postgraduate education, and 10 (66.67%) had bachelor's and postgraduate education. In terms of occupation, among the 15 participants in the experimental group, 8 people (53.33%) are housewives, 4 people (26.67%) are employees, and 3 people (20%) have freelance jobs such as tailoring, hairdressing, and other cultural and artistic activities were. While in the control group, 10 people (66.67%) were housewives, 4 people (26.67%) were employees, and 1 person (6.67%) had freelance jobs. In both control and experimental groups, most of the participants were married and had 1-2 children. In terms of duration of hypothyroidism among 15 participants in the experimental group, 3 (20%) for less than 5 years, 3 (20%) between 5 and 10 years, 7 (46.67%) between 10 and 15 years old, and 2 people (13.33%) were over 15 years old who were diagnosed with hypothyroidism and were taking Levothyroxine for treatment. Among the 15 participants in the control group, 5 people (33.33%) for less than 5 years, 4 people (26.67%) between 5 and 10 years, 6 people (40%) between 10 to 15 years, and 1 person (6.67%) was over 15 years old who was diagnosed with hypothyroidism and was taking Luthyroxine for treatment. **Table 1** shows the mean and SD (standard deviation) of the scores of the control and experimental groups in the mental state variables of anxiety, depression, and life quality in the post-test, pre-test, and follow-up stages.

Table 1. Mean and SD (standard deviation) of mental state and life quality scores in two control and experimental groups.

Variable	Group	Pre-test		Post-test		Follow up		
		Mean	SD	Mean	SD	Mean	SD	
Mental state	Depression	Experimental	32.00	4.66	24.00	3.20	22.13	4.44
		Control	31.47	4.44	30.80	3.60	31.20	3.09
	Anxiety	Experimental	35.33	4.25	31.73	4.46	30	6.05
		Control	35.07	3.53	36.00	3.78	35.73	3.99
Quality of life	Physical health	Experimental	39.82	6.10	44.11	6.87	47.73	5.45
		Control	37.97	5.99	38.14	6.64	38.39	5.45
	Psychological health	Experimental	44.53	6.81	50.87	6.55	53.53	6.07
		Control	42.80	6.04	42.13	6.17	43.07	6.15
	Social relations	Experimental	32.20	5.97	36.33	5.06	39.00	5.96
		Control	29.60	4.06	29.93	4.83	30.00	4.65
	Environmental Health	Experimental	45.47	5.21	49.00	5.32	53.67	6.37
		Control	47.00	5.61	47.67	5.01	47.87	5.40

The participants in the research were all female in terms of gender, and in terms of the type of disease, they were suffering from hypothyroidism and all of them were using Luthyroxine drugs for the treatment of the disease. According to the data in **Table 1**, the average scores of mental state (depression and anxiety) and quality of life in the post-test stage compared to the pre-test stage have changed in the experimental group. This trend of decreasing anxiety and depression variables, and increasing quality of life has continued in the follow-up phase as well. One of the presuppositions for variance analysis with repeated measurements is the equality of covariance of the dependent variables, which was evaluated using Machli's test of sphericity. The results of this test indicated that the assumption of the sameness of covariances of mental state of depression and anxiety and quality of life was not confirmed ($P < 0.05$). So it is necessary to adjust the significance level; therefore, the Greenhouse-Geisser coefficient should be used. In the following, the results of between-group and intra-group variance analysis to determine the effectiveness of MBT on mental status and life quality in women with hypothyroidism with three measurements of post-test, pre-test, and follow-up are presented in **Table 2**.

Table 2. The results of the analysis of variance between and within the group with repeated measurements three times of measuring the scores of mental state and life quality in the control and experimental groups.

Variable	Source (Geisser Greenhouse Coefficient)	Sum of squares	Degree of freedom	Mean square	F	P-value	Eta squared	Statistical power	
Mental state	Depression	Within the group	449.867	1.629	276.216	30.941	0.0001	0.252	0.999
		Between groups	377.689	1.629	231.899	25.976	0.0001	0.481	0.999
		Error	407.111	45.603	8.927	-	-	-	-
	Anxiety	Within the group	82.222	1.634	50.319	10.511	0.0001	0.273	0.967
		Between groups	146.756	1.634	89.813	18.761	0.0001	0.401	0.999
		Error	219.022	45.752	4.787	-	-	-	-
Quality of life	Physical health	Within the group	64.267	1.348	47.685	20.795	0.0001	0.426	0.999
		Between groups	45.867	1.348	34.032	14.841	0.0001	0.346	0.987
	Psychological health	Within the group	80.022	1.396	57.314	45.45	0.0001	0.619	0.999
		Between groups	58.689	1.396	42.034	33.340	0.0001	0.544	0.999
	Social relations	Within the group	42.156	1.621	26.012	34.268	0.0001	0.550	0.999
		Between groups	23.400	1.621	14.439	19.022	0.0001	0.405	0.999
	Environmental Health	Within the group	37.489	1.114	33.650	9.936	0.0003	0.262	0.887
		Between groups	48.867	1.114	43.863	12.952	0.0001	0.316	0.952

Based on **Table 2** and the significance of the factors within the groups, the existence of a significant difference between the post-test, pre-test, and follow-up measurements for the mental state variables of depression and anxiety, and life quality is confirmed ($P < 0.005$). Also, the results of this table at the intergroup level indicate that there is a significant difference between the two control and experimental groups for the mental state of depression and anxiety, and the quality of life in all dimensions ($P < 0.001$). The results of pairwise comparisons of the average scores of the mental state in the three stages of the test show that the difference between pre-test and post-test, pre-test and follow-up, and post-test and follow-up stages is significant ($P < 0.05$). The results of pairwise comparisons of the average differences in the dimensions of physical, psychological, social relations, and environmental health of the quality of life, in three stages of the test show that the difference between the stages of pre-test and post-test, pre-test, and follow-up, and post-test and follow-up in All dimensions are significant ($P < 0.05$).

The present study aimed to specify the effectiveness of mentalization-based treatment on mental status and life quality in women with hypothyroidism. The results revealed that MBT was effective in decreasing anxiety and depression and improving life quality among women with hypothyroidism. In this context, no similar study was found with the conducted investigations to examine the consistency of the results of this study, but indirectly, we can refer to studies that are somewhat consistent with the components of depression and anxiety. In this context, Hayden *et al.* [27] reached a similar conclusion that MBT reduces interpersonal stress by increasing concentration. Vogt and Norman [28] stated in another study [24] that the therapeutic approach of MBT can reduce depression, anxiety, psychological distress, self-harming behaviors, and suicidal tendencies are useful.

In explaining the effectiveness of MBT on decreasing depression in women with hypothyroidism, it can be pointed out that mentalization helps a person to understand misunderstandings by re-understanding their own and other's mental states. A depressed person overestimates his automatic hypotheses and his thoughts and considers them equal to reality (theological mode or rationalization) [28]. In general, based on the conducted research, attention bias toward negative stimuli and negative interpretation of social stimuli, containing other people's mental states, are features of depression [29].

In this research, during the interventions presented, the problems of mind reading and how to deal with them were explained to the patients. A person becomes more sensitive to non-verbal cues that refer to the intentions of others and is not solely focused on appearance. Therefore, repeating and practicing the above training has been able to help increase curiosity, reduce mind reading, and thus reduce the symptoms of depression in these people. Also, in another explanation, we can mention the effect of projecting and expressing mental challenges in reducing depression. In the present study, during the treatment sessions, women with hypothyroidism, in the presence of other participants, recounted their health-related concerns in the context of their disease, which seems to have helped to relieve negative emotions and reduce depression symptoms. It has been effective.

In explaining the effectiveness of MBT in reducing patients' anxiety, it is also possible to mention the effect of direct training provided in the field of anxiety and anxiety reduction strategies in these people. In the present study, during the third to tenth sessions, education about anxiety and various types of anxiety disorders was provided to the patients, and they were taught effective treatment strategies to recognize and reduce anxiety and regulate strong main emotions. During the intervention sessions, the therapist first explains to the patients that the most important reason for weak mentalization is the activation of strong emotions, and as long as the emotions are strong, the person's ability to mentalize decreases and may even disappear completely. MBT has improved the life quality in the participants of the experimental group compared to the control group. Investigations to find studies consistent with this result showed that so far, limited studies have indirectly investigated the impact of MBT on the life quality of other disorders; among them, we can refer to the study of Ghanbari *et al.* [25] who examined children with ADHD.

In explaining the impact of MBT on increasing the life quality of the participants in this research, it can be said that providing training on the importance of establishing relationships with others and encouraging people to engage in group activities has been able to improve social relations in patients and in this way help to improve the agency in life and the quality of social relations as one of the dimensions of the life quality in them. On the other hand, establishing empathic relationships between clients and therapists is one of the other factors that seems to be effective in improving social relationships and environmental health, and subsequently improving the quality of life. In addition, since one of the important factors in decreasing the life quality in people with chronic diseases such as hypothyroidism is facing many conflicts and challenges in physical and psychological fields, so it seems logical that this educational method can help reduce conflicts and improve the life quality of patients.

Conclusion

The purpose of this study was to investigate the effectiveness of mentalization-based treatment on mental status (depression and anxiety) and quality of life in women with hypothyroidism. The findings of the research showed that the average pre-test depression and anxiety scores of the experimental group decreased in the post-test stage. Also, comparing before and after the intervention, the average scores of the quality of life dimensions of the experimental group, including mental health, physical health, environmental health, and social relations were increased. Therefore, MBT is effective in reducing anxiety and depression and increasing life quality in women with hypothyroidism. According to the obtained results, it can be concluded that one of the effective educational approaches to help women with hypothyroidism is the mentalization approach, which can be used as a useful treatment model to prevent psychological disorders and improve the quality of life.

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