

Psychological interventions for decreasing anxiety in people with multiple sclerosis (MS): A systematic review

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ABSTRACT

Objective. Multiple sclerosis (MS) has unpleasant psychological consequences including anxiety and it has been accompanied with physical harms. According to this, the current study was conducted with the purpose of reviewing psychological interventions for decreasing anxiety in people with multiple sclerosis (MS).

Materials and methods. This study was conducted by using a systematic review in researches published from January 2012 to November 2022. Indexing databases as PubMed and Scopus, Google Scholar were examined. For searching articles, the words as multiple sclerosis, psychological interventions, psychotherapy, anxiety, psychology, clinical trials and randomized clinical trial were examined. Eventually, 16 articles were analyzed.

Results. The results demonstrated that cognitive behavioral therapy (CBT), mindfulness, acceptance and commitment therapy (ACT) have considered as the most practical therapeutic methods in treating anxiety in patients affected by MS. Moreover, the results showed that dialectical behavior therapy (DBT), Mindfulness-integrated cognitive behavior therapy, Logotherapy and internet-based cognitive behavioral therapy (ICBT) and self-management have had an influential role in decreasing the anxiety of these patients.

Conclusion. According to this, it can be concluded that cognitive behavioral therapy (CBT), mindfulness, acceptance and commitment therapy (ACT) have been placed in the first line of treatment for the treating anxiety in patients affected by MS. Therefore, it is suggested to implement these interventions owning to improve the psychological health of these patients.

Keywords: multiple sclerosis, anxiety, psychological interventions

INTRODUCTION

Multiple sclerosis (MS) is a chronic autoimmune disease of the central nervous system that in terms of clinically has accompanied with relapse and progressive loss of neurological function [1]. Moreover, this disease is deemed as the most common inflammatory disease of the central nervous system in young people that may lead to progressive disability [2] thereby affects all aspects of life of patients affected by MS including employment, communications, leisure time and daily activities [3]. The symptoms as spasm, pain, fatigue, cognitive disorder, bladder and bowel problems, walking disorder,

mood disorder, and sleep disorder are seen in these people [4]. In as much as the cause of this disease is unknown, the people affected by MS take medicine and receive treatment in order to decrease symptoms, improve performance and prevent from new attacks [5].

It has been estimated that 2.800-million people have been affected by MS throughout the world that the global prevalence has reached 35.9 people per 100,000 individuals in 2020. The diagnosis of this disease is increasing in children under 18 years significantly [6]. With regard to the findings, this disease is more common in women [7]. The rate of MS in some provinces of Iran including Isfahan 93.6,

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Chaharmahal and Bakhtiari 92.7, Fars 77.3, Tehran 74.3, Qom 50.4 and in Gilan province 35.9 has been reported on the basis of per 100,000 people [8]. According to a study conducted in 2021, the process of MS disease in Iran was increasing before 2011, and in recent years, a stable incidence rate of this disease has been reported [9].

Patients affected by MS experience high levels of stress, perceived lack of control, helplessness, and anxiety owing to the unpredictability of their disease [10]. Moreover, some physical problems cause relapsing into psychological symptoms in these people that these symptoms include fatigue, disability, experiencing family and work problems and social life [4]. Furthermore, the indication of fatigue in 51 to 90 percent of patients has been reported [11]. Anxiety, depression, fatigue and pain are considered as common disorders among patients affected by MS [12]. The more people experience fatigue, the more they have depression [11]. Moreover, these people have disorder concerned with their emotional regulation [13].

Apart from the fact that MS disease affects people's physical functions, it also causes cognitive disorders, fatigue, depression and anxiety to be emerged [14]. Anxiety is one of the common factors in patients with MS that affects their quality of life and physical activity [15]. The prevalence rate of anxiety and depression disorders varies from 14% to 54% in patients affected by MS, that can be owing to methodological issues including the differences existed in definitions, tools and applied diagnostic criteria and the type of population which has been placed under examination [16]. A study conducted in Iran in 2020 concluded that there is a significant relationship between the economic status of patients with MS and their anxiety [17].

With regard to the prevalence of anxiety and depression disorders in patients affected by MS, there is a risk of committing suicide in these people as well. In a study conducted in 2022, the positive and significant effects of dialectical behavior therapy on anxiety and depression in these people have been shown [13]. Moreover, people affected by MS have less physical activity compared to normal people; Furthermore, doing Pilates paves the way for improving anxiety, depression and fatigue in these people [18]. These patients experience more death anxiety than normal people on account of the relapsing nature of MS. The results of the studies demonstrated that meaning therapy and treatment based on acceptance and commitment are considered as the effective treatments for patients with MS as they decrease anxiety in these people [19]. About 70% of patients with MS report sleep disorders that cognitive behavioral therapy for treating insomnia resolves this problem abundantly [20].

According to the discussed topics, MS disease has an influential role in decreasing the psychological health and quality of life of these people. Previous studies point out that anxiety and depression symptoms are increasing in these patients. Therefore, multifarious psychological interventions have been provided for improving the psychological condition of these people. The purpose of this study is to review previous studies and examine efficient psychological interventions in decreasing the anxiety in these patients.

MATERIALS AND METHODS

This study was conducted by using a systematic review in researches published from January 2012 to November 2022. Indexing databases as PubMed and Scopus, Google Scholar were examined. For searching articles, the words as multiple sclerosis, psychological interventions, psychotherapy, anxiety, psychology, clinical trials and randomized clinical trial were examined. In order to examine the keywords precisely, each of the keywords were searched in a combined way along with Multiple Sclerosis and eventually 2400 articles were discovered and the searched keywords existed in the title or in the content of the article. The titles of the articles and abstracts were examined by two researchers, and so many articles were excluded from examining owing to repetitiveness, disconnectedness, and absence of receiving the inclusion criteria and eventually, 16 articles were selected and a review policy was conducted upon them. Publishing articles in a determined period of time, publishing in to English language, and implementing interventions upon patients with MS had been considered as the inclusion criteria in the articles. Qualitative articles, case reports and series and articles based on pharmaceutical and medical interventions had been deemed as exclusion criteria. In order to examine the articles, the standard review framework concerned with articles in the domain of health [21] and the approach of Sidant and Braden in examining and evaluating behavioral interventions [22] were applied. For implementing the review analysis of the articles, the indexes related to the last names of the authors and the year of publication, the type of intervention or theoretical framework, the country selected for implementing the research, the number of participants in the study, the method of applying the intervention and the result or outcome of the study were considered.

RESULTS

In this part, 16 articles were examined that in each of them, psychological interventions have been examined with the purpose of decreasing anxiety in

TABLE 1. The characteristics of the analyzed articles

Authors and years	Intervention/s	Country	Participants	Design	Follow-up	Consequences
Hughes et al., (2022) [13]	1- DBT	USA	DBT (n=20) Control (n=20)	Randomized controlled trial	26 weeks	Stress and anxiety symptoms decreased in experimental group.
Fleming et al., (2021) [18]	1- Home-based Pilates	Ireland	1 Home-based Pilates (n=80)	Randomized controlled trial	8 weeks	Depression and anxiety symptoms decreased significantly.
Lotfifard et al., (2021) [19]	1- LT 2- ACT	Iran	ACT (n=16) LT (n=16) Control (n=16)	Pilot randomized controlled trial	3-month	The results showed that two treatments have been effective in decreasing death anxiety.
Siengsukon et al., (2020) [20]	1- CBT-I 2- Brief Education	USA	CBT-I (n=12) Brief Education (n=11) Control (n=10)	Randomized controlled trial	No	The results showed that CBT-I has been effective in decreasing anxiety.
Öz H and Öz F (2020) [23]	psychoeducation program	Turkey	Intervention (n=40) Control (n=40)	Interventional design	3-month	Anxiety and depression symptoms decreased significantly.
Kiropoulos et al., (2020) [24]	1-CBT 2-SL	Australia	CBT: (n=30) SL: (n=30)	Randomized control trial	8 and 20 weeks	Cognitive behavioral therapy shows a reduction in the rate of depression and anxiety.
Nazari et al., (2020) [7]	1-UP 2-TAU	Iran	UP (n=32) TAU (n=32)	Randomized control trial	3-month	It has been effective on anxiety and depression to a great extent.
Pouyanfard et al., (2020) [25]	MICBT	Iran	MICBT (n=10) Control(n=10)	Randomized clinical trial	2-month	Depression and anxiety symptoms decreased significantly.
Lee et al., (2017) [26]	Multimodal, Nonpharmacologic Intervention	Canada	Intervention (N=19)	Quasi-experimental	6-month	The results showed improvement in depression and anxiety.
Chobe et al., (2016) [27]	IYP	Germany	IYP(n=11)	Randomized control trial	No	The results showed reduction in depression and anxiety.
Khayeri et al., (2016) [28]	FHM	Iran	FHM (n=70) Control (n=70)	Clinical trial	3-month	The results showed that FMH has been effective on anxiety to some extent.
Kiropoulos et al; (2016) [29]	CBT	Australia	CBT (n=15) TAU(n=15)	Randomized control trial	20 weeks	Early CBT treatment has been effective on depression and anxiety.
Bogosian et al., (2016) [30]	Mindfulness	UK	Intervention (n=19) Control (n=21)	Randomized trial	3- month	A considerable reduction in anxiety, depression, fatigue and pain was observed.
Pilutt et al., (2014) [31]	Behavioral intervention	USA	Intervention (n=41) Control (n=41)	Randomized controlled trial	3-month	Significant changes in depression and anxiety were observed.
Morris et al., (2012) [32]	Internet CBT-based self-management	UK	Intervention (n=23) Control (n=17)	Randomized controlled trial	10 weeks	The results showed significant effects on depression and anxiety.
Nordin, and Rorsman (2012) [33]	1-ACT 2-RT	Denmark	ACT group (n=11) RT group (n=10)	Randomized controlled	3-month	RT caused significant reduction to be appeared in depression.

Note: DBT = dialectical behavior therapy; LT= logotherapy; ACT = acceptance and commitment therapy; CBT-I = cognitive behavioral therapy for insomnia; CBT = cognitive behavioral therapy; SL = supportive listening; UP = Unified Protocol; TAU = treatment-as-usual; MICBT = Mindfulness-integrated cognitive behavior therapy; IYP= integrated yoga and physical therapy; FHM= Fordyce Happiness Model therapy; RT= relaxation training

patients affected by MS. In Table 1 the characteristics of these studies as authors' names, type of intervention, country, participants, research design, following-up and results have been presented.

According to the results obtained from Table 1, cognitive behavioral therapy (CBT) [29,24], then mindfulness [30], acceptance and commitment therapy (ACT) [19,33] have been considered as the most

practical therapies in treating anxiety in patients affected by MS. Moreover, the results showed that dialectical behavior therapy [13], mindfulness-integrated cognitive behavior therapy [25], logotherapy [19] Internet CBT-based self-management [32] have had an effective role in decreasing the anxiety in these patients.

DISCUSSION AND CONCLUSION

The purpose of this current study was to review psychological interventions in decreasing anxiety in people with multiple sclerosis (MS). The results showed that cognitive behavioral therapy (CBT) has had an effective role in decreasing the anxiety in these patients. One of the most effective non-pharmacological treatments for controlling depression and anxiety is cognitive behavioral therapy [34] that helps people manage challenges through identifying inefficient thoughts and beliefs [29]; Moreover, it examines the situations that paves the way for emerging negative emotions and eventually anxiety and introduces behavioral activation, and these tasks include physical activity based on mindfulness, relaxation, progressive muscle relaxation, music and sleep hygiene [24]. Furthermore, in this treatment, the therapist identifies the clients' cognitive distortions and informs the clients about the inefficiency of their beliefs through cognitive techniques [35].

Other results showed that mindfulness and combined treatments based on it have had an effective role in decreasing the anxiety in these patients. Considering the importance of the role of mindfulness in decreasing anxiety, it can be said that mindfulness as a state of mind refers to the individual's awareness on the present moment without giving a judgment [36] that its training causes patients with MS accept the feelings and experiences that create within them as they affected by this disease [30] and accepting these feelings paves the way for decreasing excessive attention to the problem as well as reducing feelings of guilt, low self-esteem and worth-

lessness in these patients [37] exercises like body inspection and positive re-evaluation causes the person's thoughts, emotions and awareness to be decreased before his disability status, and therefore, it can be influential in decreasing negative psychological consequences including anxiety and depression [25].

Other results showed that acceptance and commitment therapy has had an effective role in decreasing the anxiety in these patients. ACT is a psychological treatment and acknowledged that people must learn to accept unwanted painful thoughts and feelings in order to commit to the actions which are consistent with their values in spite of these painful experiences [38]. ACT intervention has been based on 6 main processes: discharge, acceptance, mindfulness, values, self- as-context and committed action [33]. Indeed, the aim of this therapeutic approach is to improve patients' performance through improving their psychological flexibility in order to experience a better feeling [19]; and eventually have less anxiety [33] and this could be owing to the fact that acceptance and commitment therapy considers the nature of human suffering as an important and significant issue [33].

With regard to the prevalence of anxiety disorders in chronic diseases, including multiple sclerosis, has been most effective and practical in decreasing the anxiety in these patients according to the conducted researches and investigations as CBT, ACT, and mindfulness treatments. It is suggested that these psychological interventions that have positive consequences on physical health and mental flexibility and subsequently on their anxiety due to improving the psychological health and mental well-being in patients. Among the limitations of the current study was lack of access to some indexing databases and absence of access to the full text of some articles. Moreover, in some studies, there was no precise and complete information about the methodology and type of intervention, consequently, they were eliminated from the review cycle.

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