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Research Article

Effectiveness of Cognitive Behavioral Therapy on Anxiety, Lifestyle, and Experiential Avoidance in Patients with Meniere's

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Abstract

Objective: Patients with Ménière's often experience multiple psychological problems and are not satisfied with the results of medication therapy. This study aimed to evaluate the effectiveness of cognitive-behavioral therapy (CBT) on anxiety, lifestyle, and experiential avoidance in patients with Ménière's disease.

Method: The study employed a quasi-experimental design with a pre-test, post-test, and one-month follow-up approach. The statistical population comprised all patients diagnosed with Ménière's disease who sought treatment at the specialized ear clinic affiliated with Mashhad Medical Sciences Hospital between January and March 2023. From this population, 30 patients meeting the inclusion criteria were selected using an oriented sampling method. Participants were randomly assigned to a CBT intervention group (n = 15) and a control group (n = 15). Data collected at three time points—pre-intervention, post-intervention, and 30 days after the intervention—using the Smith Lifestyle Questionnaire, Bond Experiential Avoidance Questionnaire, and the Anxiety subscale of the DASS-21. The data were analyzed using repeated measures analysis of variance.

Results: The results indicated a significant reduction in anxiety levels in the CBT group compared to the control group in both the post-test and follow-up assessments ($P < 0.05$). Additionally, a significant improvement was observed in lifestyle scores in the CBT group relative to the control group ($P < 0.05$). The difference in experiential avoidance between the two groups was also statistically significant ($P < 0.05$).

Conclusion: The findings suggest that cognitive-behavioral therapy is effective in reducing anxiety and experiential avoidance while improving lifestyle in patients with Ménière's disease. These results underscore the potential of CBT as an adjunctive treatment in managing the psychological and lifestyle-related challenges associated with Ménière's disease.

Keywords: Anxiety, CBT, Health, Experiential Avoidance, Lifestyle.

Extended Abstract

Background and Objectives

Ménière's disease significantly impairs quality of life, mainly due to the unpredictability and intensity of its symptoms, which often provoke severe anxiety. Heightened anxiety can further exacerbate avoidance behaviors, creating a cycle that reduces social participation and impairs quality of life. This reciprocal relationship between anxiety, avoidance, and poor health behaviors underscores the importance of integrative psychological interventions. Various psychological models aim to address the maladaptive cognitive and emotional mechanisms associated with chronic illnesses, with CBT standing out as one of the most empirically supported approaches. The current study, therefore, aims to evaluate the efficacy of CBT in improving lifestyle, reducing anxiety, and decreasing experiential avoidance in individuals diagnosed with Ménière's disease.

Materials and Methods

The research employed a quasi-experimental design with a pre-test, post-test, and one-month follow-up, including a control group. Thirty patients aged 18–50 years were recruited using a convenience sampling method from individuals attending the clinic. Inclusion criteria: Participants were required to have a definitive diagnosis of Meniere's disease by an otolaryngologist, be aged 18–50 years, and have at least a middle school education.

Exclusion criteria: drug or alcohol addiction, hearing impairments unrelated to Meniere's disease, or chronic illnesses other than Meniere's disease. Participants were also excluded if they missed more than two sessions or decided to discontinue participation.

Participants were randomly assigned to two groups, each consisting of 15 individuals. Standardized questionnaires were administered at three time points: before the intervention, immediately after the intervention, and 30 days following the intervention. Participants were randomly assigned to two groups, each consisting of 15 individuals. The study was approved by the Islamic Azad University of Sari (IR.IAU.SARI.REC.1402-92). All study participants provided written consent before inclusion in the study. The study adhered to the principles outlined in the Declaration of Helsinki (2013).

The study employed validated instruments for data collection, including the Depression, Anxiety, and Stress Scale (DASS-21), the Acceptance and Action Questionnaire-II (AAQ-II), and the Miller and Smith Lifestyle Questionnaire (1988). Cognitive behavioral intervention was conducted for eight sessions, each session lasting 90-120 minutes. Sessions were held twice a week. Sessions were developed based on the workbook. Each session began with an introduction, a review of homework, and feedback, continued with the main exercise, and concluded with a summary and additional feedback. These sessions were conducted by a specialist with more than ten years of experience in the field of cognitive behavioral therapy.

In this study, SPSS 25 software was used for statistical analysis of the data. For this purpose, in addition to descriptive statistics such as frequency tables, mean, and standard deviation, the ANOVA-RM method with repeated measures was used.

Results

The mean and standard deviation of the age of the participants in the CBT group were 34.21±4.19 and 36.50±4.9 in the control group (P=0.34, t=0.93). Most of the participants held a high school diploma and were

married. The results of the chi-square test showed that there was no significant difference between the two groups in terms of gender, education, and marital status. The results of the t-test analysis showed that there was no significant difference between the two groups in terms of average duration of illness (P = 0.89, t = 0.43). The interaction effect of group × time, as well as the main effects of time and group, for the variables of experiential avoidance, anxiety, and lifestyle, is significant at the 0.001 level. These findings indicate that cognitive behavioral therapy was significantly effective. The effect size of the intervention group compared to the control group for the variables of experiential avoidance, anxiety, and lifestyle was 0.17, 0.31, and 0.39, respectively. According to the results obtained in the post-test table, the changes in lifestyle scores (3.81), anxiety (3.31), and experimental avoidance (2.59) between the two groups showed significant differences at the 0.05 level. Additionally, changes in lifestyle, anxiety, and experimental avoidance scores over time, from pre-test to post-test and from pre-test to follow-up, were significant at the 0.001 level.

Discussion and Conclusion

Additionally, this study lacked an active or placebo control group, which could have influenced the results obtained. It is suggested that placebo groups be used in future studies to compare effectiveness. In addition, according to the findings obtained, it is suggested that the cognitive behavioral therapy approach be used to increase the quality of life of patients with chronic ear problems. Finally, a lifestyle assessment was conducted using a foreign questionnaire. While this instrument was validated in Iran, cultural differences, particularly between Iranian and Western lifestyles, may have influenced the results. It is recommended that a lifestyle questionnaire tailored to Iranian culture be developed and implemented.

Introduction

Ménière's disease is a chronic and often debilitating disorder of the inner ear, primarily characterized by recurrent episodes of vertigo, fluctuating sensorineural hearing loss (typically unilateral), tinnitus, and aural fullness (Rizk et al., 2022). Although its precise etiology remains elusive, current evidence suggests it is multifactorial, involving genetic predispositions, autoimmune mechanisms, and environmental contributors (Iwasaki et al., 2021). Epidemiological data also point to a slightly higher prevalence in women. Despite its relatively low overall prevalence, Ménière's disease significantly impairs quality of life, mainly due to the unpredictability and intensity of its symptoms, which often provoke severe anxiety (Sanchez-Cuadrado et al., 2021).

The sudden onset of vertigo episodes can induce anticipatory anxiety, prompting individuals to limit social, occupational, and recreational activities in an attempt to avoid potential attacks (Hu et al., 2022). Research has consistently demonstrated elevated rates of comorbid anxiety disorders among individuals with this condition. The persistent nature of symptoms such as tinnitus and hearing fluctuations contributes to ongoing emotional distress and cognitive impairments (Eraslan Boz et al., 2023).

One significant psychological consequence associated with chronic illness, including Ménière's disease, is experiential avoidance—the tendency to suppress or evade unpleasant internal experiences such as distressing emotions, thoughts, or physical sensations, even when such avoidance exacerbates long-term suffering (Swain, 2023). In this context, patients may attempt to avoid the sensation of dizziness, the fear of vertigo attacks, or the emotional toll of their functional limitations. Although seemingly adaptive in the short term, this pattern

of avoidance often intensifies psychological distress, reduces behavioral flexibility, and limits participation in valued life activities (Teggi et al., 2021).

Importantly, the symptomatology of Ménière's disease displays considerable interindividual variability and temporal fluctuation, highlighting the need for individualized and lifestyle-focused management strategies (Mohammed Hashem et al., 2024). Emerging evidence underscores the role of dietary habits in modulating symptom severity and frequency, thereby supporting the integration of personalized nutritional interventions (Webster et al., 2023). Furthermore, the presence of unhealthy lifestyle behaviors has been associated with elevated levels of anxiety, a condition that is disproportionately prevalent in individuals with Ménière's disease compared to the general population (Lahiji et al., 2022). It heightened anxiety, especially when coupled with poor health habits, negatively impacts patients' quality of life, with many reporting that significant psychosocial stressors frequently precede acute episodes (Yang et al., 2022).

Efforts to reduce experiential avoidance have shown promise in improving patients' emotional well-being and promoting healthier lifestyle patterns. Notably, individuals with Ménière's disease often report elevated levels of state and trait anxiety, mainly due to the unpredictable nature of vertigo episodes and the chronicity of symptoms such as tinnitus and hearing fluctuation (Eraslan Boz et al., 2023). Heightened anxiety can further exacerbate avoidance behaviors, creating a cycle that reduces social participation and impairs quality of life. This reciprocal relationship between anxiety, avoidance, and poor health behaviors underscores the importance of integrative psychological interventions (Meulders et al.,2024).

Various psychological models aim to address the maladaptive cognitive and emotional mechanisms associated with chronic illnesses, with CBT standing out as one of the most empirically supported approaches (Miene et al., 2024). CBT specifically targets dysfunctional thought patterns, avoidance behaviors, and emotional dysregulation, making it highly suitable for populations dealing with chronic stress and uncertainty (Grajdan et al., 2025).

A comprehensive meta-analysis by Carpinelli et al. (2023) confirmed the effectiveness of CBT in reducing generalized anxiety symptoms across chronic somatic conditions. Additionally, a randomized controlled trial by Zhou et al. (2023) showed that CBT not only decreased anxiety and experiential avoidance in patients with vestibular disorders but also improved adherence to healthy lifestyle behaviors. A systematic review by Yang et al. (2022) further highlighted CBT's capacity to mitigate avoidance behaviors in chronic back pain, and Vlachou et al. (2022) found significant improvements in both mental health and lifestyle outcomes among individuals with diabetes following CBT interventions.

Considering the prominent role of psychological factors in Ménière's disease, there is substantial rationale for examining the utility of CBT-based interventions in this context. One potential explanation for CBT's efficacy lies in emerging evidence indicating cognitive dysfunctions—such as impairments in attention, executive function, and memory—among individuals with Ménière's disease (Demirhan & Celebisoy, 2023). Several case studies have reported promising outcomes; for example, Garcia-Toro et al. (2023) illustrated the efficacy of CBT in facilitating lifestyle changes in patients with metabolic syndrome, while Aazh et al. (2025) demonstrated its success in reducing tinnitus-related distress.

Despite these promising findings, empirical research examining psychological interventions for Ménière's disease remains scarce, particularly in non-Western contexts such as Iran, where cultural and healthcare system differences may influence both symptom presentation and treatment efficacy. Given the complex

interplay between physiological symptoms and psychological distress in Ménière's disease, addressing the disorder solely through medical management is often insufficient (Hu et al., 2022). The high prevalence of anxiety, experiential avoidance, and maladaptive lifestyle habits among affected individuals necessitates a holistic, biopsychosocial approach to treatment (Iwasaki et al., 2021). Interventions that target cognitive and emotional processes—such as CBT—have not only the potential to reduce psychological distress but also to improve health-related behaviors and overall functioning (Grajdan et al., 2025). Evaluating such interventions is particularly important in Iran, where psychological support for chronic vestibular disorders is underutilized and understudied. The current study, therefore, aims to assess the efficacy of CBT in improving lifestyle, reducing anxiety, and decreasing experiential avoidance in individuals diagnosed with Ménière's disease. This study's hypothesis included:

CBT is effective on the lifestyle of patients with Ménière's disease

CBT is effective for the anxiety of patients with Ménière's disease

CBT is effective in the treatment of experiential avoidance in patients with Ménière's disease

Method

The research employed a quasi-experimental design with a pre-test, post-test, and one-month follow-up, including a control group.

Participants

The statistical population consisted of all patients diagnosed with Meniere's disease who sought care at the specialized otolaryngology clinic affiliated with Mashhad Medical Sciences Hospital between January and March 2023. Thirty patients aged 18–50 years were recruited using a convenience sampling method from individuals attending the clinic.The sample size was determined based on G*Power software (Faul et al., 2009).

Inclusion Criteria:Participants were required to have a definitive diagnosis of Meniere's disease by an otolaryngologist, be between 18 and 50 years old, and have a minimum of a middle school education.

Exclusion Criteria: Individuals with drug or alcohol addiction, hearing impairments unrelated to Meniere's disease, or chronic illnesses other than Meniere's disease were excluded. Participants were also excluded if they missed more than two sessions or chose to discontinue their participation.

Design and Procedure: Participants were randomly assigned to two groups, each comprising 15 individuals. Standardized questionnaires were administered at three time points: before the intervention, immediately after the intervention,and 30 days after the intervention.

Ethical Considerations: The study was approved by the Ethics Committee of Islamic Azad University of Sari (IR.IAU.SARI.REC.1402-92). All participants provided written informed consent prior to their inclusion. The study adhered to the principles of the Declaration of Helsinki (2013).

Materials

Depression, Anxiety, and Stress Scale (DASS-21): Developed by Lovibond and Lovibond (1995), the DASS-21 assesses symptoms of depression, anxiety, and stress. This study focused on the seven items related to anxiety. Participants rated the frequency of symptoms experienced over the past week using a 4-point Likert scale (ranging from 0 to 3). The pilot study confirmed a three-factor structure and reported Cronbach's alpha values ranging from 0.71 to 0.90. (Lovibond & Lovibond, 1995). Higher scores indicate higher anxiety. In

Iran, Maleki Kambakhsh validated the questionnaire and reported moderate and significant convergent validity with a quality of life measure. Cronbach's alpha coefficients for the depression, anxiety, and stress subscales were 0.70, 0.84, and 0.82, respectively, while test-retest reliability coefficients were 0.79, 0.67, and 0.64, all within acceptable ranges (Moghadam et al., 2021). In this study, Cronbach's alpha for the total score was 0.74.

Acceptance and Action Questionnaire-II (AAQ-II): Designed by Bond (2007), the AAQ-II is a 10-item self-report scale measuring experiential avoidance. Items are rated on a 7-point Likert scale (1–7), yielding total scores ranging from 10 to 70; higher scores indicate greater experiential avoidance. Bond (2011) reported a Cronbach's alpha of 0.93 based on split-half reliability analysis. Convergent validity was demonstrated through correlations with the Beck Depression Inventory (r = -0.59 to -0.44) in a sample of 192 individuals. In Iran, the content validity was confirmed, and Cronbach's alpha values ranged from 0.78 to 0.80 (Zandipour, 2009). In this study, Cronbach's alpha for the total score was 0.78.

Miller and Smith Lifestyle Questionnaire: This 20-item instrument evaluates lifestyle factors using a 5-point Likert scale (1 = always to 5 = never), with higher scores indicating an unhealthier lifestyle. The original study by Miller and Smith (1988) supported the reliability and validity of the tool. A pilot study on 20 patients with lung disease reported a Cronbach's alpha of 0.86, with item-total correlations exceeding 0.50. In Iran, test-retest reliability was assessed in a sample of 30 nurses over a two-week interval, resulting in a reliability coefficient of 0.85 (Fazel et al., 2011). In this study, Cronbach's alpha for the total score was 0.83.

Intervention

The cognitive-behavioral intervention consisted of eight sessions, each lasting 90 to 120 minutes, and was conducted twice a week. Sessions were designed based on the workbook of Bond and Dryden (2002). Each session included an introduction, review of homework, feedback, main exercises, and a concluding summary. The sessions were delivered by a specialist with over ten years of experience in cognitive-behavioral therapy. Techniques taught included relaxation training, communication skills, problem-solving strategies, assertiveness, identifying and modifying irrational thoughts, and anger management, all integrated with health-related issues specific to individuals with Meniere's disease.

Table 1. Content of cognitive behavioral therapy sessions

Session Content

Session	content
1	First, greetings to the group members, and getting to know each other Expression of the rules governing the group Establishing an emotional relationship between the members and the therapist Expression of goals Explanation of the cognitive behavioral therapy process Explanation of the relationship between cognitive behavioral therapy and the current illness
2	Second relationship between thoughts and feelings Ways to recognize automatic irrational thoughts Explanation of processing errors
3	Third Training in reevaluating thoughts Challenging thoughts as a strategy for challenging irrational thoughts
4	Fourth Training in anger management Physical relaxation training

5	Fifth Training in problem-solving techniques
6	Sixth Training in communication skills Assertiveness training
7	Seventh Training in Time Management Eighth Overview Practice skills learned in previous sessions
8	Summary and feedback

Statistical analysis

In this study, SPSS 25 software was used for statistical analysis of the data. For this purpose, in addition to descriptive statistics such as frequency tables, means, and standard deviations, the ANOVA-RM method with repeated measures was used to analyze the data obtained from pre-post follow-up groups, provided the assumptions were met.

Repeated measures ANOVA relies on several key assumptions to ensure valid results. First, the data within each group should follow a normal distribution (Shapiro-Wilk test). Second, there should be homogeneity of variances (Levene's test), meaning that the variance across different conditions or time points is approximately equal. Third, the assumption of sphericity must be met, which means the variances of the differences between all combinations of related groups (levels) are equal; this is tested using Mauchly's test of sphericity. Additionally, Box's M test is used in multivariate approaches to test the equality of covariance matrices across groups, particularly when using MANOVA as an alternative to repeated measures ANOVA. Violations of these assumptions may require corrections or alternative statistical methods.

Results

The mean and standard deviation of the age of the participants in the CBT group were 34.21±4.19 and 36.50±4.9 in the control group (P=0.34, t=0.93). Most of the participants had a high school diploma and were married; The results of the chi-square test showed that there was no significant difference between the two groups in terms of gender, education, and marital status. The results of the t-test analysis showed that there was no significant difference between the two groups in terms of average duration of illness (P = 0.89, t = 0.43).

Table2. Descriptive indices of the variable

Variable	Group	Pre test M(SD)	Post test M(SD)	Follow up M(SD)
Experimental	CBT	39.57(3.15)	37.28(3.22)	34.64(3.31)
avoidance	Control	40.00(2.48)	39.71(2.52)	39.57(2.95)
Anxiety	CBT	10.85(2.31)	8.50(2.06)	6.35(2.06)
	Control	12.00(3.13)	11.85(2.76)	11.78(2.86)
Life style	CBT	43.50(1.94)	40.92(2.36)	38.92 (2.36)
	Control	45.21(2.73)	44.85(2.53)	44.71(2.84)

In this study, to test the assumptions of normality of data distribution, homogeneity of variance, and

homogeneity of covariance matrices of dependent variables, as well as the condition of sphericity or equality of the error covariance matrix, were evaluated and confirmed. As shown in Table 3, the significant indices for the Shapiro-Wilk test, homogeneity of variances, and homogeneity of covariances indicate that these assumptions have been met. In the case of the anxiety variable, the Mauchly test was significant, and the Greenhouse-Geisser index was used.

Table 3. Assumptions of repeated measures ANOVA

assumption	variable	P value
Normality	Experimental avoidance	0.63
	Anxiety	0.74
	Life style	0.35
Leven test	Experimental avoidance	0.43
	Anxiety	0.21
	Life style	0.36
M box	Experimental avoidance	0.24
	Anxiety	0.26
	Life style	0.06
	Experimental avoidance	0.06
	Anxiety	0.03
	Life style	0.25

Table 4: Results of analysis of variance with repeated measures in explaining the effect of the independent variable on the variables under study

variable	Effect	MM	MS	F	P	eta
Experimental avoidance	group	141.44	141.44	5.51*	0.03	0.17
	time	100.50	50.25	142.52*	0.001	0.84
	Time*group interaction	71.16	35.58	100.92*	0.001	0.79
Anxiety	group	230.01	230.01	11.96*	0.001	0.31
	time	77.88	53.31	139.87*	0.001	0.84
	Time*group interaction	64.31	44.02	115.50*		0.81
Life style	group	304.76	304.763	16.88*	0.001	0.39
	time	90.73	45.36	138.00*	0.001	0.84
	Time*group interaction	58.16	29.08	88.46*	0.001	0.77

*significant at 0.05 level

Table 4 shows that the interaction effect of group × time, time, and group for the variables of experiential avoidance, anxiety, and lifestyle is significant at the 0.001 level. These findings indicate that cognitive behavioral therapy was significantly effective. The effect size of the intervention group compared to the control group for the variables of experiential avoidance, anxiety, and lifestyle was 0.17, 0.31, and 0.39, respectively.

Table5. Bonferroni result (post hoc)

Variable	time		Mean diff	Error	P
anxiety	pre	Post	1.55	0.14	0.001
	pre	Follow up	2.35	0.17	0.001

	Post test	Follow up	1.10	0.09	0.001
Experimental avoidance	pre	Post	1.28	0.13	0.001
	pre	Follow up	2.67	0.19	0.001
	Post test	Follow up	1.39	0.14	0.001
Life style	pre	Post	1.46	0.16	0.001
	pre	Follow up	2.53	0.17	0.001
	Post test	Follow up	1.07	0.12	0.001

	groups	Mean diff	Error	P
anxiety	CBT-control	3.31	0.95	0.02
Life style		3.81	0.92	0.001
Experimental avoidance		2.59	1.10	0.01

According to the results obtained in the post-test table, the changes in lifestyle scores (3.81), anxiety (3.31), and experimental avoidance (2.59) between the two groups showed significant differences at the 0.05 level. Additionally, changes in lifestyle, anxiety, and experimental avoidance scores over time, from pre-test to post-test and from pre-test to follow-up, were significant at the 0.001 level.

Discussion

This study aimed to compare the effectiveness of CBT on lifestyle, anxiety, and experiential avoidance in patients with Ménière's disease. Findings showed CBT was effective on experiential avoidance in patients with Ménière's disease. This finding was consistent with the results obtained in the studies by Amiri Arjmand et al. (2021), Meine et al. (2024), Oraki (2022), and Hokmabadi et al. (2022). Cognitive restructuring has helped patients identify and correct irrational thoughts about the symptoms of the disease. In addition, gradual exposure has encouraged the patient to face situations they previously avoided, thereby reducing their sensitivity and anxiety. Emotion regulation training also included providing strategies for managing negative emotions, such as mindfulness and relaxation exercises. Strategies for coping with dizziness and reducing reliance on avoidance were also taught. CBT, especially problem-solving techniques, can change and adapt negative coping styles such as experiential avoidance.

The findings also showed that CBT was effective on the lifestyle of the patients participating in the study. In line with this finding, Garcia-Toro et al. (2023) and Vlacho et al. (2022) have confirmed the effectiveness of CBT on the lifestyle of patients.

In explaining the effect of CBT on the lifestyle of patients with Ménière's disease, it can be said that the problems caused by the anticipation of vertigo attacks lead to the avoidance of social situations and physical activities. Cognitive restructuring helps patients identify and correct negative and catastrophizing thoughts about the disease. Additionally, through coping skills training, patients learn how to manage their symptoms and lead an active life despite the disease. Additionally, training in sleep regulation and stress reduction through techniques such as relaxation exercises and mindfulness can help improve quality of life. Helping patients

maintain physical activity appropriate to their condition, without worrying about aggravating symptoms, is a key outcome of cognitive rehabilitation, as well as a list of practical activities. It should be noted that one of the challenges of Ménière's patients is the feeling of losing control over their lives. CBT reduces this feeling by increasing awareness and emotional regulation skills, and helps patients cope with their disease with more confidence (Abedpour et al., 2024).

One of the results of the study was that CBT was effective for anxiety in patients with Ménière's disease. The results of this study are consistent with those of Aazh et al. (2025) and Carpinelli et al. (2023).

According to cognitive theory, our thoughts directly affect our feelings and behaviors. Psychological disorders such as anxiety are often caused by ineffective thinking and negative mental patterns. Anxious individuals often exhibit cognitive errors, which means they think in illogical and harmful ways that perpetuate negative feelings. For example, people may suffer from "all or nothing" thinking, where if they fail in one thing, they believe they will always fail. CBT helps individuals identify this type of thinking and gradually correct it. In cognitive restructuring, individuals learned to challenge their dysfunctional beliefs and replace them with rational beliefs, which ultimately leads to a reduction in anxiety. In fact, during the sessions, by identifying and correcting dysfunctional thoughts and behaviors, individuals were helped to manage anxiety better and improve their quality of life (Tavakolian & Farahani, 2024).

Conclusion

The results of the present study show that cognitive behavioral therapy can be effective for anxiety, experiential avoidance, and the lifestyle of patients with Ménière's disease. This study faced some limitations, including the use of self-reported questionnaires, which could introduce personal biases. These response biases could affect the results. Therefore, it is suggested that different assessment methods be used in future studies. Additionally, this study lacked an active or placebo control group, which could have influenced the results obtained. It is suggested that placebo groups be used in future studies to compare effectiveness. In addition, according to the findings obtained, it is suggested that the cognitive behavioral therapy approach be used to increase the quality of life of patients with chronic ear problems. Finally, a lifestyle assessment was conducted using a foreign questionnaire. While this instrument was validated in Iran, cultural differences, particularly between Iranian and Western lifestyles, may have influenced the results. It is recommended that a lifestyle questionnaire tailored to Iranian culture be developed and implemented.

Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Author contributions

All authors have read and agreed to the published version of the manuscript.

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Conflicts of interest

There are no conflicts of interest.

References

Aazh, H. (2025). Cognitive Behavioural Therapy (CBT) for Managing Tinnitus, Hyperacusis, and Misophonia: The 2025 Tonndorf Lecture. *Brain Sciences*, 15(5), 526. ; https://doi.org/10.3390/brainsci15050526

Abedpour, S., Zare, H., et al. (2024). The Effectiveness of Mindfulness-Based Cognitive Therapy in Resilience, Rumination, and Dysfunctional Attitudes of Infertile Couples. Iranian *Journal of Health Psychology;* 7, 11-23. https://doi.org/10.30473/ijohp.2024.63277.1241

Akbari, M., shokhmgar, Z., et al. (2021). Comparison of the Effectiveness of Schema Therapy and Cognitive Behavioral Therapy on CommunicationSkills and Problem Solving and Mental Health in Couples with Extra-Marital Experience. *Journal of Nursing Education,* 9(1), 1-10. URL: http://ijpn.ir/article-1-1476-en.html

Amiri Arjmand, S. A., Mirzaiean, B., et al. (2021). Comparison of the effectiveness of drug therapy and cognitive-behavioral stress management on cognitive avoidance and alexithymia in patients with tension headaches. *Psychological Methods and Models*, 12(45), 121-136. 10.30495/JPMM.2021.27939.3389

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., ... & Zettle, R. D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire–II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior therapy*, 42(4), 676-688. doi: 10.1016/j.beth.2011.03.007. Epub 2011 May 25.

Carpinelli, L., Cosci, F., Guidi, J., & Fava, G. A. (2023). Cognitive behavioral therapy for anxiety disorders in chronic medical conditions: A meta-analytic review. Journal of *Psychosomatic Research*, 170, 111158. https://doi.org/10.1016/j.jpsychores.2023.111158

Demirhan, M. A., & Celebisoy, N. (2023). Cognitive functions in episodic vestibular disorders: Meniere's disease and vestibular migraine. *Journal of Vestibular Research,* 33(1), 63-70 doi: 10.3233/VES-220025

Eraslan Boz, H., Kırkım, G., et al. (2023). Cognitive function in Meniere's disease. *Psychology, health & medicine*, 28(4), 1076-1086. doi: 10.1080/13548506.2022.2144637

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2009).Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods,* 41(4), 1149–1160.https://doi.org/10.3758/BRM.41.4.114

Fazel, A., Haghshenas, H., et al. (2011). Ability to predict personality traits and lifestyle on women's satisfaction nurse city couple. *Quarterly Journal of Woman and Society*, 2(7), 139-163.20.1001,1,20088566,1390,2,7,8,1.

Garcia-Toro, M., Aguilar-Latorre, A., et al. (2023). Mindfulness skills and experiential avoidance as therapeutic mechanisms for treatment-resistant depression through mindfulness-based cognitive therapy and lifestyle modification. *Frontiers in psychology,* 14, 1008891. 10.3389/fpsyg.2023.1008891. eCollection 2023.

Grajdan, M. M., Etel, E., Farrell, L. J., & Donovan, C. L. (2025). A systematic review of parental involvement in digital cognitive behavioural therapy interventions for child anxiety. *Clinical Child and Family Psychology Review,* 28(1), 22-70. doi: 10.1007/s10567-024-00505-3.

Hokmabadi, M., Zeraatkar, M., et al. (2022). The Effectiveness of Cognitive-Behavioral Therapy Based on Healthy Lifestyle on Self-Care Improvement in Patients With Heart Failure. *Middle Eastern Journal of Disability Studies,* 13:83. 10.29252/mejds.0.0.5

Hu, C., Yang, W., et al. (2022). Risk factors for Meniere disease: a systematic review and meta-analysis. *European Archives of Oto-Rhino-Laryngology*, 279(12), 5485-5496. doi: 10.1007/s00405-022-07505-5. Epub 2022 Jul 6.

Iwasaki, S., Shojaku, H., et al. (2021). Diagnostic and therapeutic strategies for Meniere's disease of the Japan Society for Equilibrium Research. *Auris Nasus Larynx*, 48(1), 15-22. doi: 10.1016/j.anl.2020.10.009.

Lahiji, M. R., Akbarpour, M., et al. (2022). Prevalence of anxiety and depression in Meniere's disease; a comparative analytical study. *American Journal of Otolaryngology,* 43(5), 103565. doi: 10.1016/j.amjoto.2022.103565.

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour research and therapy*, 33(3), 335-343. doi: 10.1016/0005-7967(94)00075-u.

Maleki Kambakhsh, S., Masoudi, R., et al. (2021). Correlation of Depression, Anxiety and stress with indices of dental caries and periodontal disease among 15-year-old adolescents in Bandar Abbas during 2017-18. *Journal of Mashhad Dental School,* 45(4), 405-415. 10.22038/JMDS.2021.54726.2010

Meine, L. E., Müller-Bardorff, M., Recher, D., Paersch, C., Schulz, A., Spiller, T., ... & Kleim, B. (2024). Network analyses of ecological momentary emotion and avoidance assessments before and after cognitive behavioral therapy for anxiety disorders. *Journal of anxiety disorders,* 106, 102914. https://doi.org/10.1016/j.janxdis.2024.102914

Meulders, A., Traxler, J., Vandael, K., & Scheepers, S. (2024). High-anxious people generalize costly pain-related avoidance behavior more to novel safe contexts compared to low-anxious people. *The Journal of Pain*, 25(3), 702-714. https://doi.org/10.1016/j.jpain.2023.09.023

Moghaddam, A., Saed, F., Dibajnia, P., & Zangeneh, J. (2008). A preliminary validation of the depression, anxiety and stress scales (DASS) in non-clinical sample. *Clinical psychology and personality,* 6(2), 23-38. 20.1001.1.23452188.1387.6.2.3.6

Mohammed Hashem, E., Antar Saleh, A., et al. (2024). Effect of Lifestyle and Dietary Intervention on Quality of Life and Self-care among Patients with Meniere's Disease. *Egyptian Journal of Health Care,* 15(3), 692-707. 10.21608/EJHC.2024.379367

Oraki, M. (2021). Comparison of Effectiveness Mindfulness and Cognitive-behavioral Therapies on Experiential Avoidance of Women with Insomnia. *Psychological Studies*, 17,310.22051/PSY.2021.36386.2463

Rizk, H. G., Mehta, N. K., et al. (2022). Pathogenesis and etiology of Ménière disease: a scoping review of a century of evidence. JAMA Otolaryngology–*Head & Neck Surgery,* 148(4), 360-368. doi: 10.1001/jamaoto.2021.4282.

Sanchez-Cuadrado, I., Calvino, M., et al. (2021). Quality of life following cochlear implantation in patients with Menière's disease. *Frontiers in Neurology,* 12, 670137. https://doi.org/10.3389/fneur.2021.670137

Swain, S. K. (2023). Current treatment of Meniere's disease. *Matrix Science Medica*, 7(1), 1-6.

Tavakolian, E., Farahani, H., et al. (2024). Clustering somatic symptoms based on psychological risk factors. *Iranian Journal of Health Psychology*, 7(2), 9-20https://doi.org/10.30473/ijohp.2024.68495.1317

Teggi, R., Finocchiaro, C. Y., et al. (2021). Alexithymia in patients with ménière disease: A possible role on anxiety and depression. *Audiology Research*, 11(1), 63-72. doi: 10.3390/audiolres11010008.

Vlachou, E., Ntikoudi, A., et al. (2022). Effectiveness of cognitive behavioral therapy-based interventions on psychological symptoms in adults with type 2 diabetes mellitus: an update review of randomized controlled trials. *Journal of Diabetes and its Complications,* 36(5), 108185. https://doi.org/10.1016/j.jdiacomp.2022.108185

Webster, K. E., George, B., et al. (2023). Lifestyle and dietary interventions for Ménière's disease. *Cochrane Database of Systematic Reviews,*2,44 doi: 10.1002/14651858.CD015244.pub2.

Yang, J., Lo, W. L. A., et al. (2022). Evaluation of cognitive behavioral therapy on improving pain, fear avoidance, and self-efficacy in patients with chronic low back pain: A systematic review and meta-analysis. *Pain Research and Management*, 2022(1), 4276175 doi: 10.1155/2022/4276175.

Zandipour, T. (2009). MS patients\'attitude toward the quality of their life and counseling and psychology services. *Journal of Psychological Studies,* 5(2), 89-116. 10.22051/PSY.2009.1600

Zhou, Y., Sun, W., & Liu, F. (2023). Effectiveness of cognitive-behavioral therapy in vestibular disorders: A randomized controlled trial. *Behavior Therapy*, 54(1), 56–68. https://doi.org/10.1016/j.beth.2022.11.004