



The effect of mindfulness-based art therapy on psychological symptoms and happiness levels in patients with migraine: a pilot study

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Abstract

The aim of this study was to examine the impact of the Mindfulness-Based Art Therapy Program on the depression, anxiety and stress symptoms, and happiness of participants. This study is a quasi-experimental research with a pretest-posttest design. The independent variable of the study was the Mindfulness-Based Art Therapy Program, which was applied to the study group between the pretest and posttest. The dependent variables of the study were the depression, anxiety, and stress symptoms and happiness of the individuals included in the study group. The study group consisted of a total of 10 participants (8 females and 2 males) between the ages of 24 and 46, who met the inclusion criteria. The Depression-Anxiety-Stress Scale (DASS-21) and the Oxford Happiness Scale Short Form (OHS-SF) were applied to the participants both at the beginning of the study and at the end of 8 weeks. A total of 8 sessions of the Mindfulness-Based Art Therapy Program were applied to the study group. Each session lasted 180 min. The Wilcoxon Signed-Rank Test was used to analyze the data obtained to evaluate the effectiveness of the program. The analyses showed that the Mindfulness-Based Art Therapy Program was effective in reducing the depression and stress symptoms of the participants and increasing their happiness but was not effective in reducing their anxiety symptoms. In conclusion, although positive clinical findings were observed in this pilot study, more studies are needed to confirm these findings about the Mindfulness-Based Art Therapy Program as an alternative treatment method for patients with migraine.

Keywords Migraine · Mindfulness-based art therapy · Depression · Anxiety · Stress · Happiness

Introduction

Migraine is a throbbing headache that occurs as an attack, usually in a part of the head. It negatively affects everyday activities and the quality of life of individuals who suffer from it and causes a loss of workforce (Demirkaya et al., 2008; İnan et al., 2020). Migraine is mostly caused by the autonomic nervous system and is characterized by recurrent moderate to

severe headaches with different determinants (Topbaşı, 1996; Demirkaya et al., 2008). Normal or severe migraine attacks can cause pain that can last for hours, sometimes days. Many patients with migraine experience problems in their daily lives due to these unbearable headaches. The diagnosis of migraine is made based on the nature of the headache and the symptoms accompanying the pain (Durusoy, 2012). A diagnosis of migraine is made based on factors such as the patient having at least 5 moderate or severe attacks, on one side of their head, in a 6-month period, the attacks causing throbbing pain, lasting approximately 4–72 h, increasing in intensity with physical activities performed after pain starts, the attacks being accompanied by vomiting or nausea, and either light or noise sensitivity, and the absence of any other cause for the headache (Çakır, 2006).

To stop or prevent migraine attacks quickly, it is important to take the right medication at the correct dose early on. Preventive treatment for frequent attacks is also possible. Knowing the factors that trigger the pain and avoiding

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them is essential for coping with migraine headaches. The main goal of treatment of migraine is to learn to live with migraine and to prolong the time between attacks. The first step of migraine treatment is pharmacologic treatment (Milanlioğlu & Tombul, 2013). In addition to the pharmacological approach, the positive effects of therapeutic interventions have also been shown in many studies. Among these approaches, it has been observed that many methods that have been applied, such as cognitive behavioral therapy, mindfulness-based stress reduction program, mindfulness-based cognitive therapy, psychoeducation, and self-compassion practices, can have positive results (Akçakoca et al., 2015). One of the therapeutic interventions for reducing migraine pain is art therapy (Vick et al., 2009).

Art therapy is an expressive therapy method in which artistic materials are utilized to initiate positive change, overcome physical and psychological problems, resolve conflicts, and ensure mind, emotional, and behavioral well-being (Malchiodi, 2003). Artistic practices such as clay art, music, dance, poetry, collage-making, and painting are utilized in the therapeutic process (Demir, 2022). Art therapy allows individuals to explore and express themselves in a more comprehensive way than traditional speech therapy. Professionals practicing art therapy can have different conceptual perspectives. For example, they can integrate the theoretical framework of psychoanalytic, humanistic, cognitive behavioral, or gestalt approaches into their art therapy practice. The theoretical basics of the psychotherapy approaches shape the framework of art therapy and help to interpret what is expressed (Malchiodi, 2003).

In recent years, many mental health professionals have incorporated mindfulness practices and art therapy and have established the foundations of the Mindfulness-Based Art Therapy approach (Rappaport, 2009). Mindfulness-Based Art Therapy aims to increase mindfulness, help patients accept internal and external experiences, and increase their ability to cope with problems (Monti & Peterson, 2003). Mindfulness-Based Art Therapy has its theoretical roots in the theory of self-regulation, which enables individuals to regulate their thoughts and emotions. This approach is designed to help patients develop specific skills to improve self-regulation. Mindfulness-Based Art Therapy consists of three basic elements. These are (1) a standard mindfulness-based stress reduction program, (2) art therapy activities, and (3) supportive group therapy (Monti et al., 2006).

The aim of Mindfulness-Based Art Therapy is to integrate the creative function of making art into the process of self-discovery (Rappaport, 2009). The main goal of this theory is to help patients develop coping skills that can appropriately mature their ego by enabling them to express the physical and mental pain they face both subjectively and objectively (Jang et al., 2016). Combining art therapy and mindfulness

practices improves individuals' self-awareness and insight, thus positively impacting their physical and mental health (Jaworski, 2020). In addition to facilitating physical, mental, and emotional processes, this also has a significant impact on neurobiological processes (Czamanski-Cohen & Weihs, 2016). Monti et al. (2006) conducted an 8-week Mindfulness-Based Art Therapy program for female patients diagnosed with cancer. The program included a combination of mindfulness practices and art therapy practices. The results of the study showed that the Mindfulness-Based Art Therapy Program was effective on the psychological symptoms of cancer patients. In another study conducted by Monti et al. in 2012, the effectiveness of the Mindfulness-Based Art Therapy Program for female patients with breast cancer was evaluated. As a result of the study, the researchers reported that the program helped the participants cope with everyday stressors (Monti et al., 2012). Mindfulness-Based Art Therapy focuses on building trust, empathy, and self-compassion. Thus, its usage is thought to be effective for children and adolescents (Rappaport, 2016). In their study that included child participants between the ages of 8 and 15, Coholic (2011) found that the Mindfulness-Based Art Therapy program increased the self-awareness and self-esteem of children. Jaworski (2020) also examined the effect of Mindfulness-Based Art Therapy on post-traumatic stress disorder symptoms in children. The findings of the study showed that Mindfulness-Based Art Therapy reduces post-traumatic stress symptoms in children and improves their well-being.

As a result of the literature review conducted, it was observed that there are a limited number of studies by foreign scientists that elucidate the effectiveness of Mindfulness-Based Art Therapy. When the relevant literature in Turkey was examined, no studies on the effectiveness of Mindfulness-Based Art Therapy, a psychosocial intervention program, were found. Hence, the main purpose of this study was to investigate the effectiveness of the Mindfulness-Based Art Therapy program on depression, anxiety and stress symptoms, and happiness of individuals diagnosed with migraine. Since no previous studies on this subject were found in Turkey, it is believed that this study will make an important contribution to the related literature. For this purpose, the following hypotheses were examined:

H1: There will be a statistically significant decrease in the depression, anxiety, and stress symptoms of individuals participating in the Mindfulness-Based Art Therapy Program.

H2: There will be a statistically significant increase in the happiness of individuals participating in the Mindfulness-Based Art Therapy Program.

Method

Research design

This study examined the effects of the Mindfulness-Based Art Therapy Program on the depression, anxiety and stress symptoms, and happiness of individuals diagnosed with migraine. This was a quasi-experimental study with no control group. In quasi-experimental studies, participants are evaluated in relation to the dependent variable, both before and after the experimental procedure (Karasar, 2014) (Table 1).

In line with the research design shown in Table 1, the Depression-Anxiety-Stress Scale (DASS-21), and the Oxford Happiness Scale Short Form (OHS-SF) were administered as pretest to all participants in the study group before the sessions began. After the pre-treatment measurement of the participants, the implementation phase started. In the implementation phase, the Mindfulness-Based Art Therapy Program consisting of eight sessions was applied to the experimental group. After the completion of the sessions, the scales (DASS-21 and OHS-SF) applied to the study group as pretest were applied as posttest.

Study group

Between November 2021 and December 2021, 13 patients who presented to the neurology outpatient clinic with headache complaints and met the diagnosis of migraine according to the International Classification of Headache Disorders-II (ICHD-II) diagnostic criteria were included in the study (IHS, 2004). Since three patients did not want to continue the treatment, a total of 10 patients completed the study. The study group consisted of 10 individuals, 8 women and 2 men. The participants were between the ages of 24–46 years. When the education levels of the participants are examined, it is seen that 8 of them have bachelor's degrees and 2 of them have master's degrees. When the participant's marital status is analyzed, it is seen that 6 of them are single and 4 of them are married. The institution where the study was conducted and the institution where the diagnosis was made work independently.

For the study, permission was obtained from the Ethics Committee of Uskudar University and an informed consent form was obtained from all patients. All individuals in the study group voluntarily participated in the study. Some criteria were determined for the selection of patients to participate in the study. As inclusion criteria,

patients aged 18–45 years with a diagnosis of migraine for at least one year, migraine attacks at least five days a month, and migraine history starting under the age of 30 were determined. Headache due to organic or secondary causes (history of subarachnoid or cerebral hemorrhage, hypertension, cerebral embolism, or thrombosis); having a history of neurological disease, being pregnant or lactating, and having a history of substance abuse were determined as exclusion criteria. Also since participants were referred from neurology clinic, doctors (neurologists and psychiatrists) referred only patients who have no personality disorder diagnosis.

Data collection tools

In this study, a Socio-Demographic Information Form, the Depression-Anxiety-Stress Scale (DASS-21), and the Oxford Happiness Scale Short Form (OHS-SF) were used. The psychometric features of the scales are presented below.

Socio-Demographic Information Form

This form was prepared by the researchers to obtain the personal information of the participants such as their age, gender, education level, marital status, occupation, medication use, alcohol substance use, and other physical diseases.

Depression-Anxiety-Stress Scale (DASS-21)

The DASS-21, a shortened form of the DAS-42, was developed by Lovibond and Lovibond (1995). The validity and reliability of the Turkish version of the scale were evaluated by Sarıçam (2018). It is a 4-point Likert-type scale. Each item on the scale is scored from 0 to 4, with 0 signifying “did not apply to me at all”, 1 signifying “applied to me to some degree, or some of the time”, 2 signifying “applied to me to a considerable degree or a good part of the time”, and 3 signifying “applied to me very much or most of the time”. In a normal sample, test-retest correlation coefficients of the scale were found to be $r=0.68$ for the depression subscale, $r=0.66$ for the anxiety subscale, and $r=0.61$ for the stress subscale. The scale consists of 21 questions, with the dimensions of depression, stress, and anxiety being measured by 7 questions each. Scores of 5 points or more on the depression subscale, 4 points or more on the anxiety subscale, and 8 points or more on the stress subscale indicate that the person answering the scale has a related problem.

Table 1 The symbolic representation of the research design

Pretest	Procedure	Posttest
DASS-21, OHS-SF	Mindfulness-Based Art Therapy Program	DASS-21, OHS-SF

Oxford Happiness Scale Short Form (OHS-SF)

The OHS-SF was developed by Hills and Argyle in 2002. The shortened scale consisting of 8 items has a correlation of 0.93 ($P < 0.001$) with the original form of the scale consisting of 29 items. Callaway (2009) examined the reliability of the OHS-SF in 2009 and reported the internal consistency coefficient of the scale as 0.76. The scale was adapted to Turkish by Doğan and Çötök in 2011. The internal consistency coefficient of the OHS-SF was reported to be 0.74 and the test-retest reliability coefficient of the scale was reported as 0.85.

Sessions

The content of the program implemented in the research was created with the aim of enabling the participating individuals to recognize and express their feelings and thoughts, evaluating the stimulations and associations that showed themselves through the artistic creations of the participants, and helping the participants to accept their feelings, thoughts, and experiences that are difficult to accept. The program was applied for 8 weeks, with 1 session per week, and each session lasting 180 min. The program was prepared by the researchers using various resources (Peterson, 2014; Demir, 2017; Jang et al., 2018).

Session I

Purpose Enhancing self-awareness of the participants and helping them gain new perspectives on personal experiences and goal setting.

Materials All kinds of art materials such as paper and writing utensils, drawing paper, colored pencils, crayons or markers, and colored paper.

Process The participants were asked to draw a tree while focusing on their emotions associated with the colors and lines they used and express what they felt.

Session II

Purpose Ensuring that participants recognize their emotions and develop their verbal and non-verbal expression skills.

Materials Finger paints, crayons, drawing paper, music, tables, and chairs.

Process The participants were asked to pay attention to the emotions they felt and express the emotions they recognized via painting in order to create a visual representation of their emotions. How the colors that they used made them feel and why they felt that way were discussed.

Session III

Purpose Enabling participants to recognize their emotions in the here and now and helping them develop the ability to express these emotions.

Materials Paper and writing utensils, drawing paper, colored pencils, and crayons or markers.

Process The participants were asked to visualize a circle in their minds. They were asked to give shape and color to the circle they visualized as they wished. They were asked questions such as “How do you feel about the mandala you have drawn?”, “What does this mandala mean to you?”, “What does this mandala tell you?”, “What colors did you use?”, “What do the colors you used mean to you?” and their feelings and thoughts were discussed over the mandalas they had drawn.

Session IV

Purpose Enabling participants to connect with their bodies.

Materials CD player and various instrumental music CDs.

Process An instrumental piece of music was selected. The participants were asked to listen to the music and distinguish between the different instruments. They were asked which instrument's sound they felt the closest to. They were asked to allow themselves to be influenced by the sound of their chosen instrument and dance with the flow of it. Then, which emotions they felt in which parts of their body were discussed in order to help them establish a connection between their bodies and minds.

Session V

Purpose Coping with the illness and problem-solving.

Materials All kinds of art materials such as paper and writing utensils, drawing paper, colored pencils, crayons or markers, and colored paper.

Process The question “What does illness and being ill mean to you?” was discussed and the participants were asked to draw a picture describing being ill. Then, the question “What does your well-being mean to you?” was discussed and they were asked to draw a picture describing well-being. Their emotions and thoughts were discussed over the pictures they had drawn.

Session VI

Purpose Enabling participants to connect with their bodies. Allowing them to recognize their thoughts, feelings, and bodily sensations and help them develop strategies to cope more effectively with their negative feelings and thoughts.

Materials Paper and writing utensils, drawing paper, colored pencils, and crayons or markers.

Process The participants were informed that body awareness would strengthen their relationship with their own bodies and strengthen their mind's ability to focus and promote relaxation. They were given a pre-prepared body template. They were asked to express the positive and negative emotions they experience in their bodies here and now by coloring the body template. Then, they were asked to write a dialog on the topic "my body and me", about what their bodies feel, what they like or dislike, and the changes they want to accomplish in order to establish a connection between their bodies and minds.

Session VII

Purpose Helping participants with chronic pain recognize anxiety and other negative feelings and thoughts that accompany chronic pain and enabling them to change their relation to pain rather than reduce it.

Materials Paper and writing utensils, drawing paper, colored pencils, and crayons or markers.

Process The participants were informed about the effects of mindfulness-based practices on chronic pain. They were given a pre-prepared body template. They were asked to express the pain they felt by coloring the body template. Then, they were asked to write a dialog on the topic "my pain and me", about the intensity of their pain, how it feels, and their beliefs about pain based on the body templates they had created, in order to describe the sensation of pain and their physical, mental, and emotional reactions to the sensation of pain.

Session VIII

Purpose Helping participants to accept themselves with all their positive and negative characteristics and develop feelings of self-worth and self-understanding.

Materials Paper and writing utensils, drawing paper, colored pencils, and crayons or markers.

Process Mevlana Jalaluddin Rumi's poem titled 'The Guest House' was read to the participants. They were asked questions such as "What is the prominent emotional state in this poem?" and "How does this poem make you feel?", and they were encouraged to open themselves up through poems. They were then asked to list the emotions they felt due to the poem. They were then asked to write a poem describing their feelings.

Ethical considerations

This study was ethically approved under decision No. 14 of the Ethics Committee of Üsküdar University dated 11/26/2020.

Results

In this study, the effects of the Mindfulness-Based Art Therapy Program on the participants' depression, anxiety and stress symptoms, and happiness were examined. The findings obtained because of the research are presented in this section.

The mean age of the 10 patients who completed the study was 33.6 ± 7.07 years and 80% of them were female. The mean disease duration was 11.8 ± 6.51 years. 70% of the patients were receiving analgesic medication. All demographic data of the patients are presented in Table 2.

When Table 3 is examined, there was a significant difference between the participants' pretest and posttest scores of the OHS-SF and depression and stress dimensions of the DASS-21 (happiness; $z = -2.314$, $P < 0.05$, depression; $z = -2.150$, $P < 0.05$, stress; $z = -1.995$, $P < 0.05$). However, there was no significant difference between the participant's pretest and post-test scores of anxiety scores (anxiety; $z = -1.541$, $P > 0.05$).

Discussion

Individuals can gain insight into themselves through the mindful use of art in the therapeutic process. Although Mindfulness-Based Art Therapy, a psychosocial treatment method, was only recently discovered, it has positive effects on depression, anxiety, burnout, and stress (Joshi et al., 2021).

Chronic pain is considered a phenomenological experience resulting from biological, psychological, and social interactions. This is because the experience of chronic pain is unique and is associated with the perception of the individual experiencing it. How pain is experienced is related

Table 2 Descriptive characteristics of the patient group

Age	Gender	Education	Marital Status	Working Status	Duration of Illness	Current Drug Treatment
24	Female	Bachelor's Degree	Single	Working	5 Years	Analgesics
27	Female	Bachelor's Degree	Married	Not Working	5 Years	Analgesics
28	Male	Bachelor's Degree	Single	Working	11 Years	Analgesics
28	Female	Master's Degree	Single	Working	6 Years	Migraine-specific medicines
32	Male	Bachelor's Degree	Married	Working	12 Years	Analgesics
34	Female	Bachelor's Degree	Single	Working	9 Years	Analgesics
37	Female	Master's Degree	Married	Working	11 Years	Analgesics
39	Female	Bachelor's Degree	Single	Not Working	14 Years	Prophylactic treatment
41	Female	Bachelor's Degree	Single	Working	20 Years	Analgesics
46	Female	Bachelor's Degree	Married	Not Working	25 Years	Migraine-specific medicines

Table 3 Comparison of DASS-21 and OHS-SF test scores of the study group before and after treatment

Variables	Median	%25	%75	X ± SS	Z	p
Pretest of depression	9,00	5,50	11,00	5,185 ± 9,00	-2,150	0,032
Posttest of depression	4,00	2,00	8,00	2,836 ± 4,60		
Pretest of anxiety	8,00	3,50	10,50	5,815 ± 8,60	-1,541	0,123
Posttest of anxiety	4,00	2,00	10,50	4,195 ± 5,60		
Pretest of stress	6,00	4,00	11,00	6,995 ± 8,60	-1,995	0,046
Posttest of stress	2,00	2,00	4,50	2,836 ± 3,40		
Pretest of happiness	4,00	3,85	4,62	0,590 ± 4,10	-2,314	0,021
Posttest of happiness	4,70	4,55	5,05	0,362 ± 4,73		

to many factors, such as the individual's psycho-social cultural structure, gender, and personal coping capacity (Butler & Moseley, 2008; Camic, 1999; Hardin, 2004; Koenig, 2003; McCaffrey et al, 2003). Phenomenology mainly utilizes mind-body interventions and emphasizes self-management and the bio-psycho-social model in order to elucidate the impact of chronic pain on individuals' lives.

Mindfulness-Based Art Therapy, a dual-modality therapy application, is an approach that integrates Kabat-Zinn's Mindfulness-Based Stress Reduction (MBSR) protocol with traditional art therapy practices (Stull, 2016). The findings of the current study showed that there was a significant difference between the pretest and posttest depression, anxiety, and stress scores of the participants who participated in the Mindfulness-Based Art Therapy Program. When the literature was examined, it was observed that most of the studies that have included individuals diagnosed with migraine were descriptive studies and the number of experimental studies is limited. The lack of studies in the literature that evaluate the effectiveness of Mindfulness-Based Art Therapy on patients with migraine limits the possibility of comparing the findings of the current study with other studies. However, it is possible to compare the present study with studies that included other samples. Jang et al. (2018) tested the effectiveness of the Mindfulness-Based Art Therapy Program on individuals with coronary

artery disease. It was observed that the program caused a statistically significant decrease in depression and anxiety symptoms among participants. In their study, Jalambadani et al. (2019) applied the Mindfulness-Based Art Therapy Program to reduce stress and improve the coping capabilities of pregnant women. The results of the study showed that Mindfulness-Based Art Therapy reduced the stress levels of pregnant women. In a study by Allen (2017), a Mindfulness-Based Art Therapy Program consisting of four sessions was applied to the participants, who were graduate students, to test the program's effectiveness on stress. The results of the study showed that the stress levels of the participants decreased after the program. However, it should be noted that these comparisons are not entirely reliable since the study group of the current study and the mentioned studies differ.

Another finding of the current study was that the Mindfulness-Based Art Therapy Program has an impact on the happiness of individuals. It is recommended to utilize multidisciplinary methods to treat headaches. The Mindfulness-Based Art Therapy Program integrates the importance of being here and now with mindfulness practices, such as breathing exercises and exercises that combine body awareness and breath awareness, art therapy practices such as painting, music, masks, and clay, and group sharing and group discussions. It was expected that these activities would help the participants

to recognize their thoughts, emotions, and bodily sensations, thus increasing their quality of life and, accordingly, their happiness. In the literature, the concept of happiness is used together with the concept of subjective well-being and quality of life (Ulukan & Esenkaya, 2020). In their study, Jalambadani et al. (2019) applied the Mindfulness-Based Art Therapy Program to female patients with breast cancer and found that there was a significant increase in the quality of life of the participants at the end of the program. Another study, in which participants were breast cancer female patients, reported that the Mindfulness-Based Art Therapy Program significantly improved the quality of life of those participants (Jang et al., 2016). As stated above, these comparisons are also not entirely reliable since the study group of the current study and the mentioned studies differed.

Conclusion

In this research, a program was developed by combining art therapy, mindfulness, positive psychology, and group therapy process. In the program, art activities were placed at the center, enabling the participants to express their feelings, thoughts, and experiences through a creative process, while enabling them to experience mindfulness practices such as developing a friendly curiosity and interest in their inner experiences, being aware of their bodily sensations and observing them without judgment, and accepting their challenging feelings, thoughts, and experiences with a compassionate attitude and without judgment. In the research, a program was prepared to change the way patients with migraine with chronic pain relate to pain rather than to cure them and reduce their pain. For this reason, the study focused on the participants' relationship styles with pain rather than the severity of pain.

In this study, the participants with migraine headaches were enabled to realize their thought processes and emotions more deeply by opening their past and present difficult situations to the group and using art therapy techniques. Thus, individuals who gained spiritual well-being gave positive messages to their bodies and started to feel a decrease in migraine pain. It is stated that emotional awareness is less in patients with migraine, negative effects cannot be distinguished, emotions cannot be expressed well verbally, and discharge through the body is more (Cerutti et al., 2016; Galli et al., 2017; Yalug et al., 2010). The group members took the role of body parts that speak for them, enabling them to investigate what their symptoms were trying to tell them and to discover the feelings and needs behind their physical complaints (Demir, 2022). At the sessions' end, most group members verbally stated that their headaches had decreased. It is suggested that this study can be supported by other Mindfulness-Based Art Therapy studies and neurobiological measurements.

The current research had some limitations. This study also does not provide information on whether the Mindfulness-Based Art Therapy Program is more effective than other psychotherapy approaches since it makes no comparisons between the applied program and other psychotherapy methods. Another limitation of the study was that no follow-up measurements were made. This lack of follow-up prevented the evaluation of the long-term impact of the study results. In addition, factors such as living conditions, family dynamics, income level, and working conditions that may affect the research results were not taken into consideration. It is recommended that further studies take these limitations into consideration.

One of the other limitations of our study was the insufficient sample size of the patients while the inclusion criteria were highly specific and restricted (e.g.: for the patients who were diagnosed with migraines for at least a year, having migraine attacks at least five days in a month, migraine history have been started under the age of 30). It was decided that it would be useful to share our findings to both give an idea to the researchers who will conduct similar studies on the subject, and contribute to the literature despite the patient sample size could not be increased as wished and split as test and control groups due to the COVID-19 pandemic conditions.

In conclusion, no studies in Turkey that have evaluated the effectiveness of Mindfulness-Based Art Therapy have been found. Although they are limited in number, studies on the effectiveness of Mindfulness-Based Art Therapy on different populations have been conducted in international studies. As a result of the literature review conducted, no studies on the effectiveness of Mindfulness-Based Art Therapy on individuals diagnosed with migraine were found either in the literature in Turkey or in the international literature. The limited number of studies on this subject limited the ability to compare the findings of the current study with other studies. It is recommended that further structural research that evaluates the effectiveness of Mindfulness-Based Art Therapy should be conducted. It is thought that further studies can help make this approach, which has been implemented throughout the world for many years, become widespread in clinical practice in Turkey.

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Author contributions ES: writing, translation, editing, data collection; SE: review, visualization, finding record, formal analysis VD: interviewer, writing, experiment and control group utilization, pre and post test analysis.

All authors read and approved the final manuscript.

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

Declarations

Informed consent Consent was obtained from all participants included in the study.

Conflict of interest Author declare that they do not have any conflict of interest.

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