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# The Effect of Emotional Freedom Technique on Premenstrual Syndrome and Pain in University Students: A Randomized Controlled Study

## Üniversite Öğrencilerine Uygulanan Duygusal Özgürleşme Tekniğinin Premenstrual Sendrom ve Ağrı Üzerine Etkisi: Randomize Kontrollü Çalışma

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**ABSTRACT Objective:** Premenstrual syndrome (PMS) is an important problem that affects the quality of life of women of reproductive age. This study was conducted to determine the effect of Emotional Freedom Technique (EFT) on PMS and pain. **Material and Methods:** The study was conducted in a pretest-posttest parallel group randomized controlled experimental study design. Data were collected using the "Personal Information Form", "Premenstrual Syndrome Scale (PMSS)", "Subjective Experience Unit Scale (SUE)", and "Visual Analogue Scale (VAS)". Forty-four students between the ages of 18-25 who scored 111 and above on the PMSS and had regular menstrual cycles participated in the study. EFT was applied to 23 students in the intervention group for 3 sessions for 3 months. No intervention was made to the control group. Measurements were made before the study started and at the end of the study. **Results:** The results of the study showed a decrease in pain scores, an increase in the mean SUE score and a decrease in the mean PMSS score in the intervention group ($p<0.001$). In the control group, there was no statistically significant difference in the mean VAS, SUE and PMSS scores before and after the intervention ($p>0.05$). **Conclusion:** The results of this study show that EFT is an effective method to reduce PMS and pain level.

**Keywords:** Pain; emotional freedom technique; menstrual cycle; premenstrual syndrome

**ÖZET Amaç:** Premenstrüel sendrom, üreme çağındaki kadınların yaşam kalitesini etkileyen önemli bir sorundur. Bu araştırma, duygusal özgürleşme tekniğinin [Emotional Freedom Technique (EFT)] premenstrual sendrom ve ağrı üzerine etkisini belirlemek amacıyla yapılmıştır. **Gereç ve Yöntemler: A**raştırma, ön test son test paralel gruplu randomize kontrollü deneysel çalışma tasarımında yapılmıştır. Araştırmanın verileri; "Kişisel Bilgi Formu", "Premenstrual Sendrom Ölçeği (PMSÖ)", "Subjektif Deneyim Birimi Ölçeği [Subjective Experience Unit Scale (SUE)]" ve "Görsel Analog Skala [Visual Analogue Scale (VAS)]" kullanılarak toplanmıştır. Araştırmaya, PMSS'den 111 ve üzeri puan alan ve düzenli menstrüel döngüye sahip 18-25 yaş aralığında 44 öğrenci katılmıştır. Müdahale grubundaki 23 öğrenciye 3 ay boyunca 3 seans EFT uygulanmıştır. Kontrol grubuna herhangi bir müdahalede bulunulmamıştır. Ölçümler çalışma başlamadan önce ve çalışma sonunda yapılmıştır. **Bulgular:** Araştırmanın sonuçları, müdahale grubunda ağrı puanlarında azalma, SUE puan ortalamalarında artış ve ortalama PMSÖ skorunda azalma olduğunu göstermiştir ($p<0,001$). Kontrol grubunun uygulama öncesi ve sonrasında ortalama VAS, SUE ve PMSÖ puan ortalamaları arasında istatistiksel olarak anlamlı bir fark bulunmamıştır ($p>0,05$). **Sonuç:** Bu araştırmanın sonuçları, EFT'nin premenstrüel sendromu ve ağrı düzeyini azaltmada etkili bir yöntem olduğunu göstermektedir.

**Anahtar Kelimeler:** Ağrı; duygusal özgürleşme tekniği; menstrüel siklus; premenstrüel sendrom

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Premenstrual Syndrome (PMS) is defined a period of physical, behavioral, and emotional symptoms that manifest during the luteal phase of the menstrual cycle.[1] Although the accurate reason for PMS is unknown, studies offer that it is associated with several psychological and sociodemographic factors (age, region of residence, marital status). PMS is one of the most common menstrual disorders affecting many young women, with epidemiologic data indicating that approximately 75% of all women experience PMS symptoms and 3-8% experience severe PMS symptoms. Studies also show that individuals reporting PMS experience more stress and anxiety and have an increased susceptibility to depressive symptoms due to hormonal fluctuations.[2,3] Studies have shown that mindfulness-based cognitive techniques are effective in treating mood disorders such as depression.[4] Modulating many PMS symptoms such as pain, stress and emotional problems that affect women's quality of life in PMS through mindfulness-based cognitive methods is thought to be an effective approach for future PMS interventions.[5-7]

Emotional Freedom Technique (EFT), a cognitive-behavioral technique, is a method used to release blockages in a person's energy body. EFT is a psychophysiological technique that combines unconscious stimulation, somatic acupuncture point stimulation, and exposure therapy.[8,9] The EFT is based on the existence of an energy system that surrounds the body. According to Chinese medicine, any physical ailment originates from a blockage occurring in any meridian within the energy body. When there is no disruption in the energy flow within each meridian, the individual experiences physical and psychological comfort. However, if there is an obstruction or blockage of energy in the meridians, the natural flow of energy cannot be maintained, resulting in physical symptoms and adverse psychological issues. Unless this energy blockage is removed, both bodily and psychological manifestations of the problem persist, and the effects of the blockage continue to multiply.[8] The goal of EFT is to focus on the negative emotion that the person has brought with them from the past or is currently experiencing, and to release the blockage created by that emotion in the energy body by tapping specific acupuncture points to ensure the normal flow of energy in the body.[8,9] In practice, individuals initially undergo exposure therapy. This therapy involves confronting situations referred to as triggers that elicit a stress response during the therapeutic process. By recalling the trigger, individuals are guided to consciously recognize and acknowledge their discomfort. At the same time, touch therapy is introduced, facilitating both cognitive transitions and energy release.[8] Touch therapy is a stage of EFT that involves tapping on meridian points located in the upper part of the body. This tapping helps regulate disrupted energy flow, thereby supporting the healing process. During touch therapy, negative signals to the brain decrease, enabling deactivating signals to reach the brain. This process stimulates the production of endogenous opioids, enhances the production of neurotransmitters such as serotonin and gamma aminobutyric acid, and regulates cortisol, which is the stress hormone.[8]

When the studies on EFT were reviewed, it reduced the fear of surgery and the anxiety level of patients before laparoscopic cholecystectomy, reduced stress and public speaking anxiety in students, reduced anger levels in people with anger problems, reduced pain levels and improved quality of life in people with chronic pain, but is not effective in significantly reducing exam anxiety in students.[10-14] These findings suggest that EFT may alleviate symptoms in individuals with PMS, improve their quality of life, positively impact their social and interpersonal connections. This research aimed to assess how EFT influences PMS and the associated pain.

## MATERIAL AND METHODS

This research was carried out at KTO Karatay University's Faculty of Health Sciences, Department of Nursing and Midwifery, between April 2023 and July 2023. It was planned as a pre-test post-test parallel group randomized controlled trial. 96 female students in the Department of Nursing and Midwifery's 4$^{th}$ grade who received in-person health education made up the study population. The research had 96 female students who consented to participate, and they were administered the Premenstrual Syndrome Scale (PMSS). The study involved 46 female students, 23 intervention and 23 control. Inclusion criteria: Turk-

ish-speaking, 18-25 years old, scored 111 and above on the PMSS and had a regular menstrual cycle (menstruation every 28 days). Women who had amenorrhea, were pregnant, had chronic medical conditions, were using premenstrual analgesics, had mental disorders, psychiatric disorders, were previously trained in EFT, or had contact problems were not accepted into the study.

## PARTICIPAINT

Participants who met the inclusion criteria were randomly assigned to the EFT group (n=23) and control (n=23) group using a computer-assisted randomization program (https://www.randomiser.org/) with a simple randomization method (Figure 1).

## DATA COLLECTION METHOD

Data were collected through face-to-face interviews using the investigator-developed "Personal Information Form", "PMSS", "Subjective Experience Unit Scale (SUE)", and "Visual Analogue Scale (VAS)".

### Personal Information Form

This form, which was developed by the researchers as a result of the literature review, consists of a total of 13 questions, including sociodemographic characteristics (age, marital status, perceived income status, etc.), characteristics related to menstruation (age at menarche, pain during menstruation, use of medication during menstruation, etc.).[15,16]

### Premenstrual Syndrome Scale

The individuals' premenstrual symptoms were assessed using PMSS. This scale asks about premenstrual symptoms in the past three months and consists of 44 five-point Likert items. The scale consists of 9 sub-dimensions, including depressed mood, fatigue, anxiety, irritability, negative thoughts, aches&pains, alterations in eating and sleeping patterns, and flatulence. The "scale total score" is the sum of the scores obtained from these sub-dimensions. On the scale, 44 is the lowest possible score and 220 is the highest.[17]

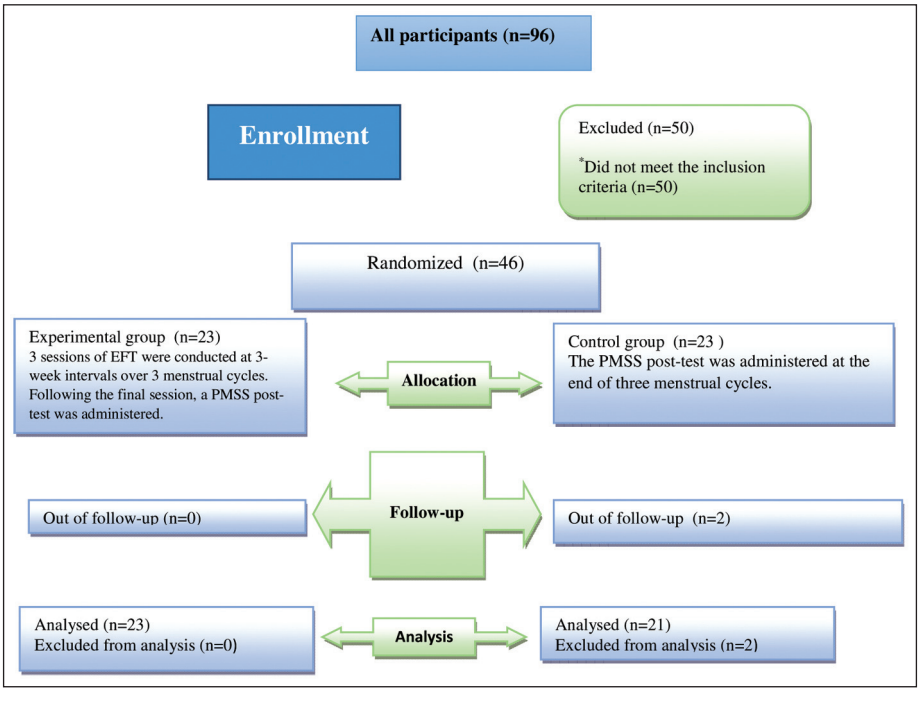


**FIGURE 1:** Consort.

EFT: Emotional freedom technique; PMSS: Premenstrual Syndrome Scale.

Reference: Boutron I, Altman DG, Moher D, Schulz KF, Ravaud P; CONSORT NPT Group. CONSORT Statement for randomized trials of nonpharmacologic treatments: a 2017 update and a CONSORT extension for nonpharmacologic trial abstracts. Ann Intern Med. 2017;167(1):40-7. PMID: 28630973.

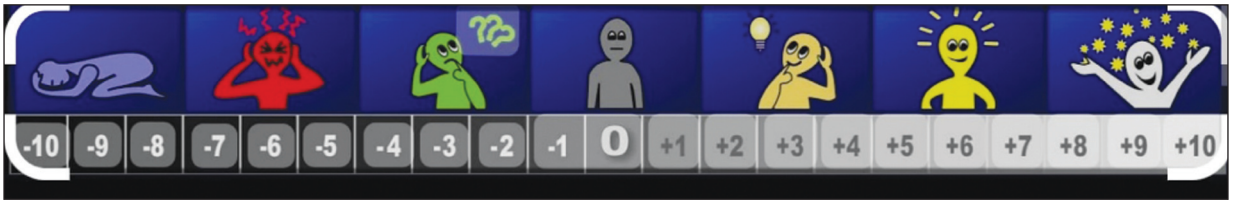


**FIGURE 2:** Subjective Experience Unit Scale.

### Visual Analog Scale

The pain levels were assessed using a 10-cm VAS. Participants were instructed that a score of "0" on one end of the scale signified an absence of pain, whereas a score of "10" at the other end denoted the highest level of pain possible. Participants were instructed to rate their pain during physical activity using a scale. The distance in centimeters between the "0" mark and the point they indicated on the scale, both before and after the intervention, was measured with a ruler and recorded.[18]

### Subjective Units of Experience Scale

The scale is used to measure emotional intensity at the start and end of an EFT session. It ranges from -10 to +10, with -10 indicating the maximum levels of pain, fear, stress, sadness, discomfort, or disappointment, and +10 representing the highest levels of joy, happiness, or overall well-being (Figure 2).[8]

## Interventions

### EFT Group

In the study, the first author received International Guild of Energists (GoE) approved EFT Foundation and EFT Master training and the second author received International GoE approved EFT Foundation training. To ensure standardization, all EFT applications and training were conducted by the 1st researcher. For each participant in the intervention group, a brief overview of EFT, including its history, functions, application steps, and tapping points, was provided before initiating the practical application phase. For the implementation, 4th-year nursing students (n=23) in the intervention group were gathered in a university classroom. The training continued until all students had learned how to use EFT, with each participant individually shown the application steps through visual demonstration. The training session for the intervention group lasted 45 minutes. Students were asked to voluntarily provide their telephone numbers and the date of their last menstrual cycle, after which a date was set for the 1st session. PMS typically occurs during the luteal phase of the menstrual cycle.[19] For this reason, students were contacted 14 days before their menstrual period, and the 1st EFT session was conducted individually by the 1st researcher. The 2nd and 3rd sessions were conducted face-to-face by the 1st researcher 14 days before menstruation. In total, 3 EFT sessions were administered for each participant.

### EFT Application Steps

The EFT protocol is implemented in 6 steps.[8]

**Taking the heart chakra healing position:** At the start of EFT, the student was asked to assume the heart chakra healing position (Figure 3), close their eyes and take 3 deep breaths.

**Identification of the problem:** The participant's perspective on menstruation, concerns, fears and stressors in her life were discussed. Then, in order to apply the EFT protocol, the participant's

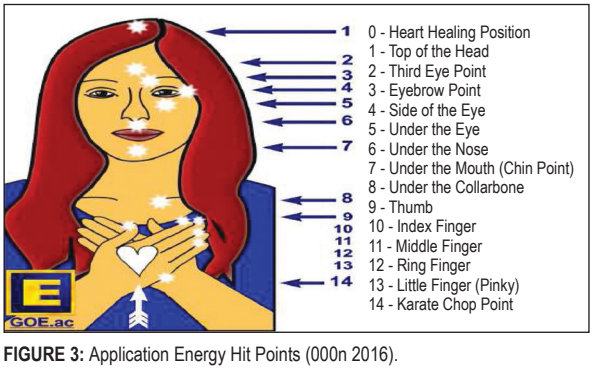


**FIGURE 3:** Application Energy Hit Points (000n 2016).

problem was identified and the emotions it aroused in the participant (fear of pain, fear of suffering, discomfort of the menstrual cycle, etc.).

**Create a setup sentence:** In the next stages of the application, a short emotional statement was created to help remember the question ("I am afraid of experiencing pain", "Menstruation makes me feel uncomfortable"). The emotional statement was repeated 3 times.

**Assessment of emotion:** In order to assess the intensity of the identified emotion, the participant was asked to rate the emotion they felt on the SUE scale (Figure 2) with their eyes closed in the "heart chakra healing position" (Figure 3), i.e. at the zero point.

**Performing tapping:** After the evaluation, under the guidance of the researcher, the student started tapping the EFT acupuncture points with one or 2 fingertips in sequence (starting from point 1 to point 14) (Figure 3). The tapping was performed by doing negative EFT in the first round ("I am afraid of experiencing pain", "Menstruation makes me restless"), releasing it in the 2nd round ("I release my fear of experiencing pain") and positive EFT in the 3rd round ("I accept the menstruation process", "My body is strong and ready for menstruation", "I choose to be comfortable with my anxiety", "I want health/healing for my body to be free from my complaints").

**Re-evaluation:** After the strokes were completed, the student was asked to return to the heart chakra healing position (Figure 3), take 3 deep breaths and drink some water. The application of EFT was terminated by re-running the emotional assessment with SUE. If the student still felt the intensity of the emotion at a negative level or reported being at zero on the SUE scale at the end of the session, the EFT steps were repeated.

### CONTROL GROUP

No application was made to the control group. Following the performing of the pre-test, data were gathered from PMSS, VAS and SUE post-test during the luteal stage of the 3rd period (Figure 1). After data were documented, researchers conducted EFT with the students in the control group.

### STATISTICAL ANALYSIS

Data analysis was performed using IBM SPSS (Statistical Package for the Social Sciences) Statistics version 27.0 (IBM Corp., Armonk, NY, USA). Histograms and the Shapiro-Wilk test were 2 analytical and visual techniques used to assess the normality of the variable distributions. Categorical and continuous variables are described using descriptive statistics (mean, standard deviation, number, percentile). The distribution of the data was evaluated utilizing Shapiro-Wilk test. Parametric tests were utilized to investigate variables that displayed a normal distribution. To compare features and clinical indices between groups, independent sample t-tests and chi-square tests were used, with multiple comparisons using Bonferroni correction. A mixed-design one-way analysis of variance was utilized to examine the changes in variables over time. Statistical significance was evaluated with a significance level set at $p<0.05$.

### ETHICAL APPROVAL

The research was approved by the KTO Karatay University Pharmaceutical and Non-Medical Device Research Ethics Committee on March 31, 2023 and number E-41901325-200-57890. Institutional permission was obtained from KTO Karatay University School of Health Sciences. Prior to data collection, the study was filed at www.clinicaltrials.gov (NCT06000579). All procedures were completed in conformity with ethical norms and the 1964 Helsinki Declaration of Human Rights. After explaining the study's purpose to the participants, we obtained their written informed consent and informed them that they could leave the research at any point. We kept everyone participants' personal data confidential and reported it collectively.

## RESULTS

Table 1 shows the distribution and comparisons of the students in the intervention and control groups according to their demographic characteristics (Table 1). There is no statistically significant difference between the distribution of demographic characteristics of the students according to the groups ($p>0.05$).

**TABLE 1:** Comparison of the descriptive characteristics of the participants according to groups (n=44).

| | Group | | |
|---|---|---|---|
| | Experimental n=23 | Control n=21 | Test (p value) |
| Age | | | |
| $\bar{X}$±SS | 22.57±2.04 | 22.67±0.97 | t=-0.207 |
| M (minimum-maximum) | 22 (21-29) | 23 (21-26) | p=0.837 |
| Income status n (%) | | | |
| Good | 7 (%30.4) | 4 (%19) | $\chi^2$=0.759 |
| Middle | 16 (%69.6) | 17 (%81) | p=0.384 |
| Family type n (%) | | | |
| Nuclear family | 19 (%82.6) | 19 (%90.5) | $\chi^2$=0.577 |
| Extended family | 4 (%17.4) | 2 (%9.5) | p=0.448 |
| Place of residence n (%) | | | |
| City | 16 (%69.6) | 17 (%81) | $\chi^2$=0.759 |
| District/village/town | 7 (%30.4) | 4 (%19) | p=0.384 |
| Marital status n (%) | | | |
| Single | 22 (%95.7) | 20 (%95.2) | $\chi^2$=0.004 |
| Single | 1 (%4.3) | 1 (%4.8) | p=0.947 |
| Smoking n (%) | | | |
| Yes | 3 (%13) | 4 (%19) | $\chi^2$=0.296 |
| No | 20 (%87) | 17 (%81) | p=0.587 |
| Alcohol consumption n (%) | | | |
| Yes | 1 (%4.3) | 2 (%9.5) | $\chi^2$=0.463 |
| No | 22 (%95.7) | 19 (%90.5) | p=0.496 |
| Regular sports n (%) | | | |
| Yes | 5 (%21.7) | 0 (%0) | $\chi^2$=3.218 |
| No | 18 (%78.3) | 21 (%100) | p=0.073 |
| Most frequently consumed food group n (%) | | | |
| Vegetables-fruit | 10 (%43.5) | 8 (%38.1) | $\chi^2$=3.403 |
| Fast food products | 4 (%17.4) | 12 (%57.1) | p=0.065 |
| Dried pulses | 2 (%8.7) | 1 (%4.8) | |
| Meat group | 7 (%30.4) | 0 (%0) | |
| Menarche age | | | |
| $\bar{X}$±SS | 13.57±0.99 | 12.86±1.31 | t=2.002 |
| M (minimum-maximum) | 13 (12-16) | 13 (10-15) | p=0.053 |
| Experience of pain during menstruation | | $\chi^2$=2.530 | |
| | | p=0.112 | |
| No | 6 (%28.6) | 3 (%14.3) | $\chi^2$=4.576 |
| Slight pain | 15 (%71.4) | 5 (%23.8) | p=0.206 |
| The 1st 1-2 days | | $\chi^2$=0.159 | |
| | | p=0.690 | |
| During the period of menstruation | 4 (%17.4) | 1 (%4.8) | |
| Use of medication due to problems experienced in the premenstrual period n (%) | | | |
| Yes | 12 (%52.2) | | |
| No | 11 (%47.8) | | |
| The mother's premenstrual syndrome n (%) | | | |
| Yes | 9 (%39.1) | 7 (%33.3) | |
| No | 14 (%60.9) | 14 (%66.7) | |

t: Independent Sample t-test; $\chi^2$: Chi square test; SD: Standard deviaton. Summary statistics are given as mean±standard deviation and Median (minimum-maximum) for numerical data and as number (percentage) for categorical data.

Table 2 shows the comparison of SUE measurements according to the groups at follow-up times. The mean SUI before the 1st EFT did not show a statistically significant difference between the groups (p>0.05). At other measurement times, the intervention group was statistically higher than the control group (p<0.05). In the intervention group, the measurements taken after EFT were statistically higher than the measurements taken before EFT (p<0.05) (Table 2).

Table 3 shows the comparison of VAS measurements according to the groups at follow-up times. At the 1st measurement, the mean VAS did not show a statistically significant difference between the groups (p>0.05). At the last measurement time, the intervention group was statistically lower than the control group (p<0.05). In the intervention group, the last measurements were statistically lower than the first measurements (p<0.05). In the control group, there was no statistically significant difference within the group (p>0.05) (Table 3).

Table 4 shows the comparison of PMSS scores according to the groups at follow-up times. At the 1st measurement, the mean PMSS total score did not show a statistically significant difference between the groups (p>0.05). At the last measurement time, the intervention group was statistically lower than the control group (p<0.05). In the intervention group, the mean PMSS total score was statistically lower in the last measurements than in the 1st measurements (p<0.05) (Table 4).

## DISCUSSION

The investigation uses a randomized controlled trial design to investigate the effect of EFT on PMS and pain. Three cycles of EFT were applied to the participants. As a consequence of the application, a decrease in pain scores, an increase in SUE mean scores and a decrease in PMSS mean scores were observed in the intervention group (p<0.05). When the mean VAS, SUE and PMSS scores of the control group before and after the intervention were analyzed, a decrease in pain scores and an increase in mean SUE and PMSS scores were found, but this difference was not statistically significant (p>0.05). Although there was not a statistically significant difference in the re-

**TABLE 2:** Comparison of Subjective Experience Unit Scale (SUE) measurements according to groups at follow-up times.

| | Group | | Test statistics† | | |
|---|---|---|---|---|---|
| | Experimental n=23 | Control n=21 | F | p value | $\eta^2$ |
| SUE | | | | | |
| Before 1st EFT | -0.43±3.87$^{bc}$ | -2.90±3.51$^{c}$ | 4.008 | 0.053 | 0.088 |
| After 1st EFT | 2.91±3.01$^{a}$ | -3.62±3.58$^{c}$ | **43.067** | **<0.001** | **0.506** |
| 2nd EFT before | 1.70±4.05$^{b}$ | -2.81±3.56$^{c}$ | **15.238** | **<0.001** | **0.266** |
| After 2nd EFT | 4.26±3.09$^{a}$ | -2.43±4.28$^{c}$ | **35.720** | **<0.001** | **0.460** |
| Before 3rd EFT | 1.43±2.73$^{b}$ | -3.10±3.25$^{c}$ | **25.199** | **<0.001** | **0.375** |
| After 3rd EFT | 4.91±1.95$^{a}$ | -2.71±3.66$^{c}$ | **76.174** | **<0.001** | **0.645** |
| Test statistics$^{\phi}$ | **F=28.429 p<0.001 $\eta^2$=0.789** F=0.886 p=0.500 $\eta^2$=0.104 | | | | |
| Statistical model | **Group effect:** F=75.161 p<0.001 $\eta^2$=0.642; **Time effect:** F=5.525 p<0.001 $\eta^2$=0.116 | | | | |
| | **Group×Time effect:** F=4.423 p<0.001 $\eta^2$=0.095 **Power=0.966** | | | | |

†Comparison between groups; ϕComparison within groups; a>b>c: Different letters or combinations of letters on the same line represent statistically significant differences (p<0.05). F: Mixed design one-way analysis of variance; $\eta^2$: Effect size; SUE: Subjective Experience Unit Scale; EFT: Emotional freedom technique. Summary statistics are presented as mean±standard deviation. Sections highlighted in bold are statistically significant (p<0.05).

**TABLE 3:** Comparison of VAS measurements according to groups at follow-up times.

| | Group | | Test statistics† | | |
|---|---|---|---|---|---|
| | Experimental n=23 | Control n=21 | F | p value | $\eta^2$ |
| VAS | | | | | |
| Pre-test | 3.57±2.29 | 3.38±2.77 | 0.058 | 0.810 | 0.001 |
| Posttest | 1.48±1.38 | 2.90±2.32 | **6.273** | **0.016** | **0.130** |
| Test statistics$^{\phi}$ | **F=8.819 p=0.005 $\eta^2$=0.174** F=0.419 p=0.521 $\eta^2$=0.010 | | | | |
| Statistical model | **Group effect:** F=1.980 p=0.167 $\eta^2$=0.045; **Time effect:** F=6.349 p=0.016 $\eta^2$=0.131 | | | | |
| | **Group×Time effect:** F=2.507 p=0.121 $\eta^2$=0.056 **Power=0.340** | | | | |

†Comparison between groups; ϕComparison within groups; F: Mixed design one-way analysis of variance; $\eta^2$: Effect size; VAS: Visual Analogue Scale. Summary statistics are presented as mean±standard deviation. Sections highlighted in bold are statistically significant (p<0.05).

**TABLE 4:** Comparison of PMSS scores by groups at follow-up times.

| | Group | | Test statistics† | | |
|---|---|---|---|---|---|
| | Experimental n=23 | Control n=21 | F | p value | $\eta^2$ |
| PMSS | | | | | |
| Pre-test | 134.83±30.68 | 124.76±24.71 | 1.419 | 0.240 | 0.033 |
| Posttest $^{\&}$ | 89.13±27.43 | 129.52±27.06 | **24.108** | **<0.001** | **0.365** |
| Test statistics $^{\phi}$ | **F=41.806 p<0.001 $\eta^2$=0.499** F=0.415 p=0.523 $\eta^2$=0.010 | | | | |
| Statistical model | **Group effect:** F=5.302 p=0.026 $\eta^2$=0.112; **Time effect:** F=16.011 p<0.001 $\eta^2$=0.276 | | | | |
| | **Group×Time effect:** F=24.328 p<0.001 $\eta^2$=0.367 **Power=0.998** | | | | |

†Comparison between groups; ϕComparison within groups; &Comparison of 1st and last score differences between groups. F: Mixed design ANOVA. $\eta^2$: Effect size; PMSS: Premenstrual Syndrome Scale. Descriptive statistics are given as mean±standard deviation. The sections highlighted in bold are statistically significant (p<0.05).

duction of pain scores and increase in mean SUE values in the control group, it is possible that these changes were influenced by participants' increased awareness of PMS during the study.

When the studies conducted to reduce premenstrual symptoms are examined; swimming exercise, music therapy, acupuncture and yoga were found to be effective methods to reduce premenstrual symp-

toms.[15,20,21] EFT is a practice supported by evidence that draws on principles from energy psychology, integrating aspects of cognitive behavioral therapy, exposure therapy, and the stimulation of acupuncture points on the body and face.[22-25] EFT has been demonstrated to be effective for both psychological and physiological symptoms in many studies in the literature.[10,22,24,26,27] EFT is easy to learn and apply, non-pharmacological, cost-free, safe and powerful in reducing many symptoms such as stress, anxiety and burnout.[9,22,28-30] Although the studies in the literature are limited, it is reported that EFT is an effective method to reduce premenstrual symptoms.[6] The study's conclusions support previous research in the field and demonstrate that EFT is a useful technique for easing premenstrual symptoms.

According to the study, students in the intervention group who had EFT had less pain in the post-test ($p<0.05$). A review of the studies conducted in the literature to determine the effect of EFT on pain found that EFT had a beneficial impact on pain intensity and on the degree of discomfort and the standard of living in individuals with chronic and that EFT significantly reduced the incidence and intensity of headache episodes in patients with tension-type headaches.[13,31] Additionally, evidence suggests that EFT offers positive therapeutic effects for managing dysmenorrhea.[6,32] The research findings are similar to the literature and show that EFT is a feasible method for reducing pain intensity.

The study evaluated the emotional state of students in the intervention and control using the SUE scale, used in energy therapies like EFT. Prior to the 1st EFT session, there wasn't a statistically significant difference in SUE scores among the groups ($p>0.05$). At other measurement times, the scores of the intervention group were higher and statistically significant in contrast to the control group ($p<0.05$). In examining the findings of the SUE scale in studies of EFT in the literature, we find that, Dincer and Inangil found that EFT significantly reduced the level of stress, anxiety burnout and increased the average SUE score, determined that EFT increased the SUE scale scores by reducing exam anxiety in students.[28,33] Studies show that the somatic effects of EFT, which includes fingertip percussion of 12 acupuncture points, provide a treatment effect beyond cognitive and exposure effects.[9,34] The outcomes of the study are consistent with previous research and show that EFT can elevate mood by raising the average score on the SUE.

### LIMITATIONS AND STRENGTHS OF THE STUDY

The study has disadvantages including the reality that the data obtained are only valid for the measurement tools used and the participants who took part in the study. For therefore, it is not feasible to generalize the results to the general population. The study has several strengths, including its randomized controlled design, post hoc power analysis to evaluate the sample size, measurements taken before and after EFT, three cycles of follow-up, and the introduction of a low-cost method for preventing PMS and reducing pain severity to the literature.

## CONCLUSION

The findings of the research demonstrated that students who underwent EFT had reduced PMS and pain severity and had positively increased mood. EFT is a safe and effective cognitive-behavioral method that can be applied anytime and anywhere in terms of its easy applicability and rapid effect. Therefore, it can be recommended that EFT can be easily used in clinical applications as an effective method by reducing the need for pharmacological methods. It is recommended that the findings of the study be replicated in different and larger sample groups.

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***Conflict of Interest***

*No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.*

***Authorship Contributions***

*All authors contributed equally while this study preparing.*

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