

Emotional Freedom Technique for Reducing Primary Dysmenorrhea Intensity among Female Students

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Abstract

Dysmenorrhea is frequently described as painful menstruation that causes lower abdomen cramps and often spreads to the thighs and lumbosacral area. The present study aimed to evaluate the effectiveness of Emotional Freedom Technique for reducing primary dysmenorrhea intensity among female students. **Design:** A one-group pre-post-test procedure was utilized in a quasi-experimental design. **Methods:** A convenient sample of 161 female nursing students from Faqous High Institute of Nursing at Zagazig University in El Sharkia Governorate was assigned to participate in the study. Tools: 1) a structured interviewing questionnaire sheet and 2) a visual analog scale. **Results:** The mean score of the visual analogue scale was reduced among studied female students after the intervention compared to before the intervention, which was (9.2±1.3 vs7.8±1.4) with a 15.2 percent of improvement. **Conclusion:** The Emotional Freedom Technique effectively reduces pain intensity and dysmenorrhea symptoms, which is quick and effective for self-treatment. **Recommendation:** Educating all students about the advantages of the Emotional Freedom Technique for minimizing dysmenorrhea during menstruation is important.

Keywords: *Dysmenorrhea, Emotional Freedom Technique & Students.*

Introduction:

Most gynecological problems in women are related to the menstrual cycle, including dysmenorrhea, premenstrual syndrome, and hirsutism. Dysmenorrhea is the most prevalent of these disorders (Rokayah & Rumiatur., 2020).

Dysmenorrhea, also referred to as painful menstruation, is characterized by severe cramping in the lower abdomen that is frequently accompanied by other symptoms such as sweating, headaches, nausea, vomiting, diarrhea, and shivering that occur just before or during the menses, usually at the beginning of the menstrual flow, which lasts for the first 24-48 hours (Itani et al., 2022). Estimates of the prevalence of dysmenorrhea in adolescents and young adults range from 34% to 94% (Pourramezani et al., 2022). Primary dysmenorrhea (PD) is discomfort related to menstruation without an underlying cause, is the main factor in most painful menses in ovulating women, and can cause mild discomfort or severe pain. It is typically stronger on the first day of the period and gradually gets weaker. Secondary dysmenorrhea includes endometriosis leiomyoma, pelvic inflammatory disease, and interstitial cystitis (Guimarães & Póvoa., 2020).

Some women have just moderate discomfort, while others experience significant functional limits during their periods. Lower abdominal and back pains are

most strongly linked to missed work or school days or diminished productivity among all menstrual-related problems. The symptoms of up to 15% of dysmenorrhea women can be so severe that they cannot attend work, school, or other activities (Ullah et al., 2021).

Although the pathophysiology of primary dysmenorrhea is uncertain, one of the most frequently accepted theories is that during menstruation, the endometrium produces prostaglandins and other inflammatory compounds like Leukotriene (Fernández et al., 2021). As evidenced by the elevated E2 and F2 levels in the endometrium of women with primary dysmenorrhea, the first dysmenorrhea appears to be caused by an overproduction of PGF2 or a growing ratio of PGF2α to PGE2. Prostaglandins can cause strong uterine contractions, exhaustion, lightheadedness, headaches, nervousness, and other related symptoms (Hertz et al., 2017).

Today, a range of menstrual pain management techniques are used, most commonly divided into two categories: medical and non-medical approaches. Although drugs have rapid effects, prolonged use may cause diarrhea, peptic ulcers, gastrointestinal problems, and nausea. Additionally, 10–20% of individuals experience ineffectiveness with these drugs. Due to this, women have recently become

increasingly interested in non-pharmacological therapies, which are simple, inexpensive, non-invasive, and have no adverse side effects. Non-pharmacological treatments include relaxation techniques, yoga, music therapy, etc (Lindquist et al., 2018).

The Emotional Freedom Techniques (EFT) is a technique that is also becoming more popular around the world (Günüşen et al., 2018). This self-help technique incorporates conscious awareness of thoughts and feelings with a gentle touch. With our concentration on a problem or issue we want to solve, EFT involves tapping with our fingertips on acupuncture/acupressure points on the face, hands, and body. The Emotional Freedom Techniques, also called "tapping," helps relieve primary dysmenorrhea's physical and emotional symptoms. Gary Craig created EFT, which involved lightly tapping on the body on 12 acupressure sites (also known as acupoints) (Figure 1). The acupoints are situated along the body's meridians, or virtual energy channels. The "Basic Recipe," or the entire EFT protocol, consists of eight points. The Emotional Freedom Techniques has been proven to be successful in treating primary dysmenorrhea (Feinstein, 2019).

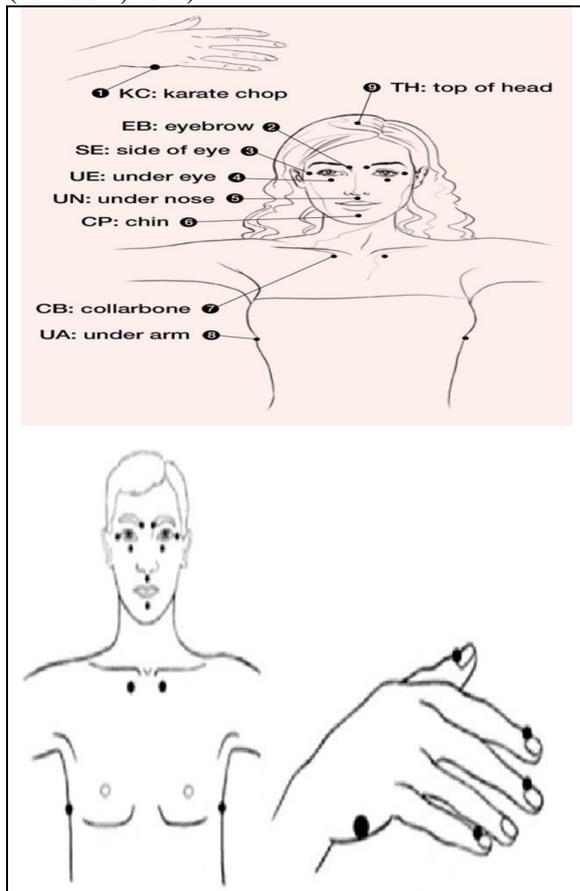


Figure (1): Shows EFT tapping points

Nelms, & Castel, (2016). A systematic review and meta-analysis of randomized and nonrandomized trials of clinical emotional freedom techniques (EFT) for the treatment of depression. 12(6), 416-426.

Energy psychology includes EFT as one of its modalities. To soothe the stress/distress reaction in the body, EFT combines elements of exposure therapy, cognitive therapy, and acupressure (Bach et al., 2019). According to allopathic theories, the hypothalamic-pituitary-adrenal axis is stimulated to start the stress response, decreasing once the stress has passed. But when pressure is persistent, as it often is in modern life, the release of stress hormones like cortisol, norepinephrine, and adrenaline continues. The amygdala, hippocampus, and areas of the brain associated with anxiety become more active due to this recurrent stimulus (Gilomen et al., 2015). The amygdala is a key in managing emotions, especially fear and anxiety. The amygdala has been found to be active during acute pain in neuroimaging investigations. Acute amygdala inactivation can start standardizing motion through neuroplasticity, leading to long-term physiological and therapeutically important effects (Qiu et al., 2016).

Significance of the study:

Primary dysmenorrhea is a painful menstrual period that is typically cramped and centered on the lower abdomen. It is one of the most prevalent health issues among women under the age of 25 and a leading cause of temporary absences from school or job, which causes a sizable economic loss. It can occasionally be so severe that it interferes with daily activities (Qiu et al., 2016 & Bakir et al., 2022). The prevalence of dysmenorrhea is relatively high worldwide. A technique to lessen menstrual pain is required because female students tend to bury their complaints (Irmak & Aslan., 2019). The Emotional Freedom Technique is a natural method of reducing menstruation pain and related symptoms. It is a secure, non-invasive, affordable, and cost-free method of pain relief, especially for young women who prefer to talk to their mothers and friends than medical professionals about their painful periods and other symptoms. Thus the current research aimed to determine the effectiveness of the Emotional Freedom Technique for reducing primary dysmenorrhea intensity among female students.

Aim of the current study:

The present study aimed to evaluate the effectiveness of Emotional Freedom Technique for reducing primary dysmenorrhea intensity among female students.

Hypothesis:

Students who experience primary dysmenorrhea may have benefit from applying the Emotional Freedom Technique.

Subjects and Methods:

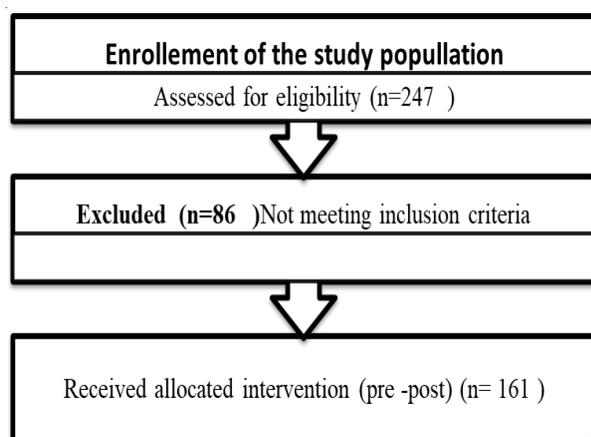
Design of the Study: The current study used a quasi-experimental design (pre-posttest).

Study setting:

The study was conducted at Zagazig University's Faqus High Institute of Nursing in the El Sharkia Governorate, Egypt.

Sample Type and size:

A convenient sample of 161 female nursing students volunteered to participate in the study with primary dysmenorrhea from 247 of the all-female students at Zagazig University's Faqus High Institute of Nursing in the El Sharkia Governorate (figure 2). The researcher excluded the students who didn't meet the inclusion criteria.

**Inclusion criteria:**

Unmarried female students do not use any medications that impact or regulate the menstrual cycle, follow any special diets, and have regular menstrual cycles of 21–35 days without any menstrual irregularities or pelvic disorders.

Exclusion criteria:

The students who use sedatives or analgesics, have signs and symptoms of pelvic inflammatory disease, a history of abdominal and pelvic surgery, and refuse to participate in the study.

Tools for collecting data:

The data collection process involved two tools. These included a structured questioning questionnaire for students about primary dysmenorrhea and visual analogue pain scale.

Tool I: Structured interviewing questionnaire form. It was composed of (1) Socio-demographic characteristics which included their age, residences and income. Measuring weight, height and calculate body mass index of each female. BMI is calculated using the formula kg/m^2 , where kg stands for a person's weight in kilograms and m^2 for their height in meters squared. Overweight is defined as having a BMI of 25, while a healthy range is 18.5 to 24.9 (Prentice & Jebb., 2001).

(2) Menstrual characteristics, such as the age at menarche, pattern and interval of menstrual cycle, blood loss and duration of menses and initial onset of menstrual pain.

(3) Characteristics of dysmenorrheal pain, including timing, location and intensity.

(4) Physical symptoms associated with menstruation in students with primary dysmenorrhea include dizziness, headache, irritability, diarrhea, constipation, nausea, vomiting, breast tenderness, fatigue, acne, food craving, abdominal pain and bloating, dysuria, and backache. Psychological symptoms associated with menstruation in students with primary dysmenorrhea include nervousness, crying, sadness, Irritability, a sense of embarrassing and sensitivity to light or sound.

Tool II: Visual Analogue Scale (VAS, Numeric scale):

It was used to evaluate "menstrual discomfort intensity" by Delgado in 2018 (Delgado et al., 2018). It consists of a blank line with adjectives describing the depths of pain anchored at each end of the line. The most common anchoring adjectives are "no pain" (zero scores) and, "1-3" (mild pain),"4-6 (moderate pain), "7-9" (severe pain), "(10) (worst pain).The student was instructed to make a mark on the line that best represents their pain level. This scale measures sensory and emotional dimensions. It takes two to five minutes to complete this tool. These scores were noted for the nursing students before and after the intervention.

Content Validity and reliability:

A panel of five professionals in the field of "obstetrics and gynecological and community nursing" reviewed the study tools to assess the content validity. The panel's assessment of the sentence clarity and relevance of the content guided the modifications. A reliability analysis was performed to look at the internal consistency of the study's instrument. The degree to which every question on the survey measures the same concept or construct is referred to as internal consistency. To investigate the measurement reliability using multipoint items, the Cronbach alpha coefficients were computed. The Cronbach alpha coefficient's acceptable ranges are 0.60 to 0.95.

Ethical Considerations:

The dean of the Faqus High School of Nursing gave his official approval. The study was accepted by the faculty of nursing at Zagazig University's scientific research ethics council by date 16/1/2022. In order to gain their written consent approval to participate in the study, the researcher presented themselves to the students who met the inclusion criteria and explained the study's goal to them. Their participation in the study is voluntary, and they are free to leave at any

time. The researcher ensured that there were no risks or health hazards. All students were informed that all information would only be utilized for scientific study purposes and that their privacy and confidentiality would be respected.

A pilot study:

It was carried out on 10% of the female students, who were randomly chosen and not included in the study's primary sample, were subjected to it. Its objective was to assess the tools' clarity and simplicity. It was also helpful in estimating how long it would take to complete the forms. The results of the pilot research led to some straight forward improvements that involved rephrasing a few inquiries.

Fieldwork:

Data were gathered during eight-month period, from begging of February 2022 to the end of September 2022. The researchers introduced themselves and briefly described the purpose of the study to the participants in order to obtain their cooperation. All female students gave informed consent after receiving complete information about the study. All female students were made aware of their right to choose not to participate. The researchers were available daily at High Institute of Nursing. The following steps were used to carry out the research's objective: interviews, assessment, intervention, and evaluation phases.

Interviewing phase (pre-intervention phase):

In the first menstrual cycle of students before education about emotional freedom technique, the researchers explained the assessment sheet questions to students after receiving their signed consent to participate in the study then a baseline interview followed and filled the questionnaire individually at High Institute of Nursing clinic. The questions contained data about Socio-demographic characteristics of the students, their menstrual history and physical and psychological symptoms associated with menstruation. Each meeting lasted roughly 15 to 20 minutes.

Assessment phase:

Students girls were asked to come High Institute of Nursing clinic at the time of the menses. The intensity of menstrual pain were assessed using the Visual Analogue Scale (VAS Tool II), which was used both before and after the intervention. The assessment lasted roughly 10 to 15 minutes.

The intervention phase:

The researchers explained to students how to practice Emotional freedom technique through two sessions, each session lasting around two hours. Specific objectives have been specified for each of the two sessions of this intervention. The educational booklet was distributed to each female student, and the lesson was carried out utilizing various teaching techniques, including brainstorming, lectures, discussions,

demonstrations, data shows, and multiple media, including video and photos. Summary, feedback, and more clarification for ambiguous topics were done at the conclusion of each session.

Following the interview phase, **the first session** began and covered the definition of dysmenorrhea, risk factors, and how pain affects daily activities, absenteeism, sleep quality, and lifestyle.

Using EFT was the topic of **the second session**, which was held after the severity of the dysmenorrhea, had been assessed. The authors then presented EFT visually (Oral et al., 2020). The researcher instructed the students to tap on their bodies after she demonstrated the EFT tapping techniques on her own (face and torso). Questions regarding the EFT application have been addressed. The program continued until all Students had received individualized instruction and had learned how to use EFT. The study group received training for an average of 35 minutes. Each student voluntarily provided their phone numbers and dates of their most recent menstrual cycle. The researcher indicated that she would phone them each week to remind them to practice EFT and would address any questions they might have. The students were instructed to contact with the researcher to schedule the posttest after undergoing three menstrual cycles following the pretest. The researchers called every student during the premenstrual phase of each menstrual cycle to encourage the use of EFT daily in the morning at the time of menses within three consecutive months under the supervision of researchers.

EFT tapping

The Basic Recipe, which is the EFT protocol, consists of the stages below (Vural et al., 2019).

- (1) Before tapping, evaluate discomfort level. The participants rate their symptoms on a scale of 0 to 10, with 0 representing no pain and 10 representing the worst pain.
- (2) Tap on the side of the hand point (acupressure) while uttering a Setup that incorporates an exposure therapy issue statement and cognitive therapy acceptance statement, such as "Even though I feel incredibly bloated right now, I firmly and definitely approve of myself."
- (3) Saying a Reminder Phrase like "This bloated sensation" while tapping on the 8–12 EFT acupoints (Figure I) is effective.
- (4) Complete the 9 Gamut Procedures. While executing certain eye motions, singing, and counting while keeping the issue in mind, taps on the Gamut point on the back of the hand (based on the principles of Eye Movement Desensitization and Reprocessing, EMDR).
- (5) Tap the 8–12 acupoints again.

(6) To check for any changes in the symptom, rate the level of intensity of pain (no pain, mild, moderate, severe and worst pain) on the VAS scale.

Evaluation phase:

The researchers met with each student after they had gone within three menstrual cycles at time of menses and gave them the VAS as a posttest to gauge how much pain they had experienced following the EFT process.

Statistical analysis

All data were collected, tabulated and statistically analyzed using SPSS Statistics for Windows, Version 23.0 (IBM Corp., 2012). Quantitative data were

expressed as the mean \pm SD & (range), and qualitative data were expressed as number & (percentage). Percent of categorical variables were compared using Chi-square test. Marginal Homogeneity Test was used to compare ordinal paired variable. All tests were two sided. P-value $<$ 0.05 was considered statistically significant, P-value $<$ 0.001 was considered highly statistically significant, and P-value \geq 0.05 was considered statistically insignificant (Field., 2013).

Results

Table (1): Socio-demographic characteristics of studied students (n.161)

| Variables | | n. | % |
|-----------------|------------------|-----|------|
| Age per years | 18 to < 19years | 60 | 37.3 |
| | 19 to < 20 years | 60 | 37.3 |
| | 20 years | 41 | 25.5 |
| Mean \pm SD | 18.9 \pm 0.78 | | |
| Range | 18-20 | | |
| Residence | Rural | 126 | 78.3 |
| | Urban | 35 | 21.7 |
| Income | Sufficient | 109 | 67.7 |
| | Insufficient | 52 | 32.3 |
| Body mass index | Normal weight | 71 | 44.1 |
| | Over weight | 77 | 47.8 |
| | Obese | 13 | 8.1 |

SD: Standard deviation

Table (2): Menstrual characteristics of studied students (n.161)

| Variables | | n. | % |
|---------------------------------|--------------------------|-----|------|
| Age of menarche | < 12 years old | 41 | 25.5 |
| | \geq 12 years old | 120 | 74.5 |
| Menstrual cycle interval | <21 days | 34 | 21.1 |
| | 21<35 days | 111 | 68.9 |
| | \geq 35 days | 16 | 9.9 |
| Menses duration | Normal (1-7 days) | 141 | 87.6 |
| | Long (8-15 days) | 20 | 12.4 |
| Menstrual pattern | Regular | 92 | 57.1 |
| | Irregular | 69 | 42.9 |
| Menstrual blood loss | Few | 8 | 5.0 |
| | Moderate | 128 | 79.5 |
| | Heavy | 25 | 15.5 |
| Initial onset of menstrual pain | Menarche | 65 | 40.4 |
| | <1 year after menarche | 38 | 23.6 |
| | 1-2 years after menarche | 42 | 26.1 |
| | More than 2 years | 16 | 9.9 |

Table (3): Dysmenorrheal pain characteristics of studied students (n.161)

| Variables | n. | % |
|---------------------------------|-----|------|
| Time of dysmenorrhea | | |
| Days before menses | 39 | 24.2 |
| Pre menses | 22 | 13.7 |
| With menses & after 24 hrs | 35 | 21.7 |
| With menses and for 48 hrs | 19 | 11.8 |
| Pre and with menstruation | 46 | 28.6 |
| Site of menstrual pain # | | |
| Pelvic or lower abdominal pain | 142 | 88.2 |
| Low back pain | 110 | 68.3 |
| Low limbs | 87 | 54.0 |
| Lumbosacral pain | 56 | 34.8 |
| Genital pain | 63 | 39.1 |

More than one answer

Table (4): Physical symptoms associated with dysmenorrhea in studied students pre and post intervention (n.161)

| Physical symptoms | Pre | | post | | Mc nemar | p |
|--------------------|-----|------|------|------|----------|--------|
| | n. | % | n. | % | | |
| Dizziness | 103 | 64.0 | 65 | 40.4 | 12.250 | 0.0001 |
| Headache | 101 | 62.7 | 67 | 41.6 | 19.385 | 0.0001 |
| Diarrhea | 66 | 41.0 | 49 | 30.4 | 4.123 | 0.0280 |
| Constipation | 40 | 24.8 | 26 | 16.1 | 38.710 | 0.0001 |
| Nausea | 87 | 54.0 | 59 | 36.6 | 1.823 | 0.0300 |
| Vomiting | 72 | 44.7 | 46 | 28.6 | 25.494 | 0.0001 |
| Breast tenderness | 93 | 57.8 | 64 | 39.8 | 36.172 | 0.0001 |
| Fatigue | 123 | 76.4 | 72 | 44.7 | 4.706 | 0.0301 |
| Acne | 83 | 51.6 | 56 | 34.8 | 45.853 | 0.0001 |
| Food craving | 66 | 41.0 | 45 | 28.0 | 19.014 | 0.0001 |
| Abdominal bloating | 118 | 73.3 | 73 | 45.3 | 3.371 | 0.0421 |
| Dysuria | 59 | 36.6 | 46 | 28.6 | 63.013 | 0.0001 |
| Backache | 133 | 82.6 | 82 | 50.9 | 5.438 | 0.0221 |

p: significant $p < 0.05$

Table (5): Psychological symptoms associated with dysmenorrhea in studied students pre and post intervention (n.161)

| Psychological symptoms | Pre | | post | | Mc nemar | p |
|-------------------------------|-----|------|------|------|----------|--------------------|
| | n. | % | n. | % | | |
| Change in sleeping pattern | 121 | 75.2 | 83 | 51.6 | 41.344 | 0.0001 |
| Nervousness | 129 | 80.1 | 85 | 52.8 | 3.409 | 0.0151 |
| Crying | 110 | 68.3 | 67 | 41.6 | 135.17 | 0.0001 |
| Sadness | 140 | 87.0 | 94 | 58.4 | 71.576 | 0.0001 |
| Feeling happy | 10 | 6.2 | 3 | 1.9 | 2.061 | 0.0652 (NS) |
| Emotional upset | 99 | 61.5 | 64 | 39.8 | 32.044 | 0.0001 |
| Irritability | 120 | 74.5 | 85 | 52.8 | 15.210 | 0.0001 |
| A sense of embarrassing | 105 | 65.2 | 65 | 40.4 | 14.897 | 0.0001 |
| Sensitivity to light or sound | 96 | 59.6 | 59 | 36.6 | 12.250 | 0.0001 |

p: significant $p < 0.05$

NS (Not significant)

Table (6): Relation between socio-demographic, menstrual characteristics of studied students and menstrual pain intensity pre intervention n (161)

| | | Pre intervention Visual analog scale | | | | | | total | χ^2 | p |
|---------------------------------|----------------------------|--------------------------------------|------|----------------------|------|----------------------|------|-------|----------|-----------|
| | | Moderate (4-6) n.14 | | Severe (7-9) n.59 | | Worst pain (10) (88) | | | | |
| | | n. | % | n. | % | n. | % | | | |
| Age per years | 18 to < 19 | 9 | 15.0 | 24 | 40.0 | 27 | 45.0 | 60 | 7.8 | 0.104 |
| | 19 to < 20 | 2 | 3.3 | 19 | 31.7 | 39 | 65.0 | 60 | | |
| | 20 years | 3 | 7.3 | 16 | 39.0 | 22 | 53.7 | 41 | | |
| Residence | Rural | 11 | 8.7 | 39 | 31.0 | 76 | 60.3 | 126 | 8.5 | 0.014 (S) |
| | Urban | 3 | 8.6 | 20 | 57.1 | 12 | 34.3 | 35 | | |
| Income | Sufficient | 11 | 10.1 | 31 | 28.4 | 67 | 61.5 | 109 | 9.8 | 0.007 (S) |
| | Insufficient | 3 | 5.8 | 28 | 53.8 | 21 | 40.4 | 52 | | |
| Body mass index | Normal weight | 5 | 7.0 | 31 | 43.7 | 35 | 49.3 | 71 | 5.6 | 0.22 |
| | Over weight | 9 | 11.7 | 25 | 32.5 | 43 | 55.8 | 77 | | |
| | Obese | 0 | .0 | 3 | 23.1 | 10 | 76.9 | 13 | | |
| Age of menarche | < 12 years old | 5 | 12.2 | 21 | 51.2 | 15 | 36.6 | 41 | 7.3 | 0.027 (S) |
| | ≥12 years old | 9 | 7.5 | 38 | 31.7 | 73 | 60.8 | 120 | | |
| Menstrual Cycle interval | <21 days | 3 | 8.8 | 10 | 29.4 | 21 | 61.8 | 34 | 2.8 | 0.6 |
| | 21<35 days | 11 | 9.9 | 42 | 37.8 | 58 | 52.3 | 111 | | |
| | ≥35 days | 0 | .0 | 7 | 43.8 | 9 | 56.3 | 16 | | |
| Menses duration | Normal (1-7 days) | 14 | 9.9 | 53 | 37.6 | 74 | 52.5 | 141 | 3.2 | 0.19 |
| | Long (8-15 days) | 0 | .0 | 6 | 30.0 | 14 | 70.0 | 20 | | |
| Menstrual pattern | Regular | 11 | 12.0 | 28 | 30.4 | 53 | 57.6 | 92 | 5.2 | 0.073 |
| | Irregular | 3 | 4.3 | 31 | 44.9 | 35 | 50.7 | 69 | | |
| Menstrual Blood loss | Few | 0 | .0 | 8 | 100. | 0 | .0 | 8 | 20 | 0.000 (S) |
| | Moderate | 14 | 10.9 | 45 | 35.2 | 69 | 53.9 | 128 | | |
| | Heavy | 0 | .0 | 6 | 24.0 | 19 | 76.0 | 25 | | |
| Initial onset of menstrual Pain | Menarche | 11 | 16.9 | 18 | 27.7 | 36 | 55.4 | 65 | 17.9 | 0.006 (S) |
| | <1 year after menarche | 3 | 7.9 | 20 | 52.6 | 15 | 39.5 | 38 | | |
| | 1-2 years after menarche | 0 | .0 | 17 | 40.5 | 25 | 59.5 | 42 | | |
| | Other | 0 | .0 | 4 | 25.0 | 12 | 75.0 | 16 | | |
| Onset of dysmenorrri | Days before menses | 6 | 15.4 | 10 | 25.6 | 23 | 59.0 | 39 | 14.6 | 0.067 |
| | Pre menstruation | 3 | 13.6 | 7 | 31.8 | 12 | 54.5 | 22 | | |
| | With menst. & after 24 hrs | 0 | .0 | 13 | 37.1 | 22 | 62.9 | 35 | | |
| | With menst. and for 48 hrs | 0 | .0 | 6 | 31.6 | 13 | 68.4 | 19 | | |
| | Pre and with menstruation | 5 | 10.9 | 23 | 50.0 | 18 | 39.1 | 46 | | |

χ^2 Chi square, (S) p: significant $p < 0.05$

Table (7): Comparison between mean score of menstrual pain intensity pre and post intervention in studied students measured by Visual Analogue Scale.

| Visual analogue scale | Menstrual pain intensity | | p |
|------------------------|--------------------------|-------------------|------------|
| | pre intervention | post intervention | |
| Mean ±SD | 9.2±1.3 | 7.8±1.4 | 0.0001(HS) |
| Range | 5-10 | 5-10 | |
| Percent of improvement | 15.2% | | |

Marginal Homogeneity Test, (HS) p: highly significant $p < 0.001$, SD: Standard deviation

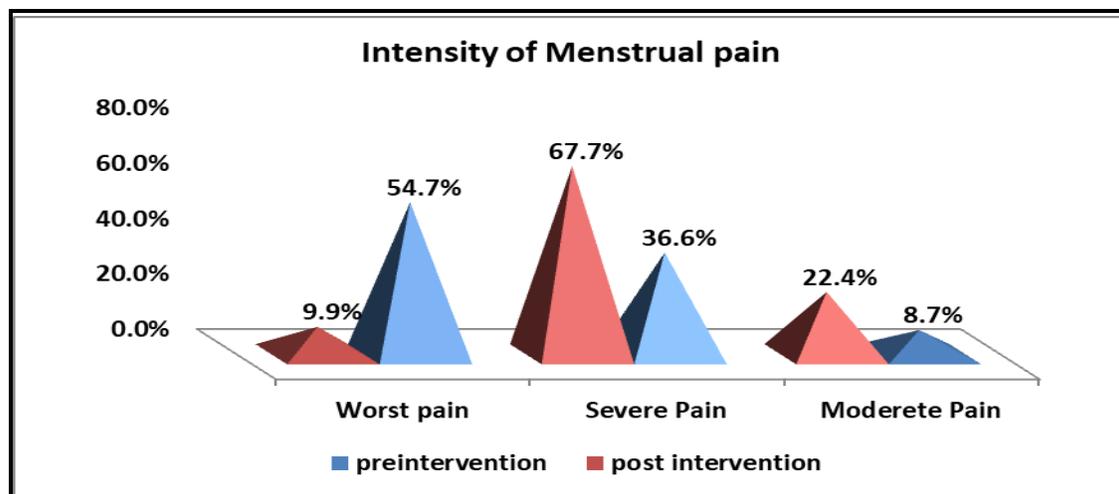


Figure (3): Percent of menstrual pain intensity level pre and post intervention among studied students.

The general features of the female students under study are displayed in **Table (1)**: Shows that the study's student' average age was 18.9 ± 0.78 years. Over three quarter of survey students (78.3%) reside in rural regions and have stable incomes (67.7%). 47.8% of female students were overweight based on their BMI.

Table (2): Analyzes the menstrual characteristics of the students showed that nearly three-quarters (74.5%) had menarche after or at the age of 12, with the interval between monthly periods being between 21 and 35 days (68.9%). Most responders had regular menstrual periods (57.1%), typically lasting 1 to 7 days, and had moderate blood loss (79.5%). In terms of the timing of the menstrual discomfort among the students, it was shown that 40.4% of them experienced their first period at the menarche.

Table (3): Illustrates the distribution of studied students regarding dysmenorrheal pain characteristics of studied students .More than a quarter of students (28.6%) stated that dysmenorrhea frequently occurred with pelvic or lower abdominal pain (88.2%) and occurred before and during menstruation.

Table 4 and 5. Illustrates the distribution of studied students regarding physical and psychological symptoms associated with primary dysmenorrhea pre and post intervention. There was highly statistical improvement in physical and psychological symptoms associated with dysmenorrheal pain after implementation of the program ($p < 0.05$).

Table (6): There was a statistically significant relationship between socio demographic, menstrual, and pre-intervention menstrual pain severity in residency, income, age at menarche, menstrual blood loss, and initial onset of pain ($p < 0.05$).

Table (7): Shows the mean score of the visual analogue scale of menstrual pain before and after

program, there are statistically significant ($p < 0.001$). After the intervention, the overall mean Visual Analogue Scale score was 7.81.4 as opposed to 9.21.3 pre-intervention. The amount of pain decreased by 15.2% following EFT counseling

Figure (3): Following the use of the EFT technique, there was a decrease in menstrual pain intensity of 22.4% post interventions compared to 54.7% pre intervention. This decrease in discomfort is the result of effective EFT technique use.

Discussion

Primary dysmenorrhea is the most typical complaint among adolescents and women of reproductive age. This issue negatively impacts adolescents' quality of life with reproductive health. Adolescents use pharmaceutical and non-pharmacological treatments for this problem to manage their symptoms (**Feinstein, 2019**).

The results of the current study demonstrated that the students' menstrual pain began to affect them at menarche. The majority of them claimed that lower abdomen or pelvic pain was frequently experienced. Furthermore, backache, exhaustion, and depressive feelings were the most typical physical symptoms linked to dysmenorrhea. These results are consistent with (**Wijayanti & Nurseskasatmata., 2021**) study who concluded that the majority of experienced moderate menstrual pain and about one quarter of them reported mild menstrual pain. It was due to the fact that every participant's pain tolerance was unique. Respondents reported lower abdominal pain that extended to their waistbands.

It's possible that menstruation discomfort was brought on by progesterone hormonal changes in the blood, which led to pain. This was because the pain threshold that was felt by each respondent was

different. The pain that was felt by respondents was in lower abdomen to the waist. This might be due to that menstrual pain had occurred due to imbalance of hormone progesterone in the blood, thus, it caused pain.

The current study revealed that back pain, exhaustion, abdominal discomfort, confusion, headache, breast tenderness, and nausea were the most typical physical problems of dysmenorrhea. This is comparable with that reported by (Itani et al., 2022) who stated that sweating, headaches, nausea, vomiting, diarrhea, and shivers that occur just before or during the menses are common symptoms of dysmenorrhea.

Moreover, irritability, worry, unhappiness, anxiousness, and a change in sleeping habits were additional psychological symptoms linked to dysmenorrhea. This is in harmony with the study of (Pakpour et al., 2020) that found that recurrent menstruation discomfort raises the likelihood of mental illnesses, particularly stress, anxiety, and depression. The co-morbidity of dysmenorrhea and depression may also contribute to a greater emphasis on symptoms and, to a lesser extent, on the perceived level of discomfort.

Results of the present study also showed that the mean score of the Visual Analogue Scale has decreased after the EFT approach was used. This demonstrates how the EFT method, which focuses on words or sentences that are repeated and with a surrender attitude, is particularly helpful at reducing dysmenorrhea. When one relaxes softly and with acceptance, the body will relax and bring about calm, which might alleviate suffering. This is agree with the study of (Rokayah & rumiaturun., 2020) who demonstrated that; in the intervention group, there was a difference in the mean pain score before and after the SEFT approach, and there was a decline in pain scores in the intervention group.

The present study illustrated that compared to before the intervention, the EFT approach was able to help female students feel less pain. This coincides with the study of (Wijayanti & Nurseskasatmata, 2021) who reported that the SEFT approach in its concise way proved successful in treating menstruation pain without the use of drugs. This clarified why non-pharmacological treatment for menstruation pain was safer to perform because it didn't have the same adverse effects as medications did because it relied on physiological processes. These results were also supported by (Hamidiyah & Jannah., 2018) study.

The present study indicated that EFT technique proved very successful in reducing menstruation discomfort and related symptoms; this was supported by (El-Hosary., 2022) who reported that giving Chinese students females' self-Care strategies was very successful in reducing PD. Similar results were

reported by (Chen et al., 2019). Also, this accord with a study by (Fernández et al., 2022) who reported that provide supporting sessions to female nursing students during their periods was crucial and successful in reducing PD and improving menstrual wellness.

According to the present study findings, the participants nursing students who used the EFT method during the initial assessment (pre-intervention), then in the first, second, and third menstrual cycles, there was a statistically significant decrease in the menstrual pain mean scores. With respect to this, the study by (El-Hosary., 2022) who estimated that following the use of non-pharmacological techniques, there was a substantial reduction in the mean menstrual pain scores among the participants nursing students in the first, second, third, and fourth menstrual cycles. Furthermore, this result is congruent with (Fernández et al., 2022) who reported that it was beneficial to use alternate non-pharmacological methods because they were quite effective at relieving PD. It may be deduced from this that the EFT technique caused the participant to relax, increasing endorphin production while lowering sympathetic nervous system reaction and lowering the severity of dysmenorrhea.

Conclusion:

The outcomes of this study showed that EFT techniques had a substantial influence on primary dysmenorrhea and menstrual health.

Recommendations:

The following was advised in light of the "present study's findings":

1. Promoting the use of EFT to improve menstrual health and reduce the severity of period discomfort.
2. To confirm the promising findings of the current study in significant populations, additional research is needed.
3. EFT techniques need to be "further researched" in order to determine how they can assist with different "health conditions".

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