



Pregnancy Discomforts Related to Pain, Anxiety, and Sleep Disturbance among Primigravida: Effect of Effleurage Massage

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ABSTRACT

Background: Effleurage massage is a form of touch done gently, slowly, continuously, and with the tips of the fingers. By stimulating the production of endorphin and serotonin chemicals, this massage seeks to seal the gate of pain and make primigravida feel comfortable and calm. **Aim:** To test the pregnancy discomforts related to pain, anxiety, and sleep disturbance among primigravida: Effect of effleurage massage. **Design:** A pre-posttest, quasi-experimental study design was employed. **Setting:** The Maternal and Child Health Centers for Antenatal Care at Shebin-El-Kom, Menoufia Governorate, Egypt, served as the research site for this study. **Sample:** One hundred and fifty primigravida were recruited in accordance with the inclusion criteria. **Instruments:** A structured interview questionnaire, a subjective pain scale, the Epworth sleepiness scale, and the Perinatal Anxiety Screening Scale were the four instruments utilized. **Results:** In terms of pregnant discomforts related to pain, sleep disturbance, and anxiety, there were statistically significant differences between the two groups (effleurage massage and control groups); however, there were no significant differences in terms of pelvic pain. Effleurage massage was found to be highly beneficial in easing pregnant discomforts associated with pain, anxiety, and sleep disruption by primigravida in the intervention group. **Conclusion:** Effleurage massage was a particularly important nursing intervention for decreasing pregnancy discomfort among primigravida. **Recommendations:** Test the effect of effleurage massage on postpartum blues and depression.

Keywords: Pregnancy Discomforts, Primigravida, Effleurage Massage, Anxiety, Sleep Disturbance.

Introduction

According to Ibrahim and Hassan (2020), conception occurs before the age of gestation reaches thirty-eight to forty-two weeks. The first trimester (the first twelve weeks of pregnancy), the second trimester (thirteen to twenty-eight weeks),

and the third trimester (twenty-nine to forty weeks) are the three stages of pregnancy. Also, Wulan et al. (2018) stated that primigravida goes through social, psychological, and physiological changes during pregnancy. Meanwhile, they mentioned that physiological changes affect the cardiovascular,

respiratory, urinary, integumentary, musculoskeletal, neurological, digestive, and endocrine systems in addition to the reproductive organs, particularly in the second trimester of pregnancy. Moreover, they revealed that these changes include insomnia, lower back pain (LBP), urinary disorders, pressure and discomfort in the perineum, varicose veins, constipation, leg cramps, easy fatigue, and leg swelling. Similarly, they noted that low back pain is the most common change that pregnant women experienced.

Furthermore, Latha and Indira (2018) investigated that to preserve the primigravida's normal ability to meet the demands of fetal growth and development, physiological adjustments are required. Correspondingly, they said that back discomfort is among the most common physiological alterations experienced by primigravida. Thus, they illustrated that untreated back pain increases the risk of chronic back pain, which is more difficult to treat or cure in primigravida, long-term back pain, and a higher propensity for postpartum back pain. Also, Goyal et al, (2020) argued that different symptoms are brought on depending on the stage of pregnancy. Likewise, they reported that the two most frequent psychological alterations that arise in primigravida are elevated anxiety and mood swings.

Subsequently, Murtiningsih and Shintya (2018) proposed that the use of soft, slow, prolonged, or continuous strokes is known as effleurage massage. Also, they suggested that this method promotes relaxation. Meanwhile, they recommended that, using the palms of the hands

with the tips of the fingers pressed on the skin, effleurage is a gentle, light pressing technique. In the same way, they explained that elevating oxytocin, endorphin, and serotonin levels through effleurage massage has been shown to improve comfort and relaxation in postpartum women. Moreover, it has been documented that effleurage massage has been shown to lower anxiety and stress hormones. As a result, they added that this massage can also assist in lowering back pain in primigravida.

However, Maulida (2020) cited that it has been shown that effleurage massage improves circulation and sleep patterns, boosts vitality and energy, and improves overall well-being. Also, they clarified that for women who are experiencing premenstrual syndrome, it has also been shown to lessen anxiety, lower back pain, and elevate mood. Otherwise, they found that studies reveal that giving an effleurage massage during pregnancy helps soothe leg cramps, lessen pelvic pain, and lessen anxiety, particularly in first-time mothers.

In addition, Lestari et al. (2022) showed that prenatal effleurage massage has been demonstrated to be the gold standard of nursing care for primigravida women and should be given special consideration. Also, they identified that studies conducted in the last 10 years have demonstrated that giving primigravida effleurage massage during their prenatal visits produces significant changes in hormone levels linked to stress and relaxation. In spite of this, they concluded that this results in reduced anxiety, better-quality sleep, and relief from pregnancy-

related pain. Additionally, they explained that when effleurage massage is included in routine prenatal care, especially for primigravida women, the nursing data strongly supports that there are numerous health benefits.

Significant of the Research

According to Ayoub and Awed (2018), to meet the heightened physical and metabolic demands of pregnancy, primigravida experience significant anatomical and physiological changes. Similarly, they recommended that the fetus's development and the primigravida's and the fetus's preparation for childbirth require significant physiological changes and modifications to the circulatory, respiratory, hematological, renal, gastrointestinal, and neurological systems. Moreover, they demonstrated that the majority of primigravida lament a variety of mild discomforts. Finally, they suggested that while these discomforts don't seem like a big deal at all, they make primigravida feel less at ease and less well-being.

Conversely, Gamel et al. (2019) suggested that symptoms linked to pregnancy-related changes are referred to as pregnancy-related minor discomforts and that a primigravida woman's self-care can manage these discomforts. Additionally, they mentioned that the discomforts associated with pregnancy could be psychological (such as anxiety, mood swings, and a lack of family support) or physiological (such as backache, leg cramps, edema, constipation, exhaustion, nausea and vomiting, sleep disturbance, heartburn, and increased frequency of urination).

Besides, Yuningsih et al. (2022) argued that recurrent or continuous pain around the lumbar spine lasting longer than one week is considered low back pain during pregnancy. Also, they mentioned that according to prevalence estimates, 45–75% of primigravida experience lower back pain at some point in their pregnancy, and by the end of their pregnancy, up to 70% of women report having pelvic girdle pain (PGP). Meanwhile, they established that hormonal and mechanical changes that occur during pregnancy may accompany insomnia. Up to 90% of women who are primigravida report having trouble sleeping. Therefore, they reported that some primigravida may benefit from the following interventions to lessen sleep disruption during pregnancy: developing sleep/wake habits, altering the sleep environment, avoiding caffeine, relaxation techniques, effleurage massage, heat, and support for lower back pain, and limiting fluid intake in the evening.

Furthermore, Ibrahim & Hassan (2020) concluded that forty percent of the research participants suffered headaches, seventy-three percent suffered backaches, thirty-nine percent suffered muscle spasms, and seventy-four percent experienced sleep difficulties. Also, they represented that the use of effleurage massage by primigravida during prenatal care to ease mild pregnancy discomforts is the subject of little research available in Egypt. Unfortunately, they said that knowledge is prioritized over practice in the majority of published worldwide research studies. Likewise, they noticed that for the midwifery nurse to build her future education in modern culture, it is necessary to evaluate the

scope of this phenomenon. It is also noteworthy to test the effect of effleurage massage on relieving pregnancy discomforts related to pain, anxiety, and sleep disturbances among primigravida. Finally, Gaballah et al. (2023) added that a prenatal care nurse should give advice and guidance to the pregnant woman and put this massage on the schedule of the prenatal visit to improve pregnancy outcomes and maternal health.

Aim: To test the pregnancy discomforts related to pain, anxiety, and sleep disturbance among primigravida: Effect of effleurage massage.

Research hypotheses: In order to achieve the aim of the present study, a number of research hypotheses were created and put forth:

- H1.** Primigravida who get effleurage massage experience less pain than those who do not.
- H2.** Primigravida who get effleurage massage experience lower anxiety scores than those who do not.
- H3.** Primigravida who get effleurage massage experience less sleep disturbance than those who do not.
- H4.** Primigravida who get effleurage massage report higher levels of satisfaction than those who do not.

METHOD

Research Design: To accomplish the current study's aim, a quasi-experimental research design with a pre-posttest was used.

Setting: The current study was carried out in Shebin El-Kom, Menoufia Governorate, Egypt, at the maternal and child health centers for prenatal care in the academic year 2023, specifically from May 23 to July 15.

Sample: A total of 150 healthy primigravida women were selected. It was determined using the following statistical formula: $n = Z^2p(1-p)$, where p is the expected proportion of the population that possesses the feature (where unknown, we used $p = 0.5$); Z is the level of confidence based on the standard normal distribution (with a 95% level of confidence, $Z = 1.96$); and P is taken to be 0.05. Notably, researchers choose primigravida in the second trimester of pregnancy in order to lower the chance of abortion because they lack expertise and require a great deal of care and assistance. Researchers used the following factors to choose primigravida:

Inclusion criteria. Primigravida who consented to participate in the study were recruited in the second trimester of pregnancy, between thirteen and twenty-eight weeks of gestation, with a normal pregnancy and no fetal or maternal problems.

Exclusion criteria: women who declined to take part in the research, as well as those with high-risk pregnancies or aberrant fetal conditions.

Seventy-five pregnant women made up each of the two groups (the control group and the group receiving effleurage massage) from the randomly selected sample.

Data collection instruments: The following four categories of instruments were employed to gather data:

- 1) **A structured interview questionnaire** was created by the researchers in order to gather information following a thorough study of the literature regarding medical and obstetrical history (such as gestational age) and demographic

characteristics (such as age, name, and educational attainment).

2) The Subjective Pain Scale (SPS) was adopted from Gould (2001). It is used to measure discomfort, including headaches, backaches, pelvic pain, and leg cramps. It is made up of a blank line with adjectives that characterize the extremes of agony anchored at both ends. "No pain" (zero scores) and "severe pain" (the highest score of 10) are the most often used anchoring words. Primigravida is asked to mark the area on the line that most accurately represents her level of pain. The completion of this instrument takes two to five minutes. The first section was scored from 1–3 for mild pain; the second part was graded from 4–6 for moderate pain; and the third part was graded from 9–10 for severe pain. These scores were noted before and after the effleurage massage.

3) The PASS, or Perinatal Anxiety Screening Scale, developed by Somerville et al. in 2015, is a 31-item valid and reliable self-report measure intended to evaluate pregnant women for problematic anxiety. By evaluating four dimensions, which address particular anxiety symptoms as they manifest in perinatal women, it distinguishes between women who are at high and low risk of presenting with an anxiety disorder. Four subscales are formed from these domains: 1) Acute Anxiety and Adjustment; 2) Perfectionism, Control, and Trauma; 3) Social Anxiety; and 4) Excessive Worry and Specific Fears.

The items are rated from 0 (meaning "not at all") to 3 (meaning "almost always"). The sum of all the things on the PASS yields the final score. To distinguish between people who are at high and

minimal risk of presenting with an anxiety condition, a cut-off score of 26 is advised.

Scoring system:

- Completely none at all 0
- Sometimes 1
- Often 2
- Almost Always 3

The level of anxiety score range includes the following:

- Asymptomatic 0 - 20
- Mild to moderate symptoms 21 – 41
- Severe symptoms 42 – 93

4) The ESS, or Epworth Sleepiness Scale, was adopted from Johns (1991). It is frequently employed as a subjective indicator of a patient's level of tiredness in the field of sleep medicine. The test consists of a list of eight scenarios where the likelihood of feeling sleepy varies from 0 (no possibility of sleeping) to 3 (great chance of snoozing). Add up the values of their answers when the woman has completed the test. On a scale from 0 to 24, the total score is determined. The measure determines whether women are excessively restless and may need to see a doctor.

Scoring system:

- No likelihood of sleeping =0
- Slight likelihood of sleeping =1
- Moderate likelihood of sleeping =2
- High likelihood of sleeping =3

Interpretation:

0-7: It is unlikely that women are abnormally sleepless.

8-9: Women have an average amount of daytime sleeplessness.

10-15: Women may be excessively sleepless, depending on the situation. A woman may want to consider seeking medical attention.

16-24: Women are excessively sleepless and should consider seeking medical attention.

Procedure:

1. Assessment phase (for both groups, effleurage massage and control groups):

To gather baseline data, interviews were conducted on the first day for both the effleurage massage and control groups. While conducting interviews with the subjects, the researchers had them fill out a structured interview form called SPS, PASS, and ESS. The questionnaires took the women about 25 minutes to complete, after which the researchers took note of the addresses and phone numbers of the primigravida participants so that they might get in touch with them later. Two surveys were completed, one before and one after the follow-up.

2. Phase of intervention (for the group receiving effleurage massage):

Over the course of five weeks, the primigravida had two 20–30-minute effleurage massages every week. For the primigravida and the accompanying person, the effleurage was learned to be performed at home. The primigravida would start each session by lying side with pillows positioned behind her back and between her legs for support. The following order was followed when giving the effleurage massage:

1. The neck and scalp Effleurage Massage:

Using small circular motions on the forehead, along the hairline, and down to the temple,

massage the scalp using effleurage. Then, knead the neck from the base up.

- 2. Back effleurage massage:** this technique involves moving the heel of the hands along the spine, rocking the hands from the top of the primigravida shoulder blade to the backbone, pressing the fingertips along the spine from the neck to the backbone, and then stroking upward from the hip to the neck, as well as massaging the trapezius muscle in the shoulder; using the heel of the palm to make large circles to massage the lower back; long gliding strokes from the hip up and over the women's waist; and inching up the back with fingertips placed on the sides of the spine, starting from the women's hipbone to the neck and then reversing the direction downward with fingertips in a raking fashion.
- 3. Abdominal Effleurage Massage:** During massage, both hooked hands were gently and delicately pressed with circular stroking movements using fingertips on the abdomen, starting from the upper area of the symphysis pubis up to the fundus level during inhalation and vice versa, from the top of the fundus down to the starting point during exhalation.
- 4. Arms Effleurage Massage:** Long, sweeping strokes from the elbow up and over the shoulder, as well as kneading the muscle between the elbow and the wrist, from the elbow to the shoulder, and from the wrist to the elbow.
- 5. Hand Effleurage Massage:** This technique involves rubbing the palm of the hand in tiny

circles with the thumbs, sliding down each finger, and rubbing the back of the hand between the crevices between the bones.

6. Legs Effleurage Massage: Long sweeping strokes from the knee to the thigh, up and over the hip; kneading the muscles between the knee and thigh; long sweeping strokes from the ankle up towards the knee; kneading the muscles between the ankle and knee; repeatedly sliding the hand from the Achilles tendon up towards the upper calf and down to the heel with little pressure are all examples of effleurage massage techniques.

7. Foot Effleurage Massage: Using fingers and thumbs, massage the soles from the toes to the heel, then return to the toes; glide down each toe and rotate it three times; stroke the top of the foot in the direction of the leg.

The primigravida was resting on her other side, propped up with cushions, and the effleurage massage was repeated. On the first and last days of the fifth-week follow-up, these assessments were completed prior to and during the session (Dubey & Lata, 2017).

The control group: The primigravida received routine care from the maternal and child health center.

Phase of evaluation (for both groups): SPS was used to assess the degree of pain for headache, backache, leg cramps, and pelvic pain in both groups both before and after the intervention. Anxiety level measured by PASS; sleep pattern measured by ESS after five weeks of effleurage massage therapy for the effleurage group; and

standard care for the control group were all assessed.

Content validity and reliability:

To examine the content validity, a panel of five experts in obstetrics/gynecology and maternity and newborn health nursing reviewed the instruments. The panel's view and judgment guided the modifications made to improve the questionnaire's appropriateness and sentence clarity. Test-retest methodology was used to administer the questionnaire to ten primigravida women in order to evaluate the reliability test.

The Pilot Research:

It was carried out on 10% of the research sample, chosen at random, and kept separate from the primary research sample. Its objective was to assess the questionnaires' simplicity and clarity. It was also helpful in estimating the amount of time required to complete the forms. Simple changes, such as rewording or eliminating some questions, were made in response to the pilot study's findings.

The Ethical Considerations:

The research has been approved from the ethical and research committee of the Faculty of Nursing, Menoufia University with No (900). The directors of the mother-and-child health centers received official authorization. To get the ladies who fit the inclusion criteria to agree to participate in the study, the researchers presented themselves and explained the goal of the study. The researchers guaranteed that their participation in the study was entirely voluntary and that there was no risk or hazard to their health. The researchers approached primigravida who satisfied the

inclusion criteria and were willing to participate in the study, requesting written consent to confirm their participation. The researchers also stressed that participation in the study is completely voluntary, and that withdrawal is possible at any moment.

Statistical Design:

The researchers coded and tallied the gathered data. Version "22" of the statistical package for social science (SPSS) was employed. Inferential statistics in this study included a chi-square to compare two qualitative variables and a paired t-test to compare the means of pre- and post-effleurage massage. At a p-value ≤ 0.05 , statistical significance was deemed to have occurred.

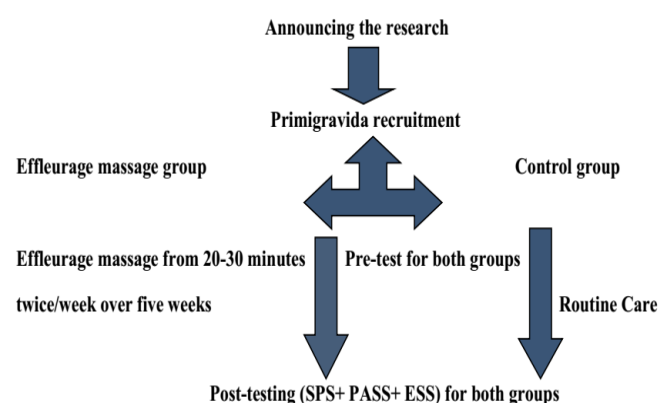


Figure 1: Schematic Representation of the Research Protocol

THE RESULTS

Table 1 illustrates that the age range of primigravida was 19–32 years old, with a mean age \pm SD of 24.4 ± 4.36 . The effleurage massage and control groups comprised 66.6% and 73.4% of housewives, respectively, and 66.6% of primigravida with a moderate economic level. In terms of primigravida educational level, 53.4 and 50.6% of them had a high education level.

Figure 2 clearly illustrates how the analyzed samples were distributed based on pregnancy discomforts. It revealed that headaches, backaches, insomnia, leg cramps, anxiety, and pelvic pain were the most common pregnancy discomforts experienced by primigravida women throughout the second trimester of pregnancy. Headache and sleep disturbance were the most prevalent complaints in the effleurage group (26% each), while sleep disturbance was the most common symptom in the control group (26%).

Figure 3 shows the control group's final assessment of the degree of pain severity experienced during pregnancy among primigravida. It was shown that acute pain associated with leg cramps affected 33% of them. Conversely, 89%, 88%, 62.7%, and 52% reported having moderate pain associated with leg cramps, pelvic pain, headache, and backache, respectively. The control group's primigravida had only a slight reduction in their level of pain.

Figure 4: At the time of the final assessment among primigravida, the effleurage group's level of pain severity during pregnancy is depicted. Primigravida experienced most discomforts without pain. While 36% and 24% of primigravida, respectively, reported having moderate pelvic discomfort and headache. Moreover, headaches, backaches, pelvic pain, and leg cramps were reported by 37.4%, 62.7%, 65%, and 26.5 percent of primigravida, respectively. Also, no pain was reported by 38.5%, 37.5%, and 73.5% of primigravida. This suggested that among primigravida throughout the second trimester of pregnancy, there was an observed alleviation of

pregnancy discomforts associated with pain with the effleurage massage group.

The pregnancy discomfort score for the effleurage and control groups at the time of the final assessment for primigravida is shown in **Table 2**. With highly statistically significant differences, it demonstrated that the effleurage massage group is more effective than the control group in reducing pregnancy discomforts related to headache, backache, leg cramps, sleep disturbance, and anxiety; however, there were no statistical differences between the two groups regarding pelvic pain.

Table 3 shows that, for the effleurage massage group, there is a statistically significant

improvement in the mean score of primigravida discomforts related to headache, backache, pelvic pain, leg cramps, anxiety, and sleep disturbance following effleurage massage.

Table 4 provides an illustration of the impact of effleurage massage on pregnancy discomforts. It makes clear that, in relation to headache, backache, leg cramps, and sleep disturbance, respectively, 44%, 76%, 53.3%, and 52% of primigravida reported that effleurage massage was very effective in relieving their discomforts. However, effleurage massage was found to be beneficial in treating leg cramps, pelvic pain, and anxiety in primigravida (93.3%, 40%, and 34.6%, respectively)

Table 1: Socio-Demographic Characteristics of the Research Subjects

Variables	Effleurage group		Control group	
	No.	%	No.	%
Age:				
< 20 years	6	8	10	13.3
20-25 years	42	56	33	44
26-30 years	22	29.3	24	32
> 30 years	5	6.7	8	10.7
Range	19-32			
Mean \pm SD	24.4 \pm 4.36			
Gestational Age (weeks)				
Mean \pm SD	26.6 \pm 3.81		26.3 \pm 3.77	
Educational level				
Illiterate.	5	6.6	2	2.6
Read and write.	10	13.4	10	13.4
Secondary.	20	20.6	25	33.4
University.	40	53.4	38	50.6
Occupation				
Housewife.	50	66.6	55	73.4
Employee	25	33.4	20	26.6
Economic status				
Low	10	13.3	8	10.7
Moderate	50	66.6	50	66.6
High	15	20	17	22.6

Figure (2) The Pregnancy Discomforts of the Research Samples

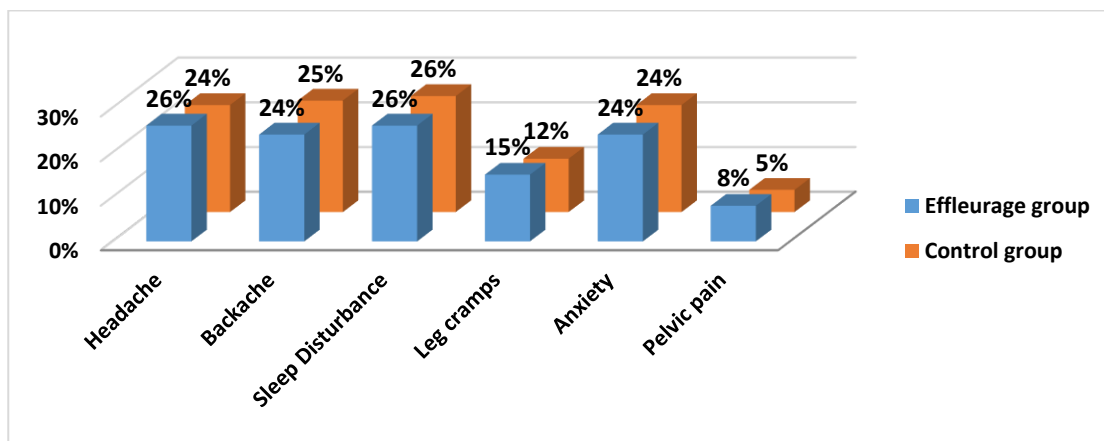


Figure 3: Severity of Pain Related to Pregnancy Discomforts for the Control Group at the Final Assessment

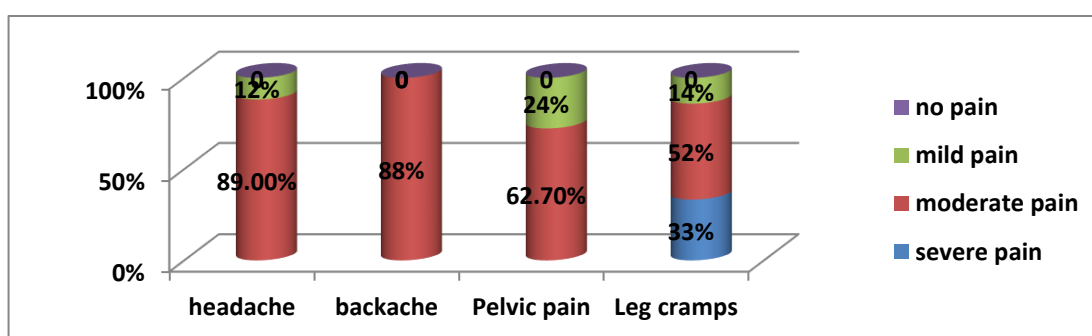


Figure 4: Severity of Pain Related to Pregnancy Discomforts for the Effleurage Group at the Final Assessment

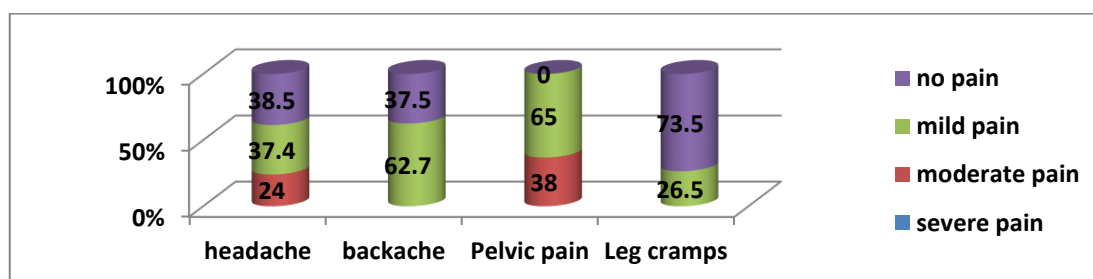


Table 2: Pregnancy Discomforts Score among Effleurage and Control Groups at the Final Assessment

Pregnancy Discomforts	Effleurage group (n=75) M ± SD	Control group (n=75) M ± SD	T -test	p-value
↓ Headache	2.15±0.79	1.1±0.34	10.68	0.000**
↓ Backache	2.38±0.48	1.3±0.33	22.05	0.000**
↓ Pelvic pain	1.65±0.49	1.2±0.61	5.98	0.549
↓ Leg cramps	2.73±0.44	0.81±0.67	20.6	0.004*
↓ Anxiety	16.0 ±2.11	6.89±3.58	18.98	0.000**
↓ Sleep disturbance	3.42±0.496	2.12±0.64	13.88	0.000**

** Level of significance at $p \leq 0.05$, highly significant difference at $p \leq 0.01$

Table 3: Pre-Post Score of Pregnancy Discomforts related to Pain, Anxiety, and Sleep disturbances for the Effleurage Massage Group

Pregnancy Discomforts	N=75		t	p-value
	Pre-effleurage massage M±SD	Post-effleurage massage M±SD		
Headache	1.93± 0.48	0.86± 0.79	11.990	0.000**
Backache	2.18±0.39	0.63± 0.49	25.296	0.000**
Pelvic pain	1.96± 0.64	1.38± 0.47	6.577	0.000**
Leg cramps	2.33± 0.62	0.27± 0.45	20.815	0.000**
Anxiety	12.88±4.06	3.83±2.53	24.88	0.000**
Sleep disturbance	2.89 ± 0.49	1.54± 0.6	10.4	0.000**

** Level of significance at $p \leq 0.05$, highly significant difference at $p \leq 0.01$

Table 4: Effect of Effleurage Massage on Pregnancy Discomforts as Reported by Primigravida Women

Pregnancy Discomforts	Very effective		Effective		Ineffective		Ineffective at all	
	No.	%	No.	%	No.	%	No.	%
Headache	33	44	22	29.3	19	25.3	0	0
Backache	57	76	18	24	0	0	0	0
Pelvic pain	8	10.6	30	40	27	36.0	10	13.3
Leg cramps	40	53.3	26	34.6	9	12.0	0	0
Anxiety	5	6.6	70	93.3	0	0	0	0
Sleep disturbance	39	52	26	34.6	10	13.3	0	0

DISCUSSION

A primigravida woman's pregnancy is an amazing and thrilling time in her life when she brings a new life into the world. From conception until the postnatal period, pregnancy demands special care. (Indira and Latha, 2018). The benefits of effleurage massage in labor have been documented in earlier research, which includes increased blood flow, venous and lymphatic return, abdominal muscle warming, and physical and mental relaxation. Research by Murtiningsih & Shintya (2018), Abd-Ella (2018), Dubey & Lata (2019) concluded that effleurage massage was a very effective way to relieve labor pain among parturient women. There has never before been a study done on the use of effleurage massage

techniques to lessen pain-related pregnancy discomforts (Wulan et al., 2018). Thus, the purpose of this study is to assess how well effleurage massage relieves pregnancy-related pain, anxiety, and sleep disturbance in primigravida.

According to the current research, primigravida age ranged from 19 to 32 years old in terms of demographic parameters. The range of the mean gestational age is twenty-six to twenty-nine weeks. In terms of occupation and educational attainment, almost 50% of primigravida women are housewives with advanced degrees. These findings are consistent with studies by Lestari et al. (2022) and Gamel et al. (2019), which showed that

the majority of pregnant women had high levels of education and ranged in age from 20 to 35.

Regarding discomforts associated with pregnancy that include pain, anxiety, and insomnia. The current study found that, for the effleurage massage and control groups, respectively, less than half of the primigravida complained of headache (26% and 24%), backache (24% and 25%), pelvic pain (8% and 5%), and leg cramps (15%) and 12%. The most common discomforts experienced by primigravida during the second trimester were sleep disturbance and anxiety (26% and 24%, respectively). These results are consistent with Maulida (2020), who claimed that every bodily system will undergo changes during pregnancy, including psychological and physiological ones, including headaches, backaches, pelvic pain, leg cramps, disturbed sleep, and anxiety. The study by Ayoub and Awed (2018) found, in contrast to these findings, that 84.8% of primigravida complained of disturbed sleep, and over half (61%) complained of backaches. Different criteria and sample sizes could be the cause of this discrepancy. However, another study conducted in the antenatal clinic at Beni-Sweif University Hospital in 2020 by Ibrahim and Hassan found that during the second trimester of pregnancy, headaches accounted for 45.7% of cases, muscle spasms for 54.3%, back discomfort for 77.1%, and difficulties sleeping for 85.7% of cases.

The results of this study showed that effleurage massage was a significant and useful tool for reducing pain-related pregnancy

discomforts in primigravida women in the second trimester of their pregnancies. Lestari et al. (2022) provide support for this, stating that effleurage massage is a safe and natural means of relieving headache, low back, and pelvic pain in primigravida women throughout pregnancy. It is an inexpensive and free method. Additionally, effleurage massage is a crucial nursing intervention for back pain during the second trimester of pregnancy, according to Maulida (2020). According to Yosepha et al. (2019), effleurage massage assisted in reducing pain and promoting the creation of endorphin and serotonin, which in turn helped the primigravida women feel at ease. Additionally, physical therapy for pelvic pain and pregnancy-related back pain was found to be highly beneficial in reducing pain and enhancing comfort (Hall et al., 2018). Additionally, Yuningsih et al. (2022) found that effleurage massage significantly reduced back pain and discomfort in expectant mothers. Based on these findings, they suggested effleurage massage as a substitute for care for primigravida patients at health centers.

It was noted that women's conditions for anxiety and sleep disturbance associated with pain relief had improved with regard to primigravida discomforts related to these issues. These outcomes are consistent with the study conducted by Gaballah et al. (2023), which discovered that effleurage massage was a highly effective method for reducing pain and exhaustion, easing anxiety, and enhancing the quality of sleep. Additionally, in their systematic analysis, Akpinar

et al. (2022) found that applying back effleurage massage therapy for at least 10 minutes a day during the second trimester of pregnancy was a successful intervention in improving the quality of sleep for expectant mothers. Additionally, the study by Rahayu et al. (2020) found that effleurage massage was highly successful.

In our study, primigravida reported that effleurage massage had been very helpful in easing their leg cramps, headaches, backaches, and sleep disturbances (46, 76, 61, and 53.3%, respectively). Additionally, over half of the women reported that it was helpful in easing pelvic pain (52%), and 93.3% of primigravida reported that it was helpful in easing anxiety during the second trimester of pregnancy. According to Lestari et al. (2022), effleurage massage relaxes muscle tissue, which lessens the excruciating contractions and spasms that happen during leg cramps. These results corroborated their findings. It was also quite successful in treating headaches and backaches, which enhances sleep quality and lowers anxiety. These findings are consistent with those of Gaballah et al. (2023), who discovered that effleurage massage significantly reduced pain and exhaustion, reduced anxiety, and enhanced the quality of sleep for primigravida patients.

CONCLUSION

The results of this study led to the conclusion that effleurage massage significantly reduced pregnancy-related pain symptoms such as headaches, backaches, leg cramps, and pelvic pain. Additionally, it proved particularly successful in lowering anxiety and sleep disturbances in

primigravida women throughout the second trimester of pregnancy. To reproduce the positive results in the newborn following birth, more research is required.

RECOMMENDATIONS

The following were suggested based on the findings of the investigation: 1) In the second trimester of pregnancy, encourage all primigravida to practice effleurage massage. 2) A program of instruction teaching nurses and midwives how to use effleurage massage during pregnancy. 3) Examine how effleurage massage affects sadness and the postpartum blues.

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