

Effect of finger handheld relaxation technique on fatigue and Stress among Women with Preeclampsia

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Abstract

Background: Pre-eclampsia is a multisystemic pregnancy condition marked by additional organ systems being involved, elevated blood pressure, and negative consequences on the fetus's health. Using non-pharmacological strategies, such as the finger portable relaxation technique, may be a way to reduce fatigue and stress. **This study** aimed to evaluate the effect of the finger handheld relaxation technique on fatigue and stress among women with preeclampsia. **Subjects and Method: Study design:** - Quasi-experimental design study & control group was used in the present study. **Setting:** The research will be carried out in the obstetric department at Mansoura University Hospital, Egypt. **Subjects:** The study subjects included a purposive sampling technique enrolled to select a sample of 100 pre-eclamptic women in the previously selected department and who agreed to participate in the study and randomly assigned into two equal groups, with 50 pre-eclamptic women in each group (the experimental and control groups). **Tools of data collection:** Three tools were used for data collection; Tool I: structured Interview questionnaire to identify data related to women's personal and reproductive history, Tool II: A fatigue assessment scale, and Tool III: Cohen's Perceived Stress Scale Short Version (PSS-10). **Results:** Indicated that; post the application of the finger handheld relaxation technique significantly reduced fatigue and stress among women with preeclampsia in the experimental group compared to the control group. **Conclusion:** The study concluded that; the finger handheld relaxation technique has a significant effect on reducing fatigue and stress among women with preeclampsia. **Recommendations:** The finger handheld relaxation technique should be integrated into the care of women with preeclampsia to help reduce fatigue and stress.

Keywords: Finger handheld relaxation, Fatigue, Stress, Women with Preeclampsia

Introduction

Pre-eclampsia, often known as PE, is a multisystemic pregnancy disorder characterized by high blood pressure (BP), involvement of one or more additional organ systems, and detrimental effects on the health of the fetus (Leveno et al., 2018). Preeclampsia causes 76,000 maternal deaths and 500,000 fetal deaths annually in the world. In Egypt, preeclampsia affected 6% to 8% of all pregnancies (WHO, 2015). Complications between the mother and fetus are also more likely both immediately and later on. This includes a 1.5 to 2-fold increased risk of stroke, a 2.5 to 4-fold greater risk of long-term high blood pressure, and a 1.5 to 2-fold increased risk of cardiovascular death. These dangers for the embryo include those related to intrauterine growth restriction, iatrogenic preterm birth, oligohydramnios, placental detachment, fetal

distress, and intra uterine fetal death (Fox et al., 2019)

According to the National Institute of Health and Care Excellence guidelines, a history of high blood pressure during a prior pregnancy or the mother's overall health, such as chronic renal disease, autoimmune illness, diabetes mellitus, or chronic hypertension, is risk factors for PE. If a woman is nulliparous, 40 years old, has a body mass index of 35 kg/m², has a family history of PE, has twins or more pregnancies, or waits more than 10 years between pregnancies, she is at moderate risk of PE. Several clinical variables, such as elevated mean arterial blood pressure before the 15th week of pregnancy (Bartsch et al., 2016), can also considerably raise the risk of PE (North et al., 2011), Periodontal disease, urinary tract infections, Helicobacter pylori, and other infections, as well as a polycystic ovarian syndrome, sleep-related respiratory difficulties,

and others (Bellos et al., 2018; Nourollahpour Shiadeh et al., 2019).

Negative pregnancy and birth outcomes are primarily caused by maternal stress. According to Zhang meta-analysis, mental stress during pregnancy or life is a risk factor for gestational hypertension and preeclampsia in pregnant women. Many physiological systems, including the endocrine and autonomic nervous systems, are stimulated by stress. These systems are linked to high blood pressure, a higher risk of preterm birth, and low birth weight (Zhang et al., 2013).

Antihypertensive medication use during pregnancy is controversial due to ambiguous tests. Thus, there is a pressing need for novel and unconventional treatments for hypertension during pregnancy, especially nonpharmacological alternatives. There is proof that adopting a healthy diet, losing weight, getting enough exercise, and managing stress can lower the risk of preeclampsia. According to studies, deep breathing, and relaxation practices help pregnant women prepare for the challenges and discomfort of childbirth. Also, they benefit the developing fetus. Much research has been conducted to determine how relaxing techniques affect hypertension. All relaxation techniques were successful in lowering blood pressure, according to the findings. A pregnant woman can learn to practice relaxation treatment, which is a straightforward technique that can be used for 10 to 20 minutes each day to lower blood pressure and reduce stress (Benson & Proctor, 2011).

Relaxation is one method for lowering stress. This method can purposefully overpower and heal patients to purposefully build their bodily muscles (Sulistyarini, 2013). Deep breathing and the Finger Held technique are two relaxation techniques that can be used to lessen fatigue and tension (Yulastuti, 2015 and Sari, 2016). Jin Shin Jyutsu (Japanese acupressure), which is very simple and simple to conduct for everyone related to fingers and energy flow in our bodies, including the relaxation of finger grasping (Idris & Astarani, 2017). This method makes use of light hand movements and breathing to calm our emotions and balance our body's energy

(Sari, 2016; Idris & Astarani, 2017). This state of relaxation helps ease tension and ease problems (Yulastuti, 2015). Increased oxygen saturation and relaxation can be achieved through deep breathing (Mason et al, 2013).

A simple strategy for managing emotions and increasing emotional intelligence is the finger-hand relaxation technique. Energy meridians or channels run along the length of our fingers and are connected to many organs and emotions. When gripping, the reflection points on the hand cause an instinctual reaction to being activated. A shock wave or a drop in brain electricity will occur as a result of the stimulus. Before immediately processing the wave and sending it to the nerves of the damaged body organs, the wave enters the brain and clears the blockage in the energy flow. Human bodies can regulate their temperature, heart rate, blood pressure, and muscle tension, and they can also absorb energy. Since it can help us become calmer and focused, this finger hand-held method is quite useful in daily life (Astuti et al., 2018).

Nurses play a critical role in counseling, teaching and guiding these women. Non-pharmacological therapeutic options and procedures include pharmaceutical therapy, information, distraction, attention-focusing exercises, and relaxing treatments to name a few (Esther Lilly & Dakshayani, 2018).

Significance of the study:

A simple method for improving emotional intelligence and emotion management is the finger-held relaxation technique. There are meridians, or energy pathways, running along our fingers that are linked to different organs and emotions. Because the grasp of the finger warms the sites of entry and entry of energy to the meridians (energy channels) situated on our fingers, holding a finger while breathing deeply (relaxation) helps lessen and heal bodily and mental tension. The nurse takes part in the medical treatment of pain and is extremely important in the pre-eclamptic care of women. She must therefore be familiar with both the beneficial and harmful pharmacological effects of these drugs. A quick, inexpensive, low-cost, and safe non-pharmacological treatment is the finger portable relaxation technique (Siti et al., 2019). According to research by Rosliana et

al. (2018), the five-finger relaxation technique helps breast cancer patients sleep better. Hence, the study aimed to evaluate the effect of the finger handheld relaxation technique on fatigue and stress among women with preeclampsia.

Aim of the study:

The study aimed to evaluate the effect of the finger handheld relaxation technique on fatigue and stress among women with preeclampsia through:

- Assessing fatigue level among pre-eclamptic women in experimental and control group pre and post-finger handheld relaxation technique application.
- Assessing stress level among pre-eclamptic women in experimental and control group pre and post-finger handheld relaxation technique application.

Research hypothesis:

Pre-eclamptic women who will receive the finger handheld relaxation technique (independent variable) will exhibit less fatigue and Stress levels (dependent variable) than those who don't receive it.

Subjects and Method:

Research design:

Quasi-experimental design study & control group was used in the current study to investigate the effectiveness of the treatment through the difference between experimental and control groups.

Setting:

The research was carried out in the Obstetric Department at Mansoura University Hospital, Egypt.

Subjects:

50 pre-eclamptic women were randomly assigned to each of two equal groups as part of the purposive selection technique, which was used to pick a sample of 100 pre-eclamptic women from the previously chosen department (the experimental and control groups). Basic random sampling was used to select the participants. Randomization was achieved by requesting that each woman select a piece of paper. The woman who selects the letter carrying the paper (E) is in the experimental group, and the letter carrying the control paper

(C) is in the experimental group. The control group receives regular treatment while the experimental group receives finger handheld relaxation techniques with regular treatment.

Inclusion criteria:

- Pregnant women with mild or moderate preeclampsia volunteered to participate in the trial and stayed in the hospital for three days straight.
- Free of other medical conditions

Data collection tools:

Three tools were used

Tool I: Structured interview questionnaire:

First part: Demographic characteristics: It included age, level of education, occupation, and residence.

Second part: Reproductive history: It included gravidity, parity, number of abortions, stillbirths, previous pregnancy, labor, and postpartum complications.

Tool (II): Fatigue assessment scale: This tool was created by adapting a 10-item self-developed rating scale from (Kleijn et al., 2011) (which assessed the fatigue level of individuals during various activities in a week in terms of physical, social, psychological, and spiritual domains and their relationship with the time of the day). Scores may range from zero (no fatigue) to ten (100, the total score range) (worst possible). Not at all, barely at all, mild, moderate, severe, and worst are each indicated. The scale's dependability is deemed to be good with a Cronbach's alpha for the overall score of 0.81.

Tool (III): Cohen's Perceived Stress Scale Short Version (PSS-10):

It was created by the updated version of Cohen (2012). To gauge the stress level of the subjects, it was modified. There were ten questions in it, and they asked about feelings and thoughts from the previous month. (Cohen, 2012) On a three-point Likert scale, each response was coded as frequently (3 points), occasionally (2 points), and Never (1 point). Each subject had a total score that varied from 10 to 30. The perceived stress levels of the subjects were divided into three categories: low stress (17), average stress (17–24), and high stress (24).

Validity of the tools:

Five specialists in the field of obstetric and gynecological nursing evaluated the instruments' accuracy concerning their content, as well as their clarity, thoroughness, appropriateness, and relevance. To ensure that the sentences were clear and the content was suitable, changes were made in accordance with the panel's judgment.

Reliability of the tools:

On the fatigue evaluation scale, Cronbach's alpha has a total score of 0.818, which is considered to be in a good range. Cohen's Perceived Stress Measure Short Version reliability was ($r = 0.894$).

Methods:

The study required approval from the Mansoura Faculty of Nursing's Ethical Research Committee to proceed. The researcher received sufficient instruction from a professional in mental relaxation therapy on how to apply the Finger portable relaxation technique. After explaining the goal of the research, an official letter from the nursing faculty was presented to the relevant decision-makers in the study setting to request their consent for data collection. Tool I was created by the researcher after a thorough evaluation of current and pertinent literature. Pregnant women in both groups were questioned one-on-one to gather basic information (tool I); those in the control group got standard hospital care for pregnant women (history taking, physical examination, special investigations, instructions, and reassurance).

A pilot study

A pilot study was done on 10% (10 pre-eclamptic women) of the entire sample to evaluate the clarity and viability of the research methodology. The tools underwent adjustments to produce the final version. The pilot study's pre-eclamptic participants were not included in the current investigation.

Ethical considerations:

Before beginning the study, the researchers had a meeting with the obstetric directors of the chosen setting to assure their involvement and to outline the goals of the investigation. Pre-eclamptic ladies verbally consented in exchange for their participation. The study's goals were explained to pre-eclamptic women. Pre-eclamptic women were told that participating in the study was fully

optional and that they might withdraw their agreement at any time, without having to give a reason.

The procedure of data collection:

The researchers visited the settings they had previously selected twice a week, from 9 am to 1 pm. From the beginning of March until the end of August 2022, data was gathered for six months. It takes between 50 and 60 minutes to finish each interview tool. The researchers interacted with pre-eclamptic women one-on-one in the previously selected location, introducing themselves and outlining the study's objectives before doing so. The investigators conducted in-person interviews with pre-eclamptic women.

The study's implementation process has three phases (assessment phase, implementation phase, and evaluation phase).

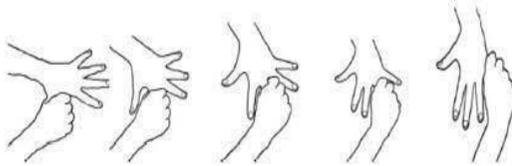
Assessment phase:

In addition to books, journals, periodicals, and internet searches, the researchers also reviewed earlier and more recent literature that was available. Data on demographics, reproductivity, fatigue, and stress level were the first things the researchers collected when gathering their data. Thereafter, individual interviews were conducted with each preeclamptic lady in each group to gather fundamental information.

Implementation Phase:

The finger handheld relaxation technique was implemented through the following steps:

The presentation (demonstration) of the finger-held relaxation method was part of the content preparation (definition, purpose, types of relaxation therapy, and how it is used). Setting up the scene: the woman chose a peaceful, quiet location while relaxing in a comfortable position. Our fingers' length-long meridians, or energy conduits, are connected to a variety of physical processes and emotions. The primary specific intervention method involved holding each of the five fingers, from thumb to little/pinky finger, for three to five minutes each time the patient experienced discomfort. Holding a finger while inhaling deeply (relaxing) can assist to lessen and heal physiological and mental stress because the finger's grip heats the energy entry points to the meridians (energy channels) on our fingertips and mental strain (Haniyah & Adriani, 2019).



The pre-eclamptic woman was told what would happen. The researchers worked one-on-one with each of the three pre-eclamptic women they recruited each day.

After washing their hands and cleansing the hands of the pre-eclamptic woman with a moist towel, the researchers did the finger-handled intervention while the patient lay on the bed with her eyes closed and her breathing heavy. Handheld finger relaxation exercises were done for 30 to 50 minutes. After three hours, both groups were evaluated. To the experimental group, the intervention was given. Stress and fatigue levels were once again measured (posttest) for both groups to compare the ratio of sensitivity before and after treatment.

For the control group:

For almost 30 minutes, the researchers spoke face-to-face with each woman in the control group to identify themselves, outline the study's objectives, and obtain their verbal agreement. Without employing the Finger Handheld relaxation technique after that, the researchers gathered data on the women's demographics, exhaustion, and stress evaluation scores. The control group received standard pre-eclamptic hospital care.

Evaluation phase:

Using the same instruments as the pretest, the researchers reevaluated the levels of stress and fatigue for all pre-eclamptic women in the experimental and control groups (tools II and III as post-test). After the intervention, the pre-eclamptic women in the experimental and control groups underwent evaluations of their "Fatigue and Stress Levels (Posttest) every 6 and 12 Hour." Moreover, satisfaction scores for both groups of pre-eclamptic women will be assessed after 12 hours. Each pre-eclamptic woman had a 30-minute meeting with the researchers to assess her progress and the results of the Finger touch relaxation technique.

Statistical analysis

Using software from IBM Corporation, all data were gathered, collated, and statistically

examined (IBM Corp, 2015). Windows version 23.0 of IBM SPSS Statistics IBM Corp. Armonk, NY The mean SD, (range), and number & were used to express quantitative data and respectively qualitative data (percentage). Two groups of normally distributed variables were compared using the t-test. All tests were two-sided and used the Chi-square test to compare the percentage of categorical variables. P-values of 0.05 or higher were regarded as statistically significant, 0.001 or higher as very significant, and 0.05 or below as inconsequential.

Results:

According to **Table 1**, the finger handheld relaxation and control groups were made up of 62% and 70% of people in the 30 to 40 age range, respectively. Secondary education was held by 40% in the finger handheld relaxation group compared to 38% in the control group. Also, roughly a third (30%, and 35%, respectively) of the finger handheld relaxation group and the control group had a secondary education. Housewives made constituted as much as (70%, and 84%) of the finger handheld relaxation and control groups, respectively. Rural residents included 58% and 68% of the finger handheld relaxation and control groups, respectively. Regarding their demographic traits, there was no statistically significant difference between the two groups.

According to **Table 2**, the finger handheld relaxation and control groups, respectively, had 30% and 42% primigravida. The finger handheld relaxation group (66%), as well as the control group (62%), both had multipara. In the finger handheld relaxation group and control group, respectively, 84% & 90% had never undergone an abortion. There was no statistically significant difference between the two groups in terms of their reproductive histories, with 36% of the finger-hand relaxation group having experienced previous pregnancy difficulties compared to 44% of the control group.

Table (3) demonstrates a difference in fatigue levels, with pre-eclamptic women reporting lower fatigue.

According to **table 4**, the pre-eclamptic women demonstrated a statistically significant ($P<0.001$) decrease in their fatigue mean score

following the finger handheld relaxing application.

Table (5) shows that pre-to the finger handheld relaxation application, 96% of the study group had an average stress level compared to 90% of the control group. post using a finger-held relaxation technique, the study group's average stress level reduced to

60%, compared to 96% in the control group, with a highly statistically significant difference between the two groups ($P < 0.000^*$).

Table (6) shows that, at the < 0.05 level, there was a statistically significant difference in the mean fatigue scores of pre-eclamptic women in both groups between the pre and post-test.

Table (1): The studied pre-eclamptic women's demographic characteristics

Demographic characteristics		Finger handheld relaxation Group		Control Group		Test of significance
		n=50	%	n=50	%	
Age	- < 20	7	14.0	5	10	X ² = 0.167 P= 0.967
	- 20-30	13	26.0	15	30.0	
	- 30< 40	32	62.0	35	70.0	
Mean+SD		28.33±6.78		28.56±6.62		t= 0.024 P= 0.878
Educational Level	- Illiterate	10	20.0	5	20.0	X ² =0.5.825 P=0.123
	- Read & Write	5	10.0	15	30.0	
	- Secondary	20	40.0	19	38.0	
	- University	15	30.0	9	18.0	
Occupation	- Housewife	35	70.0	42	84.0	X ² = 2.714 P= 0.096
	- Working	15	30.0	8	16.0	
Place of Residence	- Urban	21	42.0	16	32.0	X ² = 0.842 P= 0.372
	- Rural	29	58.0	34	68.0	

X²= Chi-Square test

t= Student T test * Significant p at ≤ 0.05

Table (2): The studied pre-eclamptic women's reproductive history

Items	Groups				Test of Significance
	Finger handheld relaxation Group (n=50)		Control group (n=50)		
	No.	%	No.	%	
Gravidity					
- Primigravida	15	30.0	21	42.0	X ² = 3.67 P= 0.267
- Multigravida	17	34.0	12	24.0	
- Grand multigravida (≥ 4)	18	36.0	17	34.0	
Parity					
- Primipara	6	12.0	14	28.0	X ² = 3.351 P= 0.348
- Multipara	33	66.0	31	62.0	
- Grand multipara (≥ 4)	11	22.0	5	10.0	
Number of abortions					
- Yes	8	16.0	5	10.0	X ² = 0.564 P= 0.463
- No	42	84.0	45	90.0	
Previous pregnancy complications					
- Yes	18	36.0	22	44.0	X ² = 1.416 P= 0.237
- No	34	68.0	28	56.0	

X²= Chi-Square test * Significant p at ≤ 0.05

Table (3): Fatigue levels among the studied pre-eclamptic women in both groups post-finger handheld relaxation application (n=100)

Fatigue level	Finger handheld relaxation Group (n=50)		Control group (n=50)		T	P-value
	No	%	No	%		
No fatigue (0)	15	30	0	0.0	22.67	<0.001**
Very little (1-9)	13	26	0	0.0		
Mild (10-30)	20	40	0	0.0		
Moderate (3- 60)	2	4	20	40		
Severe (61-80)	0	0.0	18	36		
Worst (81-100)	0	0.0	12	24		

Table (4): Fatigue mean scores post-finger handheld relaxation application among the studied pre-eclamptic women (n=100)

Items	Finger handheld relaxation group (n=50)	Control group (n=50)	P- value
Fatigue score	14.12+ 1.13	26.45+ 2.78	123.78 (0.0001*)

*highly Significance at 0.0001 levels

Table (5): Distribution of the studied groups according to their stress level pre and post-finger handheld relaxation application (n=100)

Stress	Pre				Post			
	finger handheld relaxation group (n=50)		Controlgroup (n=50)		finger handheld relaxation group (n=50)		Controlgroup (n=50)	
	No.	%	No	%	No	%	No.	%
Normal	0	0.0	5	10.0	20	40.0	0	0.0
Average	48	96.0	45	90.0	30	60.0	47	94.0
High	2	4.0	0	0.0	0	0.0	3	6.0
P value between group	X= 5.016 P= 0.697 t= 1.476 P= 0.153				X= 6.136 P= 0.012*t= 0.876 P= 0.064			

χ^2 = Chi-Square test

χ^2 comparison in the same overtime

* Significant p at ≤ 0.05

F ANOVA test

t = paired t-test

F comparison in the same group across the days

Table 6: Comparison of pre and post-test fatigue levels among pre-eclamptic women in both finger handheld relaxation and control groups (n=100)

Group	Fatigue level				χ^2	p-value
	Pretest		Posttest			
	Mean Score	SD	Mean Score	SD		
finger handheld relaxation Group	4.27	1.03	2.24	1.08	62.3	<0.001**
Control Group	4.65	1.04	3.31	0.45	0.7	1.54 ^{NS}

NS=Non-significant, *= significant at p<0.05 level

Discussion:

Preeclampsia is a condition that can be dangerous for the health of the mother and the fetus and is linked to stress-related psychological issues. The sympathetic nervous system can be lowered with a finger-held

relaxing treatment, allowing the arteries to open up and improving blood flow and oxygen availability to the body's tissues. Also, it can reduce fatigue and lower stress levels (Arulkumaran et al., 2019).

According to the results of the current study, there were no appreciable differences in the demographic traits of the two groups. The results of this study show that there were no significant differences between the two groups for demographic qualitative characteristics. The researchers interpret this as evidence that the baseline levels of weariness were comparable between the two groups.

According to the results of the current study, pre-eclamptic women reported feeling less Fatigue than other women. This, in the opinion of the researchers, demonstrated the beneficial impact of finger portable relaxing application. The new research is in line with a study conducted in Iran by **Mahmoudirad et al., (2017)** on "The Benefits of Relaxation Response on Fatigue during Pregnancy," which concluded that relaxation therapy relieves muscular tension, lowers blood pressure and heart rate, and regulates respiration. People can relax each muscle individually using Benson's relaxation response, which reduces their stress and anxiety.

Between the two groups, there was a significant difference in the post-phase. This was in line with the findings of **Eittah et al., (2021)**, who found that the majority of the studied women in the experimental group had mild weariness after using the finger-handled approach. Furthermore, it was in agreement with the study by **Renuka et al., (2020)**, which discovered that none of the participants experienced the worst pain following finger relaxation intervention, and less than one percent of them experienced minor fatigue. Also, according to **Atun, (2020)**, there was a substantial difference in the fatigue scale between the experimental group and the control group when the finger grip relaxation was performed. Moreover, **Ariani et al., (2020)** indicated that statistical test results revealed the efficiency of finger grip relaxation on changes in the severity of pain and fatigue among patients. This guaranteed the intervention's effectiveness.

The current study's findings on the average score of stress level pre and post-intervention showed that, before the finger portable relaxation application, the majority of the study group had an average stress level.

With a highly statistically significant difference between the two groups, the study group's average stress level decreased after employing a finger-held relaxation technique. Moreover, relaxation reduces the stress response, which has been demonstrated to dramatically worsen pregnancy-related issues like exhaustion (**Mahmoudirad et al., 2017**).

Preeclampsia's physiopathology is generally supported by the fact that stress during pregnancy decreases uteroplacental blood flow by releasing corticosteroids and catecholamines, both of which have potent vasoconstrictor effects on the tone of peripheral blood vessels. Moreover, the placenta contains a large number of these hormone receptors. Stress-induced sympathetic nervous system activation may restrict blood supply to the uterus and fetus and increase the risk of preeclampsia.

According to the average stress level before and post-intervention score, the current study's findings showed that following finger handheld relaxation application, the study group's stress level dramatically decreased. This may be interpreted by a finger-held relaxation technique that would enhance the relaxation response, a person's capacity to cause the body to produce chemicals and brain messages that would cause the muscles and organs to slow down and would boost blood flow to the brain. (**The 2019 edition of Information Resources Management Reduced levels** of stress hormones and lower CNS activity, as seen in measurable changes in brain waves, are further characteristics of all relaxation response approaches. Preeclampsia was found to have a statistically significant positive link with psychosocial stress, which is related to higher levels of stress, according to studies. The pertinent literature, which underlined that preeclampsia is linked to maternal stress during pregnancy, once again corroborated our findings.

The results of an Iranian study named "The Effect of Benson Relaxation Technique on Stress, Anxiety, and Depression in Pregnant Women" by **Zenouzi, et al., (2021)** are generally consistent with the findings of the current finding. They have stated that Benson Relaxation treatment could be useful in

establishing psychological calm for both the health of the mother and the fetus aid in easing pregnant women's stress, anxiety, and despair (**Zenouzi et al., 2021**). The current finding is generally consistent with an Australian study by **Smith, et al., (2020)**, which found that relaxation therapy has helped lower stress among preeclamptic women during pregnancy.

The current finding is also corroborated by (**Mohammad & Shima, 2019**) research on the topic of the "Impact of the combination of relaxation technique (BRT) and short psychoeducational intervention (BPI) on multidimensional pain and stress in pregnant women." The findings of this study suggested that combining BRT and BPI could help pregnant women have less stress and multimodal discomfort.

The current finding is consistent with a study by **Paramban, et al. (2016)** in Curacao, Netherlands Antilles, titled "Effectiveness of relaxation therapy on reduction of stress among primigravid mothers," which showed a significant decrease in stress scores both before and after intervention practice among primigravida mothers (**Paramban et al., 2016**). Also, the previously mentioned study by **Kiron, et al. (2012)** in India found a significantly significant change in preeclamptic women's stress levels before and after intervention practice.

The results of the current study showed that there was a statistically significant difference in the mean fatigue levels of preeclamptic women in both groups between the pre-and post-test of finger handheld relaxation. This was in line with the findings of **Abd Elhaleem et al., (2013)**, who discovered in their study a statistically significant difference between the two groups. After receiving finger-hand-held relaxation therapy, **Chithra & D'Almeida (2014)** reported that the intervention group had higher patient satisfaction than the control group. Research confirmed that finger handheld relaxation was beneficial in lowering stress and fatigue.

Conclusion:

Based on the result of the present study, it can be concluded that the finger handheld relaxation technique has a significant effect on

reducing fatigue and stress among women with preeclampsia.

Recommendations:

The following suggestions are made based on the current study's findings:

- Finger handheld relaxation techniques should be integrated into the care of women with preeclampsia to help reduce fatigue and stress.
- Replication of the current study in more settings with a large sample size.
- Raising awareness among preeclamptic women about the benefits of finger handheld relaxation techniques in reducing fatigue and stress.

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