

Effect of Progressive Muscle Relaxation Technique on Postpartum After Pains Intensity among Multiparous Women

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Abstract

Background: Postpartum period is a convivial event yet a challenging period for all mothers. Minor discomforts which are physiologically engrained may cause some interruption in the normal routines of motherhood. Postpartum after pain is one of such discomforts which often goes unrecognized.

Aim of the study: Evaluate the effect of progressive muscle relaxation technique on postpartum afterpains intensity among multiparous women.

Design: A quasi-experimental research design.

Sample: A convenient sample of 100 postpartum mothers. Setting: At the postnatal unit of El-Shatby Maternity university hospital affiliated to alexandria university.

Tools: Data was collected through three tools, data structured interview schedule, which included socio-demographic characteristics, reproductive history and clinical assessment sheet; Short-Form McGill Pain Questionnaire (SF-MPQ), and a modified version of Chamber Price Pain Rating Scale (CPRS).

Results: This study reported highly statistically significant differences between them ($P \leq 0.0001$), where unbearable pain decreased sharply from 52% to 18% among the study group, while it remained the same (64%) among the control group. Also, after the 2nd session, the relationship between the two groups was also highly statistically significant ($P \leq 0.0001$). On the third PP day, it was highly statistically significant between them ($P \leq 0.0001$), where severe pain declined from 20% to 0% among the study group, while it raised sharply from 14% to 68% among the control group.

Conclusion: This study concluded that progressive muscle relaxation technique significantly reduced intensity of after pains of multiparous women with the intervention.

Keywords: Progressive muscle relaxation technique; Postpartum; Health personnel; Afterpains intensity; Multiparous women

Introduction

The postpartum, postnatal or puerperium is one of the most important events that constitutes a powerful and unique experience in women's lives and lives of their families. All postpartum-related experiences are etched into women's memories and shape their maternal identities. It is defined as

the period following labor during which the maternal body in general, and the genital organs, in particular, return back to the pre-pregnant status with minimum alteration left and it lasts from 4-8 weeks.

During the postnatal period, a woman's body experiences many physiological changes, especially in the uterus. After

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birth of the baby and delivery of placenta, the uterus continues contracting to enhance constriction of maternal blood vessels on uterine wall at placental site. These persistent mild contraction are termed as after-labor pains or after-pains, which create cramp-like pain for a few days to 1 or 2 weeks after delivery. After-pain is usually spasmodic in nature and is felt in the lower abdomen as the uterus contracts to return back to the pre-pregnancy size and place [1]. Pain has been documented as a major concern for women in the postpartum period. However, its management is a relatively neglected area of clinical research. As a result, evidence to support interventions to alleviate it is sparse. Treatments as pharmacological analgesia and non-pharmacological therapy.

Pharmacological treatment includes the use of prescribed medication as Non-Steroidal Anti-Inflammatory Drugs (NSAIDs and paracetamol. Despite pharmacological pain relief may be effective, consideration needs to be given in breast-feeding women. Therefore, it is essential to provide effective and safe pain management options and alternatives to mainstream medical treatments to women during the postpartum period [2]. Non-pharmacological pain control methods can be used to increase the effect of analgesics, in case of insufficient effect of analgesics, or when analgesics cannot be used.

The most common type of non-pharmacological pain relief is the Progressive Muscle Relaxation (PMR, it was developed by Edmund Jacobson and is known in the literature's science 1938. The aim of this technique or intervention is to help the person to get mindful insight about the differences between the tension sensation and relaxation sensation in the same muscle group. The advantages of these methods are increased choice of pain relief with minimal risk for mother and baby, it increases the interaction between the midwife and the postpartum woman.

Significance of the study

Afterpains is one of the negligible complaints experienced by approximately 67% of postpartum mothers. Between 50% and 80% of postnatal women worldwide experience a certain level of discomfort associated with after pains and 10% to 18% of mothers experience severe pain. After pains is routinely treated by pharmacological measures alone [3]. Non-pharmacological methods based on sound research findings are needed to aid in after pains relief. In terms of costs and benefits, the of nonpharmacological management is inexpensive and there are no adverse effects when compared to the use pharmacological management. In Egypt, there is insufficient researches examining. The effect of progressive muscle relaxation technique as a complementary therapy to relieve after pains.

Aim: This study aimed to evaluate the effect of progressive muscle relaxation technique on postpartum afterpain intensity among multiparous women.

Study hypothesis: Multiparous postpartum women who practice progressive muscle relaxation technique exhibit less after pain intensity than those who don't practice it.

Operational definition

Progressive Muscle Relaxation (PMR): In this study refers to tensing and relaxing the major muscle groups such as: The muscle of the hands, the biceps and triceps muscle, the muscles of the shoulder, the muscle of the neck, the muscle of face: Mouth and jaw, eyes and forehead, chest, the abdomen, the back muscles, the muscles of the thighs, legs, and finally the last group is the muscle of the feet.

Materials Methods

Study design

A quasi-experimental research design was used as an attempt to establish a cause-and-effect relationship between an independent and dependent variable, with no random assignment of participants.

Study setting

This study was conducted at the postnatal unit of El-Shatby Maternity university hospital affiliated to Alexandria university, Egypt.

Study subjects

A convenient sample of 100 postnatal women from the previously mentioned setting was recruited according to the following inclusion criteria:

- With the normal course of pregnancy, labor and postpartum.
- Free from any chronic medical and obstetrical problems.
- Don't receive any pharmacological pain relief measures.
- Willing to participate in the study.

Epi info 7 program was used to estimate the sample size by using the following parameters

- Population size is 1350/3 months
- Expected frequency 50%
- Acceptable error 10%
- Confidence coefficient 95%
- Minimal sample size 98 women
- Final sample size 100 women

The study subjects were equally assigned to either one of following two groups

- Study group (50 women) who practiced progressive muscle relaxation technique.
- Control group (50 women) who didn't practice progressive muscle relaxation technique.

Tools of data collection

Three tools were used by the researchers to collect the necessary data.

Tool one: Women's socio-demographic and clinical data structured interview schedule: This tool was developed by the researcher and entailed three parts.

Part (I): Women's socio-demographic data such as age, level of education, occupation, current residence and family type.

Part (II): Reproductive history such as gravidity, parity, type of previous deliveries, complications of previous pregnancies and deliveries as well as number of abortions, stillbirths and living children.

Part (III): Clinical assessment sheet, which included baseline data such as vital signs, uterine consistency, and level of funds.

Tool two: Short-form McGill Pain Questionnaire (SF-MPQ): This tool was originally developed and revised by to ensure compatibility with Arabian culture. It was adapted and translated into Arabic language by the researcher to assess the sensory and affective behavior associated with pain.

This tool has 2 subscales

Pain Rating Index (PRI): which comprises 15 items that reflects both the sensory (11 items) and affective (5 items) dimensions of pain.

These items were responded by a 5-points Likert like scale as follows:

- 0=None
- 1=Mild
- 2=Moderate
- 3=Severe
- 4=Unbearable
- **The total score was ranged between 0 to 60 and classified as follows:**
- No pain=0
- Mild pain (from 1 to 15)
- Moderate pain (from 16 to 30)
- Severe pain (from 31 to 45)
- Unbearable pain (from 46 to 60)

Visual Analogue Scale (VAS)

It is a self-report device that consists of a horizontal line in centimeters from 0 to 10, corresponding to the degree of pain, where 0 indicates no pain, 1-3 indicates mild pain, 4-6 indicates moderate pain, 7-9 indicates severe pain and 10 indicate unbearable pain. It is a 10-points numerical scale.

Tool three: A modified version of Chamber Price Pain Rating Scale (CPPRS): It was originally developed and then revised for its reliability and validity. This tool was adapted to measure the behavioral responses to pain. It included four dimensions: posture, gross motor activity, facial expression

and verbalization [4]. For each dimension, one of the three alternatives is to be elicited by the researcher. For posture, the choice is between very relaxed, guarded and tense posture. For gross motor activity, the choice is between very restless, slightly restless and quiet. For facial expression, the choice is between no frowning, some frowning and constant frowning or grimacing. Finally, women's verbalization varies between normal no sound, groans/moans and cries/sobs.

The total score of the four dimensions was ranged from 0-8 and classified as follows:

- No pain (0)
- Mild pain (1-2)
- Moderate pain (3-4)
- Severe pain (5-6)
- Unbearable pain (7-8)

Field work

The study was accomplished according to the following steps:

- Approval was obtained from the research ethics committee, faculty of nursing, Alexandria university.
- The researcher received certified training about the application of progressive muscle relaxation technique by a specialist from the higher authority for complementary medicine of the Arab African union. The training extended 4 days, two training sessions/week.
- Official letters from the vice dean of the graduated students, Alexandria university were directed to the responsible authority of the study setting to take permission to collect data after explaining the purpose of the study.
- Tools were tested for content validity by a jury of 5 experts in the field of obstetric and gynecologic nursing.
- Tools were tested for its reliability by using the appropriate test.

Tools development

- Tool one was developed by the researcher based on review of recent and relevant literature.
- Tool two was adapted and translated to the Arabic language by the researcher.
- Tool three was adapted by the researcher.

Pilot study

The pilot study was carried out on 10 postnatal women; (excluded from the main study subjects) to test the feasibility of the study as well as to ascertain the clarity and applicability of the tools in addition to calculate the time needed to complete them.

Data collection

Data was collected through the following phases:

Assessment phase:

- Data of tool one was collected from postnatal women during the immediate postpartum period, through an interview schedule, which was conducted individually.
- The first 50 women who fulfilled the inclusion criteria were assigned for the control group and the second 50 women were assigned for the study group.

Preparation phase

The researcher prepared a safe, clean, and calm environment as well as adjusted lighting and room temperature.

Implementation phase:

- The researcher demonstrated PMR technique to each woman individually, followed by a demonstration by the women 3-4 times until she can master all the steps.
- The researcher started the session and asked each woman.
- Empty her bladder and sit on the chair in a comfortable position.
- Take deep breathing (inhale deeply through her nose, feeling her abdomen rise as one inflates the body with air and exhale slowly out the mouth), then repeat continuously 3-5 times.
- Tighten the face muscle, wrinkle the forehead, frown nose, close eyes very tightly, pursed the lips and hold for 5-7 seconds, then release the hold gradually while counting for 10 seconds.
- Tighten the hands, forearms and biceps muscles.
- Clench the fist of her hands, move on to biceps by drawing the forearm up towards shoulder, then, slowly release while counting from 1 to 10 and repeat on the left arm.
- Turn her head slowly until she feels a gentle stretch, hold for five seconds and then let her head drop down as far as it was comfortably gone.
- Draw and hold the abdomen for 5-7 seconds as far as she can with supporting hands and then, slowly release while counting from 1 to 10 seconds.
- Tighten the Gluteal muscles by pulling them together, hold for 5-7 seconds and then release slowly while counting from 1 to 10 seconds.
- Tighten her leg muscles by lifting the leg off the ground, straightening knee and pointing toes toward the head; hold for 5 seconds then, release slowly while counting from 1 to 10 seconds and repeat in the other leg.
- Women received progressive muscle relaxation technique through two sessions of one-hour intervals, where the duration of each session was approximately 10 minutes.
- The researcher instructed the woman to perform the progressive muscle relaxation technique at home for 10 minutes, 2 times/day (in the morning and in the evening) for 2 days, meanwhile, she followed her through phone calls. Women of the control group didn't practice the progressive muscle relaxation technique.

Evaluation phase

- The researcher evaluated afterpains intensity for the study group five times; before the first session (pre-test), after the first session (post-test), before the second session (pre-test), after the second session (post-test), the fifth time was on the 3rd day postpartum (post-test).
- The researcher evaluated afterpain intensity for the control group five times as mentioned before, but without giving sessions.
- The researcher carried out the fifth evaluation of afterpains intensity for both groups on the 3rd day postpartum at the hospital.
- After completion of data collection, comparisons between the two groups were done to identify the effectiveness of progressive muscle relaxation technique on the intensity of afterpains.

Statistical analysis

- The collected data were categorized, coded, computerized, tabulated and analyzed using Statistical Package for Social Sciences (SPSS) version 23 program.
- Statistical measures were used such as cross tabulation to describe and summarize categorical variables of the two groups.
- Descriptive and analytical statistics were used such as percentages, mean and SD; whereas *Chi-square* test, fisher exact-test and t-test were used to find out the difference in the results at <0.05 (5%) level of significance.

Ethical considerations

- Appropriate ethical approval was obtained
- Written informed consent was taken from each participant after explaining the aim of the study.
- Participants' privacy and right to withdraw at any time were kept.
- Confidentiality of their data was assured

Results

Table 1 presents the distribution of postnatal women according to their socio-demographic data. The mean age was 30.12 ± 5.982 years for the study group and 29.70 ± 4.514 years for the control group. Level of education also revealed that almost three-fifths and more (56% and 64%) of the latter and the former groups respectively were illiterate or read and write. In addition, occupation manifested that a sizable proportion of the study and the control groups (70% and 60%) respectively were housewives [5]. However, the vast majority of the working former and latter groups (93.3% and 95%) respectively were workers, merchants and farmers.

Table 1: Distribution of postnatal women according to their socio-demographic data.

Socio-demographic data	Study group (n=50)		Control group (n=50)		t-test (P) F/χ2 (P)
	No	%	No	%	
Age (years)					
Min-max	20-34		20-34		0.396 (0.693)
Mean ± SD	30.12 ± 5.982		29.70 ± 4.514		
Level of education					
Illiterate/read and write	32	64	28	56	0.683 (0.711)
Basic	7	14	9	18	
Secondary or its equivalent	11	22	13	26	
Occupation					
Housewife	35	70	30	60	1.099 (0.294)
Working	15	30	20	40	
Type of work	(n=15)	%	(n=20)	%	
Employee	1	6.7	1	5	3.921 (0.27)
Worker	1	6.7	5	25	
Merchant	6	40	3	15	
Farmer	7	46.6	11	55	
Marital status					
Married	50	100	49	98	1.01 (0.315)
Divorced	0	0	1	2	
Current residence					
Urban	18	36	11	22	2.38 (0.123)
Rural	32	64	39	78	
Type of family					
Nuclear	19	38	11	22	3.048 (0.081)
Extended	31	62	39	78	
Family income/month					
More than enough	0	0	3	6	5.191 (0.075)
Just enough	49	98	43	86	
Not enough	1	2	4	8	

Note: χ2 (P): Chi-square test and P for χ2 Test; F (P): Fisher Exact test and P for F Test *: Significant at P ≤ 0.05

Moreover, marital status showed that all and almost all (100% and 98%) of the study and the control groups respectively were married. Furthermore, current residence and type of family demonstrated that a sizable proportion of the former and the latter groups (64% and 78%) respectively were rural residents, whereas (62% and 78%) of them respectively had extended families. Finally, family income/month displayed that the vast majority of the study and the control groups (98% and 86%) respectively had just enough family income [6]. However, the two groups were homogenous, where no statistically significant differences were found between their demographic data.

Table 2 exhibits the distribution of postnatal women according to their reproductive history. It was clarified that around two-thirds (66% and 68%) of the study and the control groups respectively had 4-7 pregnancies; about three-fifths (56% and 58%) of them respectively had no abortion; and approximately one-half and more (48% and 54%) had 1-3 deliveries [7]. However, all (100%) of the two groups had normal deliveries. It was also elucidated that the majority of the study and the control groups (86% and 90%) respectively had no stillbirth, and almost three-fifths (56% and 60%) of the latter and the former groups respectively had 1-3 living children.

Table 2: Distribution of postnatal women according to their reproductive history.

Reproductive history	Study group (n=50)	Control group (n=50)	F/χ2 (P)
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	No	%	No	%	
Gravidity					
1-3	17	34	16	32	0.045 (0.832)
4-7	33	66	34	68	
No. of abortions					
0	28	56	29	58	0.041 (0.84)
1-4	22	44	21	42	
Parity					
1-3	27	54	24	48	0.36 (0.549)
4-7	23	46	26	52	
Type of previous deliveries					
Normal	50	100	50	100	0.453 (0.501)
CS	10	20	7	14	
No. of stillbirths					
0	43	86	45	90	0.379 (0.538)
1-3	7	14	5	10	
No. of living children					
1-3	30	60	28	56	0.164 (0.666)
4-7	20	40	22	44	
Occurrence of previous pregnancy complications					
Yes	23	46	16	32	2.06 (0.151)
No	27	54	34	68	
Type of previous pregnancy complications: #	(n=23%)		(n=16%)		
Bleeding	12	52.2	8	50	0.034 (0.998)
PIH	4	17.4	3	18.7	
GDM	4	17.4	3	18.7	
UTI	4	17.4	3	18.7	
Occurrence of previous labor complications					
Yes	5	10	12	24	3.473 (0.062)
No	45	90	38	76	
Type of previous labor complications:	(n=5)		(n=12)		
Preterm labor	0	0	3	25	2.951 (0.229)
Prolonged labor	0	0	2	16.7	
Bleeding	5	100	7	58.3	
Occurrence of previous postpartum complications					
Yes	5	10	6	12	0.102 (0.749)
No	45	90	44	88	
Type of previous postpartum complications	(n=5)		(n=6)		
Bleeding	5	100	2	33.3	5.238 (0.073)
Puerperal sepsis	0	0	2	33.3	
Breast complications	0	0	2	33.3	
Duration of current pregnancy (weeks)					

Min-max	37-40	37-40	1.097 (0.275)
Mean ± SD	38.34 ± 0.961	38.53 ± 0.759	

Note: #=More than one response; χ^2 (P)=Chi-square test and P for χ^2 Test; F (P)=Fisher exact test and P for F Test; *=Significant at $P \leq 0.05$

In addition, previous pregnancy complications were reported by 46% and 32% of the study and the control groups respectively. Yet, bleeding was the main complication reported by one-half and more (50% and 52%) of the latter and the former groups respectively. Moreover, previous labor complications were reported by a minority of the study and the control groups (10% and 24%) respectively. Nevertheless, bleeding was the main complication reported by 100% of the former group, compared to 58% of the latter group. Furthermore, previous postpartum complications were experienced by only (10% and 12%) of the study and the control groups respectively [8]. However, bleeding was the main complication experienced by 100% of the former group, compared to 33.3% of the latter group.

Lastly, the mean duration of current pregnancy was 38.34 ± 0.961 week for the study group and 38.53 ± 0.759 week for the control group. However, the two groups' reproductive history was almost similar, where no statistically significant differences were found between them.

Table 3 illustrates the distribution of postnatal women according to their total score of sensory and affective dimensions of pain, using PRI. Before the 1st session, the relationship between the two groups was not statistically significant [9]. After the 1st session it was highly statistically significant between them ($P \leq 0.0001$), where unbearable pain decreased sharply from 52% to 18% among the study group, while it remained the same (64%) among the control group. After the 2nd session, the relationship between the two groups was also highly statistically significant ($P \leq 0.0001$), where unbearable pain dropped sharply from 18% to 0% among the study group, while it remained the same (64%) among the control group. On the third PP day, it was highly statistically significant between them ($P \leq 0.0001$), where severe pain declined from 20% to 0% among the study group, while it raised sharply from 14% to 68% among the control group.

Table 3: Distribution of postnatal women according to their total scores of sensory and affective dimensions of pain, using PRI.

Total scores of sensory and affective dimensions of pain	Study group (n=50)		Control group (n=50)		F/ χ^2 (P)
	No	%	No	%	
Before the 1st session					
Mild (1-15)	1	2	0		2.936 (0.401)
Moderate (16-30)	11	22	11	22	
Severe (31-45)	12	24	7	14	
Unbearable (46-60)	26	52	32	64	
After the 1st session					
Mild (1-15)	11	22	0	0	28.236 (<0.0001)**
Moderate (16-30)	13	26	11	22	
Severe (31-45)	17	34	7	14	
Unbearable (46-60)	9	18	32	64	
Before the 2nd session					
Mild (1-15)	11	22	0	0	28.786 (<0.0001)**
Moderate (16-30)	12	24	11	22	
Severe (31-45)	18	36	7	14	
Unbearable (46-60)	9	18	32	64	
After the 2nd session					
Mild (1-15)	25	50	0	0	58.799 (<0.0001)**
Moderate (16-30)	17	34	11	22	
Severe (31-45)	10	20	7	14	
Unbearable (46-60)	0	0	32	64	
On the 3rd PP day					
No (0)	34	68	6	12	63.129 (<0.0001)**

Mild (1-15)	9	18	0	0
Moderate (16-30)	7	14	10	20
Severe (31-45)	0	0	34	68

Note: χ^2 (P): Chi-square test and P for χ^2 test ; F (P): Fisher exact test and P for F test ; *: Significant at $P \leq 0.05$; **: Highly significant at $P \leq 0.05$

Table 4 demonstrates the distribution of postnatal women according to their total scores of pain intensity, using VAS. Before the 1st session, the relationship between the two groups was not statistically significant. After the 1st and the 2nd sessions, it was highly statistically significant between them ($P \leq 0.0001$), where unbearable pain declined sharply from 68% to 18% after the 1st session and from 18% to 0%

after the 2nd session among the study group, while it remained the same (64%) after the same sessions among the control group [10]. On the 3rd PP day, the relationship between the two groups was also highly statistically significant between them ($P \leq 0.0001$), where severe pain descended from 18% to 0% among the study group, while it ascended from 14% to 68% among the control group.

Table 4: Distribution of postnatal women according to their total scores of pain intensity, using VAS.

Total scores of pain intensity	Study group(n=50)		Control group(n=50)		F/ χ^2 (P)
	No	%	No	%	
Before the 1st session					
Moderate (4-6)	11	22	11	22	0.394 (0.821)
Severe (7-9)	5	10	7	14	
Unbearable(10)	34	68	32	64	
After the 1st session					
Mild (1-3)	10	20	0	0	31.909 (<0.0001)**
Moderate (4-6)	8	16	11	22	
Severe (7-9)	23	46	7	14	
Unbearable(10)	9	18	32	64	
Before the 2nd session					
Mild (1-3)	10	20	0	0	29.95 (<0.0001)**
Moderate (4-6)	10	20	11	22	
Severe (7-9)	21	42	7	14	
Unbearable(10)	9	18	32	64	
After the 2nd session					
Mild (1-3)	23	46	0	0	56.94 (<0.0001)**
Moderate (4-6)	18	36	11	22	
Severe (7-9)	9	18	7	14	
Unbearable(10)	0	0	32	64	
On the 3rd PP day					
No (0)	34	68	6	12	63.129 (<0.0001)**
Mild (1-3)	9	18	0	0	
Moderate (4-6)	7	14	10	20	
Severe (7-9)	0	0	34	68	

Note: χ^2 (P): Chi-square test and P for χ^2 Test F (P): Fisher exact test and P for F test; *: Significant at $P \leq 0.05$ **: Highly significant at $P \leq 0.05$

Discussion

There are many changes occurring in diverse aspects of women's lives during the postpartum period, where women cope with problems and take advantage of this opportunity. Therefore, accurate knowledge of their experiences and emotion is essential to help them profit from this crucial

period. After pain is one of postpartum problems that may cause some trouble, which can hinder a woman's ability to care for herself and her neonate [11]. It can be managed by pharmacological methods such as analgesics or non-pharmacological measures such as relaxation techniques as progressive muscle relaxation technique.

Although after pain has been recognized as a major concern for women in the postpartum period; its management, however, is a relatively ignored area of clinical research [12]. Thus, this study was conducted to evaluate the effect of progressive muscle relaxation technique on postpartum after pain intensity among multiparous women. According to the results of the current study it can be noticed that both the study and control groups were matching in almost all of their socio-demographic characteristics, gynecological history and clinical data. This can be interpreted in the light that most women attending El-Shatby Maternity university hospital are more or less from the same socioeconomic class.

Generally speaking, the participants' consistent profile was helpful in limiting extraneous factors that could interfere with the targeted intervention's effect on postpartum after pain intensity [13]. It also aided in comprehending and ensuring the validity and relevance of upcoming findings of the current study.

The results of the present study revealed that there were no statistically significant variations in after-pain severity between the experimental and control groups prior to intervention [14]. However, there were clearly statistically significant differences between the two groups in terms of pain intensity immediately after the intervention and on the third postpartum day. This was definitively proven when the severe and unbearable after-pains in the experimental group was sharply and dramatically reduced among the study group after intervention compared to the control group [15]. Also, there were statistically significant differences between pain intensity scores before and after sessions among the experimental group. Meanwhile, such a difference was not found between the control group [16]. The experimental group's decreased pain intensity may be mostly attributable to their greater comfort and wellbeing, which is likely endorsed by the used PMRT.

This result suggests a possible positive influence of progressive muscle relaxation technique [17]. Due to it increases the body's immunity and sense of well-being through endorphins release. Moreover, it increases the feeling of control, improves the ability to block inner talk, and improves sleep. Furthermore, it increases parasympathetic activities so it decreases the cardiac index, blood pressure, heart rate, breathing rate, enhances performance of physical activities and causes warm or cool body parts. All these can lower the intensity of after labor pains and motivate postpartum women to initiate the bonding with her neonate.

Conclusion

The current finding partly corresponds with a study conducted in Egypt, where it was reported that practicing PMRT was effective in reduction of the mean score of after pains among postpartum women. It also relatively

conforms to a study performed in India, where it was reported that there was a highly statistically significant difference among the study group in postoperative pain perception ($P < 0.000$) after PMRT, while there were no significant differences among the control group in pain perception. Based on the findings of the present study, it can be concluded that progressive muscle relaxation technique significantly reduced intensity of after pains of postpartum mothers with the intervention. So, the study aim and hypothesis were achieved within the framework of the present study.

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