

A Study to Assess Effect of San-Yin-Jiao (SP-6) Acupressure on after Pains among Multi Parous Women in a Selected Hospital in Mangalore

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Abstract:- The present study was conducted to assess the effect of San-Yin-Jiao (SP-6) acupressure on afterpains among multiparous women in a selected hospital in Mangalore. The objectives of the study were to assess the level of afterpains during immediate postnatal period, to find the effect of SP-6 acupressure on afterpains among experimental group, find an association between perception of afterpains and selected demographic variables and find an association between perception of afterpains and physiological responses. An experimental approach with pretest posttest control group design was adopted for the study. In the first phase, 40 multiparous women delivered in K. S Hegde Charitable Hospital, Mangalore were selected by purposive sampling technique and random allocation method was used to allocate the samples into experimental and control groups. The sociodemographic data and physiological responses were assessed with a structured questionnaire and visual analogue scale was used for measuring intensity of afterpains. The experimental group was given the treatment of SAN-YIN-JIAO (SP-6) acupressure for a period of 10 minutes. The study revealed that when the effect of SP-6 acupressure on afterpains were analyzed at each time period using repeated measures of ANOVA, significant differences were observed immediately after applying acupressure ($F=19.40, p=0.000$), as well as 30 min ($F=13.23, p=0.004$), 1 hour ($F=13.35, p=0.004$), and 2 hours ($F=9.05, p=0.035$) after the procedure. No difference was observed between the two groups at 3 hours after applying acupressure ($F=5.89, p=0.073$). The Independent t test was used to compare the difference between the experimental and control groups which indicated that there was a significant difference between the control and experimental group on reduction of after pains. Thus, acupressure to the SP-6 meridian can be an effective non-invasive nursing intervention for alleviation of after pains, with effects lasting for 2 hours post-treatment.

Keywords:- San-Yin-Jiao (SP-6) acupressure, afterpains.

I. INTRODUCTION

Giving birth can be both a joyous and stressful occasion for a woman.¹ One of the earliest body changes during postnatal period experienced by the mother after giving birth is the change in the uterus. This process called involution is the way by which reproductive organs return to their non-pregnant state. After pains are uterine contractions that follow birth and are part of involution process and occurs in approximately 30% to 40% of all multiparous women.² The

most severe discomfort produced from these painful contractions seem to occur within 48hrs after delivery. With each pregnancy the tone of uterine muscle become more and more lax which causes greater periods of relaxation with a corresponding need for the uterus to contract more forcefully. Acupressure, a form of traditional Chinese medicine is a safe and gentle alternative therapy where a variety of suggested points to provide relief for after pains are used in which SP-6 provides the most consistently effective pain relief for women.³

A. Need for the study

Afterpains may be due to ischemia of the uterus as the result of uterine contractions. Afterpains may be pronounced when the baby is put to breast. Sucking stimulates the neurohypophysis to liberate oxytocin, a hormone that not only stimulates expression of milk but also stimulates the uterus to contract vigorously. Afterpains are necessary to shrink the uterus down to its previous size and to expel blood clots and thereby reducing uterine bleeding. The most acute the afterpains, the faster uterus return to normal. These afterpains which are explicit during sucking can affect the psychological bonding between mother and child due to delay nursing. In these circumstances nurses can successfully impart and use various pain management measures from alternate medicine which is found safe and effective⁴.

Acupressure is an alternate medicine which can be integrated into the current nursing practice. The skill of acupressure is easy to learn and can be used to help relief various symptoms in a wide range of patient care settings. The SP-6 acupoint is located 3 t-suns proximal to the tip of medial malleolus just behind the medial border and posterior surface of the tibia and it is the junction point of the liver, spleen and kidney meridians. This acupoint is commonly used for reproductive conditions in women such as dysmenorrhea, labour inducement and afterpains. Acupressure to San -Yin -Jiao can be used at the beginning of the breastfeed to help reduce the intensity of the contractions.⁵

B. Statement of the problem

A study to assess effect of San-Yin-Jiao (SP-6) acupressure on afterpains among multiparous women in a selected hospital in Mangalore

C. Objectives of the study

- Assess the level of afterpains during immediate postnatal period among control group and experimental group with Visu

- al Analogue scale.
- Assess the effect of SP-6 acupressure on afterpains among experimental group.
- Find an association between perception of afterpains and selected demographic variables.
- Find an association between perception of afterpains and physiological responses.

D. Operational definitions:

- **Effect:** In this study, effect refers to the outcome of San-Yin-Jiao (SP-6) acupressure on afterpains as measured by visual analogue scale for pain
- **San-Yin-Jiao (SP-6) acupressure:** Acupressure/ Chinese massage is a form of treatment for pain that involves pressure on particular points in the body known as acupressure points.⁶ In this study SP6 acupressure refers to the pressure applied for the multiparous women in the San-Yin-Jiao points (point on the front of the leg just behind the shin bone, width of one hand above the crown of inner ankle) bilaterally for 10 mins continuously to relieve afterpains during the immediate postnatal period.
- **Afterpains:** Afterpains are the intermittent uterine contractions after delivery of varying intensity, which occurs as the uterus descends back into the pelvis.⁷ In this study afterpains refers to the pain experienced by multiparous women, whose uterine musculature does not sustain steady retraction because of decreased muscle tone from prior child bearing. Synonymous terms are postpartum uterine cramps, uterine pains and afterbirth pain.
- **Multiparous women:** In this study the term multiparous women refers to the women who has borne more than one viable infant and are within the period of 24hrs of delivery.

E. Hypotheses

All the hypotheses are tested at 0.05 level of significance.

- **H1:** The mean-post test pain scores of the subjects will be significantly lower than the pre-test pain scores at 5% level of significance as measured by Visual Analogue scale.
- **H2:** There will be a significant difference in reduction of afterpains among multiparous women in experimental and control group.
- **H3:** There will be a significant association between afterpains perception among multiparous women and selected demographic variables.
- **H4:** There will be a significant association between afterpains perception among multiparous women and physiological responses.

II. METHODOLOGY

A. Research design:

The study design adopted was a true experimental study with pretest posttest control group design where the participants were randomly assigned to either the experimental or control group.

B. Setting of the study:

The study was conducted in Justice K.S. Hegde Charitable Hospital, Deralakatte, Mangalore which is a 1000 bedded multispecialty teaching hospital.

C. Population:

In this study, population comprises of multiparous women in their immediate postnatal period admitted in the postnatal ward.

D. Sample and sampling techniques:

In this study, 40 multiparous women (20 in control group and 20 in experimental group) in their immediate postnatal period, admitted in Justice K.S.Hegde Charitable Hospital, Deralakatte, Mangalore and who met the inclusion criteria were selected as sample. Convenient sampling technique was used during the first phase of the study to select the hospital. In the second phase 40 multiparous women were randomly selected by lottery method based on inclusion criteria. In the third phase random allocation was used to allocate the samples into experimental and control groups. Random sampling is the technique in which every member (element) of the population has a probability higher than zero for being selected for a sample, which increases the sample's representativeness of the target population.⁸

E. Sampling criteria

a) Inclusion criteria:

Multiparous women who:

- Have undergone vaginal delivery (2 or > 2)
- Had multiple gestation, polyhydramnios and large babies
- Are having afterpains >4 score in visual analogue scale for pain and not treated with analgesics
- Are within 24hrs of delivery.

b) Exclusion criteria:

Multiparous women who:

- Are not willing to participate in the study
- Have undergone caesarean section
- Are with high risk cases like postpartum haemorrhage, chronic hypertension etc
- Are having afterpains <4 score in a visual analogue scale for pain.

F. Description of the tool

• Tool 1: Structured questionnaire

➤ Section A: Socio Demographic Variables

The socio demographic variables consisted of six items namely age, education, occupation, family income, religion and parity.

➤ Section B: Physiological responses

The physiological responses in reaction to pain consisted of sympathetic responses (heart rate, blood pressure, respiratory rate, diaphoresis and cold extremities) and behavioural responses (guarding, drawing up of legs, clenching of jaw and fists, facial grimace and withdraw when touched)

• Tool 2: Visual analogue scale for pain

In order to measure the pain intensity a standard version of Johns Hopkins Visual Analogue Scale was used. It was a wooden frame marked from zero to ten encompassing ten divisions at equal distance namely 0,1,2,3,4,5,6,7,8,9,10. The divisions zero to ten portrayed the pain intensity in ascending order i.e. at zero- lowest pain intensity and at ten – peak pain. The subjects were asked to move a sliding metal pointer attached over the wooden frame to their pain level.

➤ Categorization of scores

Categories	Scores
No pain	0
Mild pain	1-3
Moderate pain	4-6

Severe pain

7-10

• PROCEDURE FOR SP6 ACUPRESSURE

- Participants were asked to lie down comfortably on a bed in the supine position
- The researcher placed herself at the foot of the bed to the right side of the participant
- Located the SP 6 site by identifying tsuns above the inner malloelus and marked the point
- After locating the site, both the thumbs were placed on SP 6 site of both legs and applied a strong vertical pressure for 10 seconds cycles (8 seconds of acupressure and 2 seconds of rest) for 60 times for a total of 10 minutes.

III. RESULTS

n=40

SI NO:	SAMPLE CHARACTERISTICS	FREQUENCY (f)		PERCENTAGE (%)	
		EXPERIMENTAL	CONTROL	EXPERIMENTAL	CONTROL
	Age in years				
	<20	0	0	0	0
	20-24	5	0	25	0
	25-29	10	1	50	5
	30-34	4	14	20	70
	>34	1	5	5	25
2.	Educational status				
	No formal schooling	3	5	15	25
	Primary schooling	6	8	30	40
	High school	6	2	30	10
	PUC	5	4	25	20
	Graduate/above	0	1	0	5
3.	Occupational status				
	House wife	12	16	60	80
	Self employee	4	1	20	5
	Private employee	4	2	20	10
	Government employee	0	0	0	0
	Others/professionals	0	1	0	5

Table 1: Distribution of sample according to the age in years, educational status and Occupational status

n=40

Table 2: Distribution of sample according to the family income, religion and parity

SI NO:	SAMPLE CHARACTERISTICS	FREQUENCY (f)		PERCENTAGE (%)	
		EXPERIMENTAL	CONTROL	EXPERIMENTAL	CONTROL
1	Family Income				
	<4001	11	8	55	40
	4001-6000	8	10	40	50
	6001-8000	1	2	5	10
	>8000	0	0	0	0
2	Religion				
	Hindu	11	14	55	70
	Muslim	9	6	45	30
	Christian	0	0	0	0
3	Parity				
	2-4	19	20	95	100
	>4	1	0	5	0
	Total	20	20	100	100

In the experimental group the highest percentage (50%) were in the group of 25-29 years, while the control group the highest percentage (49%) were in the age group of 30-34 years. The majority (30%) of the subjects have

undergone primary schooling and high school training in the experimental group, whereas in the control group 40% have undergone primary schooling and 60% of them were

housewives in the experimental group, and in the control group 80% were housewives.

Majority of the subjects (55%) earned <4001Rs in the experimental group and In the control group 50% earned between 4001-6000. Religion-wise dispersal of the subjects

revealed that in the experimental group majority (55%) of the subjects were Hindus and in the control group 70% were Hindus and in the experimental group majority (95%) of the mothers were in the parity level of 2-4 while in the control group (20) 100% was in the parity level of 2-4.

n=40

Pain level	Score range	Frequency (f)		Percentage (%)	
		Experimental	Control	Experimental	Control
No pain	0	0	0	0	0
Mild pain	1-3	0	0	0	0
Moderate pain	4-6	13	11	65	55
Severe pain	7-10	7	9	35	45
	Total	20	20	100	100

Table 3: Distribution of pretest pain scores of the subjects

The table 3 depicts the distribution of subjects according to the intensity of after pains, in which the majority of subjects (13) 65% in the experimental group had moderate pain and in the control group (11) 55% had moderate pain.

n=20

Pain Level	Score range	Pretest		Posttest									
				Immediately		30min		1hour		2hours		3hours	
		f	%	f	%	f	%	f	%	f	%	f	%
No pain	0	0	0	13	65	19	95	19	95	11	55	3	15
Mild pain	1-3	0	0	7	35	1	5	1	5	9	45	17	85
Moderate pain	4-6	13	65	0	0	0	0	0	0	0	0	0	0
Severe pain	7-10	7	35	0	0	0	0	0	0	0	0	0	0

Table 4: Frequency and percentage distribution of the pre-test and post-test scores of the experimental group on VASP

Table 4 showed that in the experimental group, majority (13) 65% of the subjects experienced moderate pain, (7) 35% experienced severe pain and none had mild or no pain during pretest, whereas immediately after SP-6 acupressure (13) 65% had no pain, (7) 35% reported mild

pain but none reported moderate or severe pain. Similarly 30minutes, 1 hour, 2 hours and 3 hours following acupressure there was a decline in the pain level experienced by the mothers.

n=20

SI NO.	PAIN SCORE	MEAN VALUE	S.D
1	Pretest	5.8500	1.4965
2	Posttest		
3	Immediately	.3500	.4894
4	30 minutes	.050	.2236
5	1 hour	.050	.2236
6	2 hours	.4500	.5104
7	3 hours	1.0500	.6048

Table 5: Mean differences in repeated measures of pain score in the experimental group before and after SP-6 acupressure

In the pretest the mean value and standard deviation of the experimental group were 5.8500 ± 1.4965 respectively, posttest done immediately showed $.3500 \pm .4894$, 30 minutes showed $.023 \pm .2236$ respectively, 1 hour following SP-6 acupressure showed $.050 \pm .2236$ correspondingly, 2

hours showed $.4500 \pm .5104$ values respectively, and 3 hours after the treatment it showed $1.0500 \pm .6048$ respectively which indicated that till 2 hours the pain was reduced and later it started raising.

n=20

Pain Level	Score range	Pretest		Posttest									
				Immediately		30min		1hour		2hours		3hours	
		f	%	f	%	f	%	f	%	f	%	f	%
No pain	0	0	0	0	0	0	0	0	0	0	0	0	0
Mild pain	1-3	0	0	0	0		0	0	0	0	0	1	5
Moderate pain	4-6	11	55	12	60	15	75	16	80	15	75	15	75
Severe pain	7-10	9	45	8	40	5	25	4	20	5	25	4	20

Table 6: Frequency and percentage distribution of the pre-test and post-test scores of the control group on VASP

As shown in the above table, in the control group majority of the subjects (55%) experienced moderate pain in the pre-test and there was no change in afterpains among the

group when the post test was conducted immediately, 30 minutes, 1 hour, 2 hours and 3 hours later without receiving the procedure.

SI NO.	GROUP VARIABLES	ANOVA	
		FREQUENCY RATIO	(P<0.05)
1.	Afterpains severity Before treatment		
2.	Immediately after treatment	19.40*	0.000
3.	30 min after treatment	13.23*	0.004
4.	1hour after treatment	13.35*	0.004
5.	2hours after treatment	9.05*	0.035
6.	3hours after treatment	5.89*	0.073

n=20

Table 7: Data presented in table-6 shows the differences in repeated measures of pain score before and after the SP-6 acupressure by using ANOVA method

*Significant

Table 7 revealed that when the severity of afterpains was analyzed at each time period using repeated measures of ANOVA, significant differences were observed immediately after applying acupressure (F=19.40,p=0.000), as well as 30 minutes(F=13.23,p=0.004), 1hour (F=13.35,p=0.004), and

2hours (F=9.05,p=0.035) following the experiment. When compared to the previous time periods, the difference detected 3 hours later did not demonstrate much of a meaningful difference (F=5.89, p=0.073).

Group variables	Mean± SD (Experimental group)	Mean± SD (Control group)	Mean difference	df	t value
Immediately after treatment	.3500± .4894	5.9000± 1.4105	5.55	38	15.575*
30min after treatment	.050± .2236	5.7500± 1.2927	5.70	38	13.794*
1hour after treatment	.050± .2236	5.5000± 1.2354	5.450	38	11.900*
2hours after treatment	.4500± .5104	5.3500± 1.3089	4.9	38	10.655*
3hours after treatment	1.0500± .6048	5.2500± 1.3717	4.2	38	9.555*

n=40

Table 8: Distribution of Independent sample t test of experimental & control group pain scores:

t (38) = 2.02

*Significant

Table 8 depicted that the independent t-test in the experimental and control groups immediately after treatment showed a t value of 15.575, p=.000). 30 minutes after treatment (t=13.794, p= .000), 1hour after treatment (t=11.900, p=.000), 2hours after treatment (t=10.655, p=.000), and 3hours following treatment (t=9.555, p=.000) value was greater than the table value (t_{tab}=2.02). This indicated that there was a significant difference between the control and experimental group on the reduction of after pains following SP-6 acupressure and not because of any extraneous variables.

There was no significant association between the perception of afterpains and selected demographic variables except for the income (χ^2 cal= 16.81) of the postnatal mother. When the association between perception of afterpains and physiological responses were analyzed it showed a significant association between the afterpains and heart rate (χ^2 cal=7.2498), blood pressure (χ^2 cal=10.354), diaphoresis (χ^2 cal=3.9678), and clenching of jaw and fists (χ^2 cal=4.1011). But there was no association between perception of afterpains and respiratory rate, cold extremities, guarding, drawing up of legs and facial grimace.

IV. CONCLUSION

The study concluded that acupressure to the SP-6 meridian can be an effective non invasive nursing intervention for alleviation of afterpains with effects lasting 2 hours post treatment. SP-6 acupressure is a simple set of non-invasive technique applied for 10minutes and can be integrated into the clinical practice as an inexpensive and easy-to-learn nursing intervention for women experiencing after pains. Complementary and alternative therapies offer an alternative to pharmacological management for afterpains.

V. NURSING IMPLICATIONS

- Nursing Implication
 - The finding of the study has implications in the field of nursing education, nursing practice, nursing administration, and nursing research.
- Recommendations
 - A similar study can be done by combining two or more acupressure meridian points on afterpains

- A comparative study can be conducted involving the pharmacological and nonpharmacological methods on afterpains
- A comparative study can be done to assess the effect of sp6 acupressure on afterpains among multiparous and primiparous women.

REFERENCES

- [1.]Hoffenaar PJ, van Balen F, Hermanns J. The impact of having a baby on the level and content of women's well-being. *Social Indicators Research*. 2010 Jun;97(2):279-95.
- [2.]Pillitteri A. *Maternal & Child Health Nursing, Care of the child bearing & child rearing family*. 3rd edition. Lippincott publishers; 1999.
- [3.]Betts D. Postnatal Acupressure. *Journal of Chinese medicine*.2005; 77: 5-10.
- [4.]Linton A.D. *Introduction to Medical Surgical Nursing*. 4th edition, Saunder's publishers; 2007,
- [5.]Lee MK, Chang SB, Kang DH. Effects of SP6 acupressure on labor pain and length of delivery time in women during labor. *Journal of Alternative & Complementary Medicine*. 2004 Dec 1;10(6):959-65.
- [6.]Jun EM, Chang S, Kang DH, Kim S. Effect of acupressure on dysmenorrheal and skin temperature changes in college students. *Int J Nurs Stud* 2007; 44: 973-81.
- [7.]Konar H. *DC Dutta's Textbook of obstetrics*. 6th edition. Medical Ltd; 2004.
- [8.]Burns Nancy, Susan KG. *Understanding nursing research, building evidence based practice*. 4th edition. Elsevier publishers, 2007.