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A PILOT STUDY ON EFFECTIVENESS OF INTERVENTIONAL PACKAGE ON PAIN PERCEPTION AND LEVEL OF SATISFACTION AMONG PRIMIPARA MOTHERS AT PUBLIC HEALTH CENTRE, CHENNAI.

Nursing

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ABSTRACT

A pilot study was conducted to find out the effectiveness of interventional package on pain perception and level of satisfaction among 28 primipara mothers (7 in each group, Group 1 – Lavender oil massage, Group 2 – Acupressure on LI4, Group 3 – Deep breathing exercise, Group 4 – no intervention) selected by simple random sampling technique at Public Health Centre, Chennai. Posttest only design adopted. Interview and questionnaire method followed to collect data regarding socio demographic variables, 0-10 combined numerical categorical pain scale was used to assess the pain. Intervention group of mothers received each intervention four times for four consecutive uterine contractions. Level of satisfaction was assessed 4 to 8 hours after delivery by using rating scale. The result showed severity of pain in group 1 was lower than other three groups at ($p<0.004$) and level of satisfaction was high in both group 1 and group 2 at ($p<0.376$) when compared with group 3 and group 4 at ($p<0.000$) correlation has not shown significant relationship between pain perception and level of satisfaction. The study concluded that lavender oil massage and acupressure on LI4 were effective non-pharmacological methods to relieve pain during labor.

KEYWORDS

Lavender oil massage, acupressure, deep breathing exercise, labor pain, satisfaction

Introduction

Labor is a phenomenon that exists in many creatures and unlike other acute and chronic pain, the pain of labor does not correlate with any disease or pathology. Labor pain has been reported as the severest pain in humans and the known complications of pain are anxiety and tension, prolonged labor, abnormal fetal heart rate, increase in incidence of cesarean delivery, low Apgar score of neonate and even the long term mental disorder. Pain relief in labor is very important in obstetric care, however there is no standard technique for the relief of pain during labor without side effects (Fatemeh Dabiri, Arefeh Shahi 2014). There are only two options for the relief of labor pain – pharmacological method and nonpharmacological methods. Pharmacological methods have adverse side effects for the mother and fetus, whereas nonpharmacological methods are free from side effects. Complementary and alternative medicines have been used to decrease labor pain for many years.

The existent need to produce a balance between reliving the labor pains and a safe labor progress with low economic cost, forces many researchers to identify the effect of nonpharmacological methods on the women in labor and their babies (Gennaro S 2007). Nonpharmacological methods of pain relief in labor includes childbirth preparation, relaxation technique, herbal medicine, aromatherapy, positioning and laboring woman support, in addition to acupuncture, acupressure and massage therapy by Tournaire M and Yonneau AT (2007).

Shin B and Lee M.S described aromatherapy is the medicinal or therapeutic use of essential oils absorbed through the skin or olfactory system. Essential oils which are derived from plants, are used to treat illness as well as to enhance physical and psychological well-being. Aromatherapy is most commonly applied topically, or through inhalation. While applying topically, the oil is usually mixed with carrier oil and used for massage. Sahar Mansour Lamadah, Ibtesam Nomani (2016) conducted a study on effect of aromatherapy massage using lavender oil on the level of pain and anxiety during labor among primigravida women. Purposive sampling method adopted and 60 primigravida women were participated. Visual analogue pain intensity scale was used to assess pain level and Spielberger state-trait used to find out anxiety status. The study concluded that aromatherapy massage with lavender oil can reduce pain and anxiety during labor.

The Cochrane Central Register of Controlled Trails (CENTRAL) 2017 published the RCT (Randomized Controlled Trail) on effect of LI4 acupressure on labor pain intensity and duration of labor by the authors Dabiri F and Shahi A. 149 parturient mother with singleton pregnancies in the active phase of spontaneous labor, without any medical and obstetrical problems were enrolled in the single-blinded, randomized, clinical trail. The study concluded that acupressure is an effective, non-invasive, and easily applicable technique to reduce labor pain.

Sinhgad (2011) conducted a quasi-experimental study among primigravida mothers to find out the effectiveness of patterned breathing technique in reduction of pain during first stage of labor in Pune. 60 primigravida mothers (30 in control group and 30 in experimental group) in first stage of labor were selected by non-probability purposive sampling technique. Numeric pain intensity scale was used to assess the pain at the interval of every one hour and 5 observations were recorded. The study concluded that mothers received patterned breathing technique were significantly reduced pain level than the women in control group.

Nonpharmacological methods of pain relief do not require equipment and machinery, it require efficient childbirth educator and the willingness to practice certain techniques on the part of pregnant women. In the present pilot study, the researcher wants to find out the effectiveness of interventional package on labor pain and level of satisfaction among primipara mothers. The interventional package includes back massage using lavender oil, acupressure on LI4 and deep breathing exercises.

Materials and Methods

Quantitative research approach is followed using true experimental research design (posttest only design). Using Simple random sampling technique 7 primipara mothers were randomly assigned to each group. Group 1 received back massage using lavender oil, group 2 received acupressure on LI4 point, group 3 received deep breathing exercise

and group 4 received no pharmacological and nonpharmacological measures of pain relief. Ethical clearance was obtained from the ethical committee of Public Health Centre, West Mambalam, Chennai. Data was collected from February 2015 to March 2015. Inclusion criteria comprised only primipara mothers who are in first stage of labor with cervical dilatation between 3 and 5 cm, singleton pregnancy with cephalic presentation and gestational age between 37 and 42 weeks. Exclusion criteria included mothers receiving any analgesics 3 hours before and during intervention, history of infertility, third trimester bleeding, intra uterine growth retardation. After obtaining written consent samples were randomly assigned to each group. Data was collected in the form of short- questionnaire on socio demographic variables such as age, education, work pattern, type of family, dietary pattern, monthly income, religion, area of living, height, weight, weeks of gestation, cervical dilatation and fetal heart rate, administered the intervention to experimental group. Post test was done to collect data on pain perception using 0-10 combined numerical categorical pain scale and 4 to 6 hours after the childbirth rating scale was used to assess level of satisfaction.

Results

Socio demographic data of subjects: Table 1 depicts the socio demographic variables of primipara mothers in each group.

Demographic Variables	Group I		Group II		Group III		Group IV	
	No.	%	No.	%	No.	%	No.	%
Age of the women								
18 - 21 years	3	42.86	3	42.86	3	42.86	2	28.57
22 - 25 years	3	42.86	4	57.14	3	42.86	2	28.57
26 - 30 years	1	14.29	0	0.00	1	14.29	3	42.86
Educational status								
No formal education	0	0.00	0	0.00	0	0.00	0	0.00
Primary / Secondary	0	0.00	0	0.00	0	0.00	0	0.00
Higher secondary	3	42.86	4	57.14	4	57.14	5	71.43
Graduate & above	4	57.14	3	42.86	3	42.86	2	28.57
Work pattern								
Sedentary	4	57.14	2	28.57	2	28.57	3	42.86
Moderate	3	42.86	5	71.43	5	71.43	4	57.14
Heavy	0	0.00	0	0.00	0	0.00	0	0.00
Type of family								
Nuclear family	2	28.57	4	57.14	3	42.86	1	14.29
Joint family	5	71.43	3	42.86	4	57.14	6	85.71
Extended family	0	0.00	0	0.00	0	0.00	0	0.00
Dietary pattern								
Vegetarian	1	14.29	1	14.29	0	0.00	2	28.57
Non-vegetarian	6	85.71	6	85.71	7	100.00	5	71.43
Monthly income								
<=Rs.10,000	0	0.00	0	0.00	0	0.00	0	0.00
Rs.10,001 to Rs.20,000	0	0.00	0	0.00	0	0.00	0	0.00
Rs.20,001 to Rs.30,000	4	57.14	5	71.43	3	42.86	3	42.86
Demographic Variables	**Group I**		**Group II**		**Group III**		**Group IV**	
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
>=Rs.30,001	3	42.86	2	28.57	4	57.14	4	57.14
Religion								
Hindu	4	57.14	5	71.43	4	57.14	1	14.29
Christian	3	42.86	2	28.57	3	42.86	5	71.43
Muslim	0	0.00	0	0.00	0	0.00	1	14.29
Others	0	0.00	0	0.00	0	0.00	0	0.00
Area of living								
Urban	4	57.14	5	71.43	4	57.14	4	57.14
Rural	0	0.00	1	14.29	1	14.29	1	14.29
Semi urban	3	42.86	1	14.29	2	28.57	2	28.57
Height of the mother								
141 -150 cm	1	14.29	3	42.86	0	0.00	0	0.00
151 -60 cm	4	57.14	3	42.86	6	85.71	5	71.43
161 - 170 cm	2	28.57	1	14.29	1	14.29	2	28.57
171 - 180 cm	0	0.00	0	0.00	0	0.00	0	0.00
Weight of the mother								
40 - 50 Kg	0	0.00	0	0.00	0	0.00	0	0.00
51 -60 Kg	1	14.29	0	0.00	0	0.00	1	14.29
61 - 70 Kg	5	71.43	6	85.71	4	57.14	4	57.14
71 Kg & above	1	14.29	1	14.29	3	42.86	2	28.57
Weeks of gestation								
37 - 39 weeks	7	100.00	3	42.86	4	57.14	4	57.14
40 - 42 weeks	0	0.00	4	57.14	3	42.86	3	42.86
Cervical dilatation								
Demographic Variables	**Group I**		**Group II**		**Group III**		**Group IV**	
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
3 cms	3	42.86	2	28.57	3	42.86	3	42.86
4 cms	2	28.57	4	57.14	3	42.86	4	57.14
5 cms	2	28.57	1	14.29	1	14.29	0	0.00
Fetal heart rate								
120 - 130 beats/minute	0	0.00	0	0.00	0	0.00	0	0.00
131 - 140 beats/minute	2	28.57	4	57.14	5	71.43	3	42.86
141 - 160 beats/minute	5	71.43	3	42.86	2	28.57	4	57.14

Effect of interventional package on pain perception: Table 2 shows the comparison of posttest level of pain perception between four groups.

Pain Perception	Mean	S.D	Paired 't' Value
Group I	4.75	0.58	**t = 3.740 p = 0.004, S****
Group II	5.68	0.31	
Group I	4.75	0.58	**t = 9.721 p = 0.000, S*****

Group III	7.00	0.20	
Group I	4.75	0.58	**t = 12.409 p = 0.000, S*** **
Group IV	7.68	0.24	
Group II	5.68	0.31	**t = 9.348 p = 0.000, S*** **
Group III	7.00	0.20	
Group II	5.68	0.31	**t = 13.451 p = 0.000, S*** **
Group IV	7.68	0.24	
Group III	7.00	0.20	**t = 5.729 p = 0.000, S*** **
Group IV	7.68	0.24	

***p<0.001, **p<0.01, S – Significant

Table 2 shows that back massage using lavender oil (Group 1) has significant reduction in pain level than mothers received acupressure on LI4 (Group 2) at p<0.004.

Level of satisfaction among primipara mothers: Table 3 reveals level of satisfaction among primipara mothers between the groups.

Satisfaction	Mean	S.D	Paired 't' Value
Group I	88.57	1.81	**t = -0.922 p = 0.376, N.S**
Group II	89.57	2.22	
Group I	88.57	1.81	**t = 9.874 p = 0.000, S*** **
Group III	79.28	1.70	
Group I	88.57	1.81	**t = 42.287 p = 0.000, S*** **
Group IV	45.57	1.99	
Group II	89.57	2.22	**t = 9.708 p = 0.000, S*** **
Group III	79.28	1.70	
Group II	89.57	2.22	**t = 39.011 p = 0.000, S*** **
Group IV	45.57	1.99	
Group III	79.28	1.70	**t = 34.064 p = 0.000, S*** **
Group IV	45.57	1.99	

***p<0.001, S – Significant, N.S – Not Significant

Table 3 shows that mother in group 1 and group 2 were equally satisfied and mothers in group 3 also satisfied than the no intervention group.

Correlation between pain and level of satisfaction: Table 4 shows the correlation between pain and level of satisfaction among primipara mothers between the groups.

Group	Variables	Mean	S.D	'r' Value
Group I	Pain Perception	4.75	0.58	**r = 0.438 p = 0.326, N.S**
	Satisfaction	89.57	1.81	
Group II	Pain Perception	5.68	0.31	**r = 0.367 p = 0.418, N.S**
	Satisfaction	89.57	2.22	
Group III	Pain Perception	7.00	0.20	**r = 0.240 p = 0.605, N.S**
	Satisfaction	79.28	1.70	
Group IV	Pain Perception	7.68	0.24	**r = -0.076 p = 0.872, N.S**
	Satisfaction	45.57	1.99	

N.S - Not Significant

Table 4 depicts the Pearson correlation coefficient 'r' value indicated negative only between group 4 and other 3 groups showed on positive and weakest correlation.

Association between pain perception and socio demographic variables: Chi – square test was used to compute the association between pain perception and socio demographic variables. Based on the analysis it was evident that there was no statistically significant association between pain perception and socio demographic variables. Association between level of satisfaction and socio demographic variables also showed no significance.

Discussion

The present study intended to assess the effectiveness of interventional package on pain perception and level of satisfaction among primipara mothers. The findings showed that lavender oil massage and acupressure on LI4 were effective in reducing pain perception. These findings were supported based on the study conducted by Lee, Mi Kyoung. Hur, Myung Haeng (2011) to assess the effect of spouses' aromatherapy massage on labor pain and anxiety during labor showed significant at p<0.01.

Conclusion

According to the results of present study it is concluded that lavender oil massage and acupressure on LI4 are effective, safe and economic non-pharmacological method of pain relief among primipara mothers and it also improves the level of satisfaction on childbirth.

Recommendations

- All the pregnant women should be informed about labor pain and the pain assessment process during antenatal follow-ups and informed about various nonpharmacological pain relief measures during labor.
- Similar studies be performed with larger samples and other aromatherapy, various acupressure points, which could diminish pain.

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