TRANSCUTANEOUS ELECTRIC NERVE STIMULATIONS (TENS) ON REDUCTION OF LABOR PAIN DURING ACTIVE STAGE OF LABOR.

***Kala Kishore, M. Sc (N), PGDHM, PGDEAS, (PhD),*Prof. Dr. S. Rajina Rani M. Sc (N), PhD, *Kishore Jeba Singh MPT,MSW,PGDHM**

ABSTRACT

Introduction:

"Child birth, while primary a joyful event also exposes the mother to one of the Servest forms of pain". Labor associated with human child birth is a painful experience irrespective of social and ethnic backgrounds. TENS is natural and its sole use will ensure a drug-free labor. The objective of the study is to assess the effectiveness of transcutaneous electric nerve stimulation on reductive of labor pain during the active phase of labor pain among prim gravid mothers in selected hospitals, Kanniyakumari District. **Methods:** The quasi experimental, Post test only control group design was used for this study. The samples were selected by convenient sampling. The samples for the study were 60 primi gravid mothers in the active phase of labor. The mothers were randomly assigned for experimental group and the control group. For the experimental group electrodes were placed amplitude was allowed to use according to their needs of the mothers. For the control group electrodes were placed and amplitude was not allowed to use by the mother and intervention was evaluated by post test, within 24 hours after the delivery. **Results:** The pain score mean difference of two groups is 4.1. The difference is statistically highly significant (t= 32.1 and p=0.000). That means the experimental group is having lesser pain than the control group. Thus the reduction of pain in the experimental group is due to the intervention of TENS (t-32.1 and p<0.000).

INTRODUCTION

"I will greatly increase your pangs in child bearing in pain you shall bring forth children, yet your desire shall be for your husband".

Genesis 3:16

"Child birth, while primary a joyful event, also exposes the mother to one of the severest forms of pain" reported (Melzack 1984, Niven & Gijsbers 1984).Labour associated with human child birth is a painful experience, irrespective of social and ethnic backgrounds (Weiscnberg & Caspi 1989, chamberlain 1993).

Child bearing is a natural physiological event. However that creative process is a challenge that places the body at risk (Zelling E, 1996). The pregnant women's body undergoes tremendous hormonal and physical changes during the 9 months prior to childbirth. In women the increase pain threshold begin approximately 18 days before the onset of labor and further increase during labor (Shelly Rowlands, 1998).

Giving birth is a painful process. This applies to all social and ethnic groups and has probably been so, since mankind walked upright. It is very difficult to measure pain, which is recognized via the signals carried through the nervous system and the woman's intellectual response to the to the stimulus (Margaret Polden and Jill mantle).

TENS is non- invasive. TENS is completely safe and has no adverse side effects on the user and her baby. TENS is very easy to use and the user has it entirely under her control throughout the labor. TENS is a well-researched and recognized essential aid for pain relief during childbirth. TENS machines are effective in easing the labour pains and cramps.

Significance and need for the study:-

Many of the studies reported that, administration of sedatives, analgesic is the commonest method used to relieve pain in women during labour. This causes less bearing down effect on the mother and increased respiratory distress in the neonates. Above all the mother is not able to experience the thrill of giving birth to a baby. This motivated the investigator to find out the effectiveness of using non pharmacological and non-invasive measures for pain relief during labour. Therefore this study aims at analyzing the effect of TENS on reduction of pain in subjects with active stage of labour.

Statement of the problem

A study to evaluate the effectiveness of Transcutaneous electric nerve stimulation on reduction of labour pain during active phase of labour among primgravid mothers in selected Hospital in Kanyakumari district.

Objectives

1. To compare the pain level reduction among the mothers not using TENS (control group) and the mothers using TENS (experimental group).
2. To find the association between the demographic variables like age, education religion and antenatal visit with their pain score.

Hypothesis

There is a significant difference in reduction of labour pain in the experimental group and control group after the intervention of TENS.

Conceptual frame work

The conceptual frame work based on Callista Roy's adaptation model (1970).

Materials and Methods:

Research Design

Quasi experimental-Post test only control group design.

Setting of the Study

The study was conducted in the maternity ward of C.S.I Kanniyakumari Medical Mission Hospital, Neyyoor.

Population:

The population in this study comprised of all primigravid mothers, who had completed 37 weeks of gestation and active phase of labour admitted in maternity ward.

Sample:

All the primi mothers, who had admitted in the C.S.I Kanniyakumari Medical Mission Hospital, Neyyoor, with active phase of labour pain.

Sample size:

Sixty primi mothers were taken as samples. 30 in the experimental group and 30 in the control group.

Sampling technique:

Convenient sampling technique was used.

Inclusion criteria:

- Primigravid mothers who had completed 37 weeks of gestation in the active phase of labour.
- Primigravid mothers with Cervical dilatation 3-5 cms as per vaginal examination findings.

Exclusion Criteria:

- Multiparous & preterm labour women.
- Mothers who were not cooperative.
- Mothers with electronic fetal monitoring (NST)

Data collection instrument

. The tool consisted of 4 sections.

Section I- **Base line Performa**

Section II- **Demographic data of the mothers**

Section III- **Numeric pain Assessment Scale**

Section IV- **Transcutaneous Electric Nerve Stimulator**

Data collection procedure

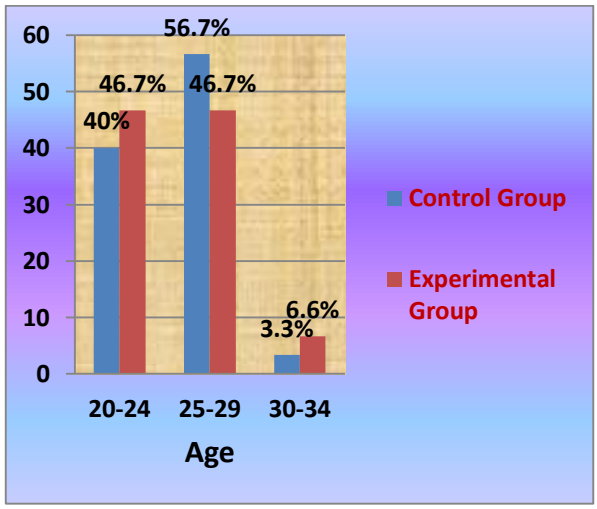
The data was collected for a period of 6 weeks from all the primi mothers. Pre teaching was given to the mothers during their antenatal visit in the later period of the last trimester. Sixty patients were selected conveniently for TENS and assigned randomly for both without differentiating the experimental group and control group. The cervical dilation was checked from the vaginal findings. Then TENS electrodes were placed on either sides, of the spine at the level of the tenth thoracic and first Lumbar Spinal segments in both the control and experimental group. This provided pain relief in the earlier stages of labor. TENS was applied for one hour in the experimental group and the mothers were asked to change the stimulation (that is amplitude) as per the need. In the control group electrodes were placed, but the mother was not asked to change the stimulation (that is amplitude).

After the completion of an hour, the visual analogue numeric pain scale was explained and given to the respondents and were asked to mark the tool. The data was collected within the stipulated period of time.

Data Analysis and Interpretation

.SECTION – I Demographic data of the mother:

Fig.1 Age wise percentage distribution of the mothers among the control and the experimental groups

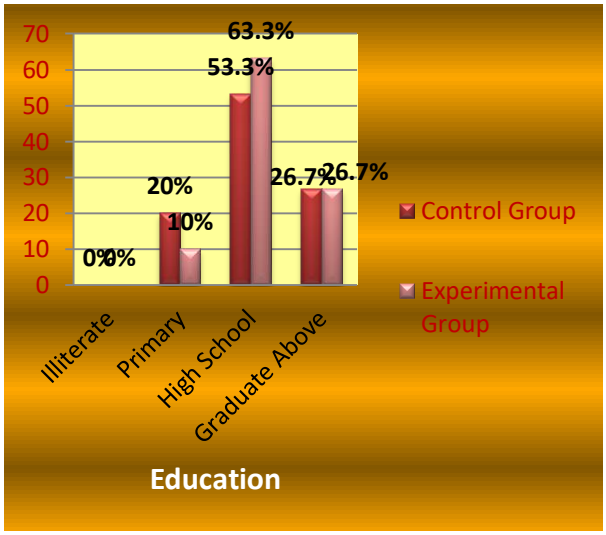


.

Fig 1 shows that the majority of the subjects out of 30, 17 (56.7%) were between 25 and 29 years, 12 (40%) were between 20 and 24 and 1 out of 30 (3.3%) were between 30 and 34 years in control group.

Similarly the age group of the subject 14 out of 30 (46.7%) were between 25 and 29 years, 14 out of 30 (46.7%) were between 20 and 24 years and 2 out of 30 (6.6%) were between 30 and 34 years in experimental group.

Fig.2. Percentage distribution of Educational Status of the mothers among the control and the experimental groups



The data is shown about education level of the subject that the majority of the subjects 16 out of 30 (53.3%) were high school, 8 out of 30 (26.7%) were Graduate and above, 6 out of 30 (20%) were primary.

Similarly the majority of the subjects 19 out of 30 (63.6%) were high school, 8 out of 30(26.6%) were Graduate and above, 3 out of 30 (10%) were primary, 0 out of 30 (0%) were Illiterate in Experimental Group.

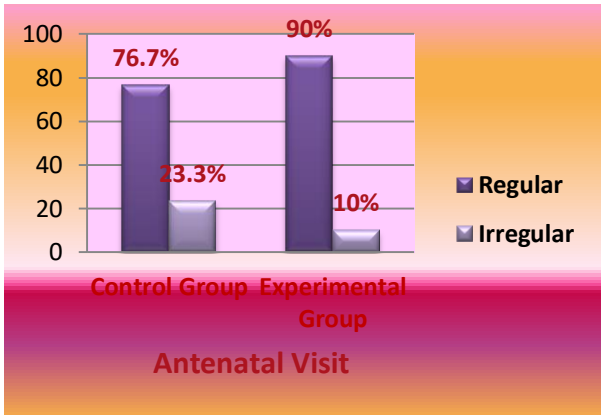
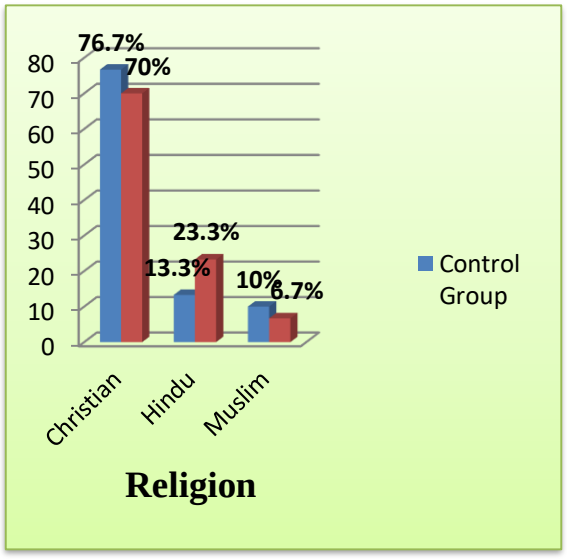


Fig 4. Religion wise Percentage distribution of the mothers in the control and the experimental groups



In religion, the data is shown that the majority of 23 (76.7%) were Christian, 4 (13.3%) were Hindus, 3 (10%) were Muslims in control group. The data illustrates that the majority of the subject 21 out of 30 (70%) were Christians, 7 out of 30 (23.3%) were Hindus, 2 out of 30 (6.7%) were Muslim in experimental group

Fig5. Mothers distributed according to their Antenatal visits in percentages among the control and the experimental groups

The data portrays that the majority of the subject, 23 out of 30 (76.7%) were regular antenatal visit, 7 out of 30 (23.3%) were irregular antenatal visit in control group. It also denotes that the majority of the subject 27 out of 30 (90%) were regular antenatal visit, 3 out of 30 (10%) were between regular in irregular antenatal visit in experimental group.

SECTION – II

Comparison of the pain score of the experimental and the control group.

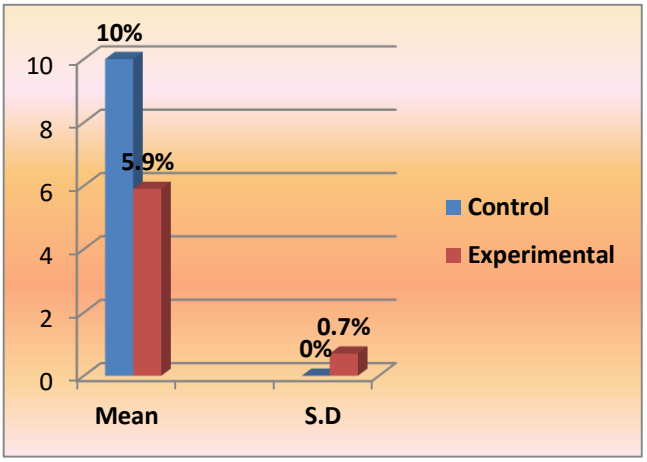


Fig 6 The mean and Standard deviation of the pain score in the control and the experimental Groups

The above comparison vividly shows that the pain score of mean difference of two group is 4.1. The difference is statistically highly significant (t=32.1 and p=0.000). That means the experimental group is having lesser pain than the control group and reduction of pain in the experimental group is due to the intervention of TENS (t=32.1 and p<0.000).

The calculated T=32, 1 is greater than $t_{0.05}^{df\ 58} = 2.000$

SECTION –III

Association between the Demographic variable and the post test pain score of experimental group.

There is no significant association between the age of the experimental group and with the pain score of them. The calculated χ^2 value is less than the respective table value. The P value is P>0.05.

There is no significant association between the pain score and the Educational level of the Experimental Group mothers since the χ^2 value is 0.1172 (P>0.05)

There is no association between the religion of the experimental group and their pain score (χ^2 =0.0081 and p>0.05)

DISCUSSION

The present study was aimed to evaluate the effectiveness of TENS in reducing pain among prim gravid mothers during labor.

The findings of the study were discussed here on the basis of the objectives.

In the present study the majority of the age group was between 25 and 29 both control and experimental group.

This study denotes that the education level of the mothers were, above high school level in both control and experimental group. As far as religion is concerned Christians are denominated in both groups.

The first objective of this study was

- To assess the effectiveness of Transcutaneous Electric Nerve Stimulation on reduction of labor pain during active stage of labor among primi gravid mothers in CSI kanniyakumari Medical Mission Hospital Neyyoor.
- To compare the pain level reduction among the mothers not using TENS (control group) and the mothers using TENS (experimental group).

Based on this objective to assess the effectiveness of the TENS the investigator have compared the pain score of experimental group and control group. The pain score mean difference of two groups is 4.1. The difference is statistically highly significant (t=32.1 and p = 0.000). That means the experimental group is having lesser pain than the control group. It shows that TENS influences on reduction of pain. (t=32.1 and p<0.000)

The second objective of the study was

- To find the association between the demographic variables like age, education religion and antenatal visit of the Experimental groups with their pain score.

Based on this 2nd objective of the present study shows that there was no significant association

between pain score and none of the demographic variables of experimental group.

Conclusion:

In this present study, the experimental group mothers were experienced lesser pain than the control group. Thus the reduction of pain in the experimental group was due to the intervention of TENS ($t = 32.1$ and $p<0.000$). Therefore TENS is very effective form of non-pharmacological intervention to relieve pain during labor.

REFERENCE

- Ann Em. (1998), the effect of pain and its management on mother and fetus. Clinical obstetrics and gynecology: 12(3):423
- Baker.A, Ferguson. SA, (2001), "Perceptions of labour pain by mothers and their attending midwives "Journal of advance nursing, 35(2), 171-179.
- Bonica, John J (1990). The management pain, 2nd ed. Philadelphia: lea and Feaiser.
- Brayanton.J, etal: (1994), Women's perceptions of nursing support during labour:Journal of American Nursing, 23(8); 638-643
- Brown ST, Pocylas C, Flood LP. (2001), Women's evaluation of intrapartum non-pharmacological pain relief methods used during labour, Journal of Prenatal Education: 10 (3): 1-8
- Best JW.Khan JV. (1995), Research in education 3rd, New Delhi, Prentce Hall of India Private limited.
- Basavanthappa BT, (1998), Nursing Research, 1st ed, Jaypee Brothers.
- Bonica, J.J, (1975), Clinics in obstetrics and Gynecology, vol.2, no.3, W.B saunders company Ltd.
- Best JW, Khan JV. (1995), Research in Education, 3rd ed, New Delhi. Prentice Hall of India Private Limited.
- Tischendrof. D, (1986), TENS in obstetrics Zentralbl Gynecology, 108 (8); 486-93 Article in German.
- Treece EW, Treece JW. (1998), Elements of research in Nursing. 3rd ed.St.Louis. The CV Mosby Company.
- Vander Ploeg, et al. (1996), TENS during the first stage of labour; a randomized clinical trial Pain, November 1996; volume 68; 75-78
- Vander linden, W:Pittalls, (1980), Randomized surgical trial, surgery 87:258.
- Williams;(1994), Text Book of Therapeutic modalities for Allied health profession; 2nd edition page no 146.
- Zelling E. (1996), Nursing support in laboring women, Journal of obstetric and Neonatal Nursing. 425.