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# A study to assess the effectiveness of olive oil back massage on labour pain intensity among primigravida women during first stage of labour admitted in maternity hospital SKIMS, Soura Srinagar, Kashmir

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### Abstract
The study was conducted with the aim to assess the effectiveness of Olive Oil Back Massage on Labour Pain intensity among Primigravida Women during First Stage of Labour Admitted in Maternity Hospital Skims, Soura Srinagar, Kashmir.″ The unique aspect of childbirth is the association of physiologic process with pain, discomfort and pleasure. Intervention for pain and discomfort management during labour and childbirth is a major part of modern obstetric care. Manual healing methods used today during delivery include touch and massage therapy. Painful uterine contractions can be treated by applications of massage to woman's back, hips, thighs and sacrum. By massage therapy, pharmacological management during the first stage of labour can be minimized. Thus negative effects on fetus and mother can be reduced.

Quantitative research approach with Quasi Experimental, Time Series Non Equivalent control group design [Pre-test Post-test Control group design] was considered appropriate to evaluate the effectiveness of olive oil back massage on labour pain intensity score during the first stage of labour among primigravida women. Non probability purposive sampling technique was used to collect data from 60 subjects who fulfilled the inclusion criteria and were assigned to control group ($n_1$=30) and experimental group ($n_2$=30). Data was collected using structured interview schedule for assessing demographic variables, Labour assessment preforma and Abbey pain scale. Multiple institutions of treatment (Olive oil back massage) was given to experimental group.

The mean with S.D of pre-test labour pain assessment of study subjects was almost same i.e (14.20±1.584 and 14.23±1.569), where as mean with S.D of post-test I labour pain assessment was (14.47±1.358) in control group and (12.10±1.626) in experimental group with (p=0.0000) and mean with S.D of post-test II labour pain assessment was (14.77±1.073) in control group and (9.53±1.961) in Experimental group with (p=0.0000).The results also revealed that there was no significant association between pre-test intensity of labour pain score and selected demographic variables such as age, education, and type of family at 0.05 level of significance.

The findings of the study concluded that olive oil back massage is effective in reducing labour pain intensity among primigravida women during first stage of labour.

**Keywords:** Primigravida women, first stage of labour, back massage, olive oil, effectiveness

## Introduction
Pregnancy is a special event. The labour and birth process is an exciting situation to the women and her family. The time of labour and birth, though short in comparison with the length of pregnancy, is the most dramatic and significant period of pregnancy for the expecting woman [1]. Birth is a universal human experience, yet the birth experience can be different across various cultures. The words 'labour' and 'childbirth' often conjure up the image of pain, fear and anxiety. This leads to commonly-held limiting beliefs and expectations that will be a painful, distressing experience which results in many women entering labour in a state of heightened anxiety [2].

Labour is described as the process by which the fetus, placenta and membranes are expelled through the birth canal).″ Normal labour occurs at term and is spontaneous in onset with the fetus presenting by the vertex. The process is completed within 18 hours and no complications arise (Cassid, 1999). The normal labour process involves generally the relation between three P's such as power of contractions, passage and the passenger [3].

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The first thought that comes to mind of an expecting woman regarding her delivery is the pain of labour. The pain of labor is the central and universal part of woman's experience of child birth. Labour is a normal physiological process, which actually should be an occasion for rejoicing, but it also accompanies with it lots of pain, agony, and discomfort and certain risks. Thus although being a joyful and empowering experience it can end with negative and tragic results, leaving the woman filled with fear and anxiety for future birth [4].

The causes of labour-pain can be either physical or psychological. Physical factors include uterine contractions, cervical dilatations, cervical effacements etc. Psychological factors include fear and anxiety, previous experiences, inadequate support, inadequate knowledge. Pain perceived during labour may be different for each woman [5]. A scientific definition of the pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage. In the labour during dilatation (first stage) visceral pain is predominated due to mechanical distension of the cervix and of the lower part of uterus. The stimuli are transmitted to the spinal cord at the level of the 10th thoracic to first lumber root. Uterine contractions may be felt as back pain because the nerves that supply the uterus also supply the skin on the lumber back or lumbo sacral area [6] Pain of uterine contractions is distributed along the cutaneous nerve distribution of $T_{10}$ to $L_1$. Pain of cervical dilatation and stretching is referred to the back through the sacral plexus [7].

The management of labour pain is a major goal of Intrapartum care. There are two general approaches: pharmacologic and non- pharmacologic. Pharmacologic approaches are directed at elimination of the physical sensation of labour-pain, whereas non- pharmacologic approaches are largely directed towards prevention of suffering [8].

Midwives are with the mother during the entire process of labour and hence they are at a position to provide relief to the woman during labour pain. If nurse understands the nature and effects of pain during the labour processes, they will be better prepared to provide supportive care physical comfort includes offering a variety of non-pharmacological interventions. Different alternative and contemporary modalities used are: continuous labour support, hydrotherapy, intra dermal water blocks, positioning and movement, touch and massage, breathing techniques, music, birth balls, acupressure, hot & cold application etc. [9]

During 1930 and 1940s influence of massage decreased as a result of medical advancements of the time but Since 1970s, the influence grew once again because of public and medical acceptance of the value of massage and increased consumer usage of massage therapy. In 1997, United States health survey showed that there was an estimated 14 million visits to massage therapist by women. The American Massage Therapy noted that 47% of the people polled in a consumer survey, used massage therapy to relieve and manage their labour pain and 91% of the people said massage therapy was effective in reducing pain [10].

**Need for the study**
There is a growing demand for more natural, normal childbirth and non-pharmacological methods for pain -relief measures during childbirth. Low risk non-pharmacological pain-relief measures are increasingly acceptable to both professionals and expecting women [11].

The management of labour-pain is one of the main goals of the maternity care. The goal of eliminating labour-pain not only requires pain medication but also requires other techniques/modalities to preserve health and maintain coping strategies. This requires highly skilled personnel to control any undesirable side-effects [12].

A systematic review on non-pharmacological approaches to relieve labour pain and sufferings were conducted in University of Mexico where randomized trials were conducted and thirteen methods were found to be effective. These included continuous labour support, hydrotherapy, intra-dermal water blocks, positioning and movement, touch and massage, breathing techniques, music, birth balls, acupressure, hot & cold application, yoga, meditation, walking, taking a bath and audio analgesia were taken [13].

Among the non-pharmacological methods of pain relief massage is more effective technique for management of labour pain. Massage is an ancient method to reduce labour pain. It stimulates body to release endorphins, which are natural pain killing substances and stimulates for the production of oxytocin, decreases stress hormones and neurological excitability [14]. Back massage with Olive oil has been found very effective for reducing labor pain intensity. Olive oil has pain-killing properties and acts as anti-inflammatory drug. It is known to possess soothing and tranquilizing properties [15].

During the clinical experience in the labour room the investigator noticed that the women in labour are very anxious and fearful. Due to apprehension, they are not able to cope with the pain during labour. The women who were admitted in the labour room during the first stage of labour were screaming and shouting and requesting for relief measures and other mode of delivery in order to reduce the pain. Personal enquiry reveals that there is a strong need of some measures which really relieve mother's pain and thus reduces maternal and fetal complications.

As it is evident from the studies that pain during labour is controlled by Olive oil massage, the investigator decided to take up a study to assess the effectiveness of olive oil back massage on labour pain intensity during first stage of labour among primigravida women so that pain intensity could be controlled and women may feel comfort during labour. Thus by the support of olive oil massage therapy the investigator found that anxiety and fear regarding labour could be reduced significantly as revealed in many studies.

**Statement of the problem**
"A study to assess the effectiveness of Olive oil back massage on labour pain intensity among primigravida women during first stage of labour admitted in Maternity Hospital SKIMS, Soura Srinagar, Kashmir."

**Objectives**
1. To assess the pre-test intensity of labour pain score among primigravida women during first stage of labour in control and experimental group before application of Olive oil back massage in experimental group.
2. To assess the post-test intensity of labour pain score among primigravida women during first stage of labour in control and experimental group after application of Olive oil back massage in experimental group.

3. To determine the effectiveness of Olive oil back massage by comparing pre-test and post-test intensity of labour pain scores of primigravida women during first stage of labour between control and experimental group.
4. To associate the pre-test intensity of labour pain score of primigravida women during first stage of labour with their selected demographic variables i.e age, education and type of family.

**Hypothesis**
**H₁:** There is significant decrease in the intensity of labour pain score of primigravida women during first stage of labour in experimental group as compared to control group after application of olive oil back maasage in experimental group at 0.05 level of significance.

**H₂:** There is significant association of pre-test intensity of labour pain score of primigravida women during first stage of labour with their selected demographic variables *i.e*, age, education and type of family at 0.05 level of significance.

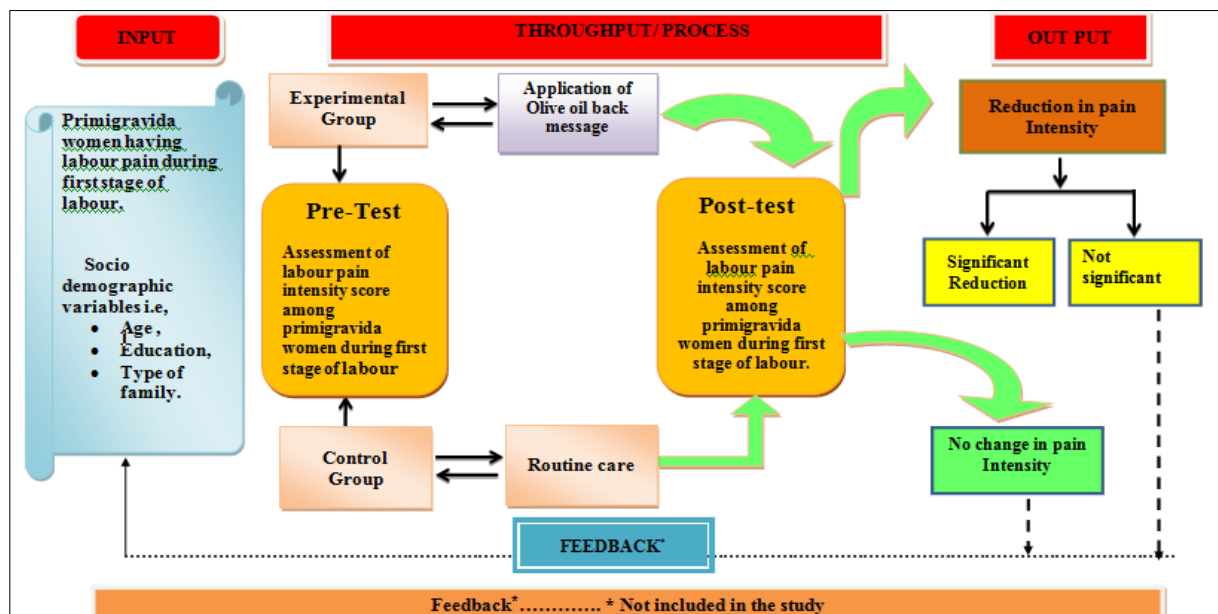**Theoretical frame work based on Ludwig Von Loff's General System Model**



**Fig 1:** Schematic representation of theoretical framework based on Ludwig on Bertalanffy system model

**Review of literature:** Review of literature has been organized under the following headings.
▪ Literature related to pain during labour.
▪ Literature related to effectiveness of back massage on Labour pain during first stage of labour.
▪ Literature related to effectiveness of Olive oil back massage on Labour pain during first stage of labour.

**Literature related to pain during labour:** Aziato, Ohemeng, Omenyo (2016) [16] conducted an exploratory descriptive qualitative study at a tertiary health facility in Accra, Ghana through individual interviews from 14 participants who were purposively sampled. Women in this study experienced pain during labour rated as mild, moderate and severe and the pain was felt at the waist area, vagina, lower abdomen and the general body. The women expressed labour pain through crying, screaming and shouting. It was concluded that all health professionals need to manage labour pain effectively taking the socio-cultural context into consideration.

**Literature related to effectiveness of back massage on Labour pain during first stage of labour:** Sethi, Barnabas (2017) [17] conducted a pre-experimental study to evaluate the effectiveness of back massage on pain among 40 pregnant women in first stage of labour in a selected Hospital, Ludhiana, Punjab. A non-probability purposive sampling technique was used to select a sample. Modified labour pain relief tool was used to measure pain before and after back massage. The study revealed that, in the pre-test mean score was 5.83 and post-test mean score was 3.75 which was found statistically highly significant at p<0.01 level. Age, education, mother's occupation, period of gestation and any history of abortion had no significant relationship with pain, and gravida had statistically significant relationship with pain. Back massage had impact on pain level. Therefore it was concluded that back massage was effective to reduce the level of labour pain.

**Literature related to effectiveness of Olive oil back massage on Labour pain during first stage of labour:** Chauhan, Rani, Bansal (2016) [18] Conducted a study on 60 primigravida women to find effectiveness of Olive oil back massage on reduction of labor pain during first stage of labour at Swami Dayanand Hospital, Shadara, New Delhi. 60 subjects were distributed 30 in experimental and 30 in control group. Olive oil back massage therapy was given to experimental group. A structured interview schedule, labour assessment proforma, numerical pain-rating scale was used for data collection. It was revealed that in pre test, mean of pain was 7.70±0.88 in experimental group and 7.93±0.69 in control group. While as in post-test, mean of pain was 6.53±1.04 in experimental group and 9.20±1.61 in control group after application of Olive oil back massage in experimental group. The study concluded that there was less pain score in experimental group after the olive oil back massage as compared to mothers who had not received olive oil back massage in control group.

**Table 1:** Schematic Representation of Research Design

| Group (N=60) | Pre-test | Intervention | Post-test I | Intervention | Post-test II |
|---|---|---|---|---|---|
| Control Group (n$_1$=30) | CO$_1$ | _ | CO$_2$ | _ | CO$_3$ |
| Experimental Group (n$_2$=30) | EO$_1$ | X | EO$_2$ | X | EO$_3$ |

Key: N = Total sample size (60)
CO$_1$ = Pre-test in Control group.
EO$_1$ = Pre-test in Experimental group.
CO$_2$ = Post-test I in Control group.
EO$_2$ = Post-test I in Experimental group.
CO$_3$ = Post-test II in Control group.
EO$_3$ = Post-test II in Experimental group.
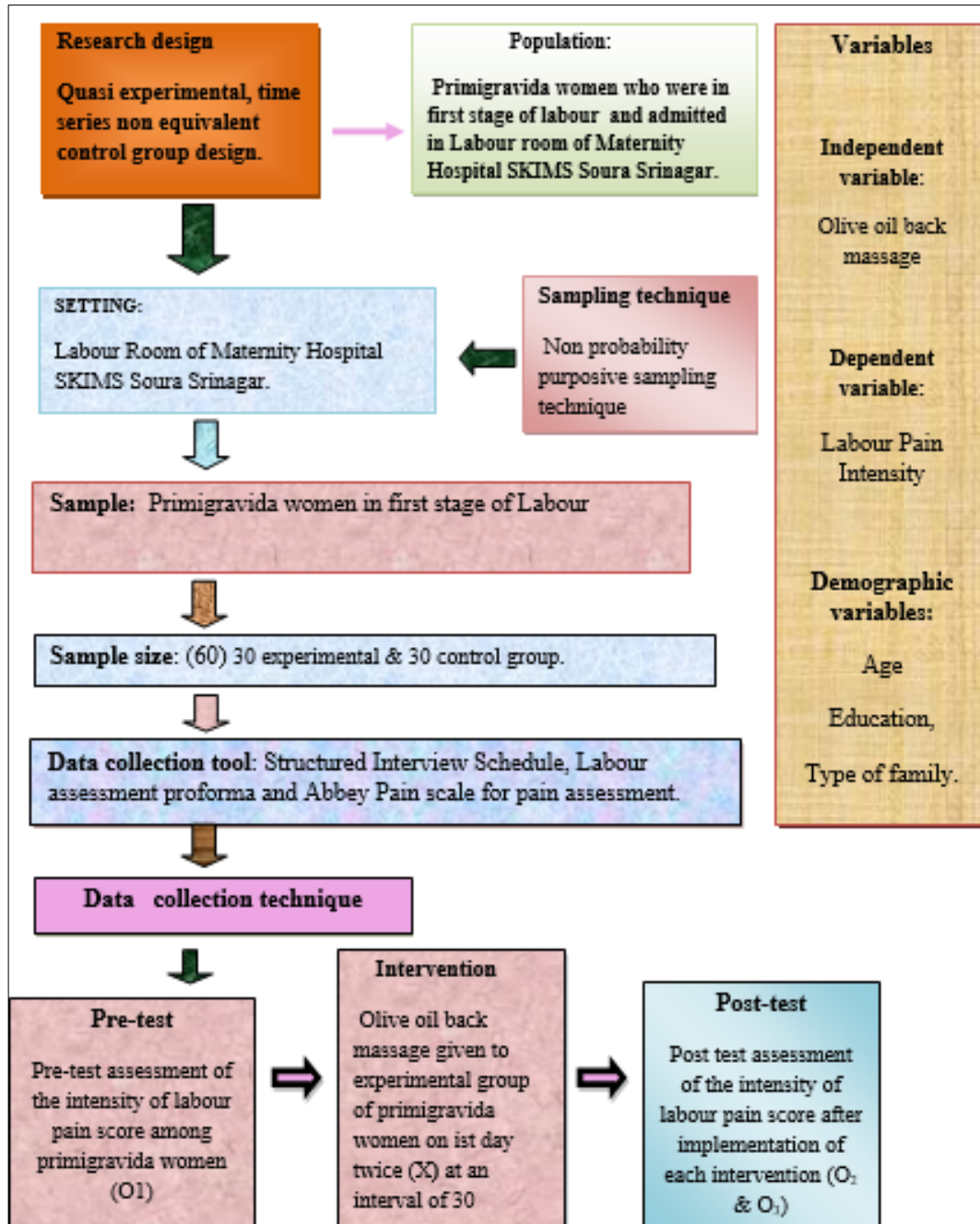X = Intervention (Olive oil back massage) in Experimental group



**Fig 2:** Schematic diagram of research methodology
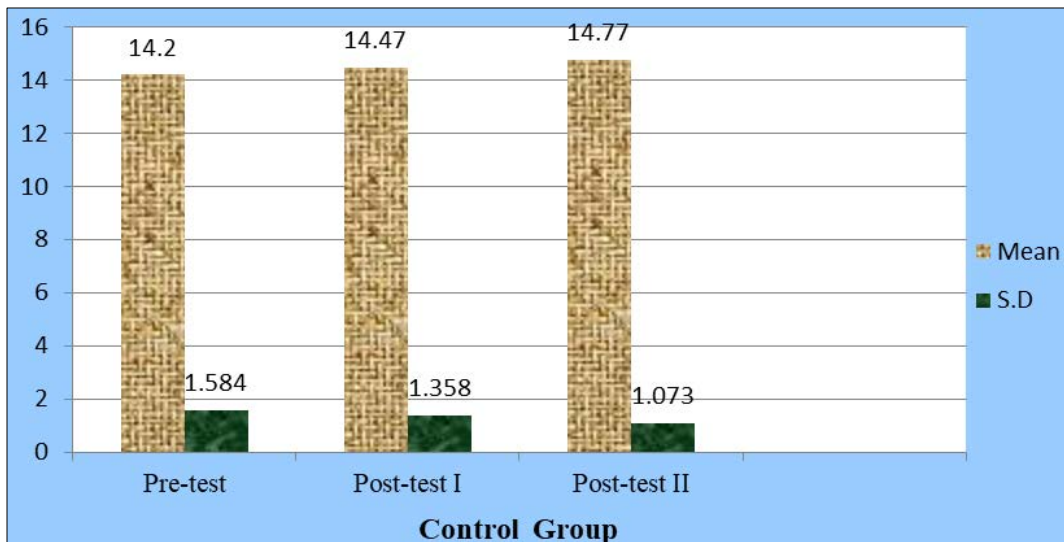
**Analysis and Interpretation**



**Diagram 1:** Bar diagram showing Mean and S.D of pre-test, post-test I and post-test II assessments of labour Pain intensity scores of study subjects in control group.

Shows that in control group, mean pre-test labour pain intensity score of study subjects was 14.20±1.584, mean post-test I labour pain intensity score was (14.47±1.358) and mean post-test II labour pain intensity score was (14.77±1.073).
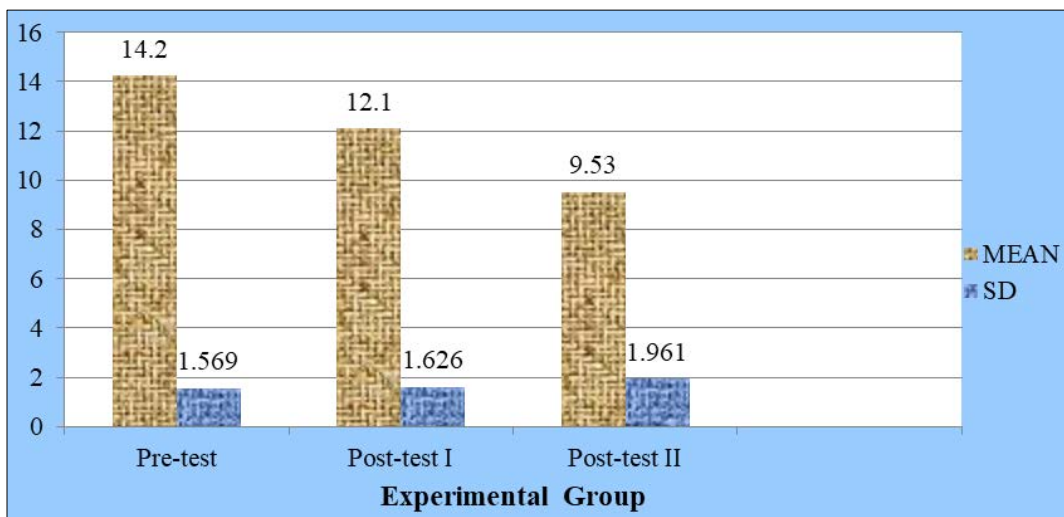


**Diagram 2:** Bar diagram showing Mean and standard deviation of pre-test, post-test I & post-test II assessments of labour pain score of study subjects in Experimental group.

shows that in experimental group, mean pre-test labour pain intensity score of study subjects was 14.23±1.569, mean post-test I labour pain intensity score was (12.1±1.626) and mean post-test II labour pain intensity score of study subjects was (9.53±1.961).

**Table 2:** Comparison of pre-test, post-test I and post-test II assessments of labour pain intensity scores and the significance of difference between the mean pre-test, post-test I & II of study subjects between control and experimental group. N=60

| Labour Pain Intensity Score | | Mean±S.D | Mean Difference | Unpaired t-test | P Value | t value at 0.05 level of significance | Result |
|---|---|---|---|---|---|---|---|
| Pre-test | $n_1$=30 | 14.20±1.584 | 0.03 | 0.147 | 0.8833 | 2.00 | Not-Significant |
| | $n_2$=30 | 14.23±1.569 | | | | | |
| Post-test I | $n_1$=30 | 14.47±1.62 | 2.37 | 5.960 | 0.0000 | 2.00 | Significant |
| | $n_2$=30 | 12.10±1.358 | | | | | |
| Post-test II | $n_1$=30 | 14.77±1.961 | 5.23 | 12.502 | 0.0000 | 2.00 | Significant |
| | $n_2$=30 | 9.53±1.073 | | | | | |

The difference between mean post-test I assessments of labour pain intensity scores of control and experimental group was 2.37 with t-value (5.960) which was found to be statistically significant (p=0.0000) at $p<0.05$ level of

significance, and the difference between mean post-test II assessments of labour pain intensity scores of control and experimental group was 5.23 with t-value (12.502) which was also found to be statistically significant (p=0.0000) at $p<0.05$ level of significance. Hence null hypothesis (H0$_1$) was rejected and research hypothesis (H$_1$) was accepted which states that, There is significant decrease in the intensity of labour pain score in experimental group as compared to control group after application of olive oil back massage in experimental group at 0.05 level of significance, which showed the effectiveness of Olive oil back massage in experimental group. The study also revealed that there was no significant association between pre-test intensity of labour pain score and selected demographic variables like age, education and type of family.

## Conclusions

The study revealed that there was significant difference between the labour pain intensity scores among primigravida women during first stage of labour in both control and experimental group after the application of olive oil back massage in experimental group. All these indicated that olive oil back massage is effective in reducing labour pain intensity and this procedure provide maximum comfort and satisfaction.

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