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A comparative study to assess the effectiveness of povidone-iodine Sitzbath versus lavender oil Sitzbath on episiotomy pain and wound healing among postnatal mothers undergone normal vaginal delivery in CIMS Hospital Bilaspur Chhattisgarh

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Abstract

Worldwide, perineal discomfort is the most common problems encountered postnatally occurring in 42% of women undergoing vaginal birth. Perineal pain is worsening following instrumental delivery, episiotomy, spontaneous tears. Episiotomy may be a major risk factor for infection, blood loss, decrease of sexual pleasure, delayed healing, fistula, incontinence of urine, feces and flatus. Many comfort measures have been recommended to reduce perineal pain and improve episiotomy wound healing. The use of essential oils and povidone iodine solution are among the earliest methods adopted for episiotomy wound healing and pain relief. Lavender oil is traditionally believed to have sedative, anti-depressive and anti-inflammatory properties, in addition to its recognized antimicrobial effects.

Keywords: CIMS, Povidone-iodine, Sitzbath, Episiotomy, pain, postnatal, normal vaginal

Introduction

Childbirth was found to be an overpowering experience in a woman's life since ancient time. It is a strongly physical and enthusiastic occasion in a women's life when she advances to parenthood. Pregnancy and birth of the baby is normal and healthy event in majority of female's life and has potential to be an emancipating life time experience ^[1].

Labour is an unsolicited law of nature, and peculiar to every childbearing woman. Especially the postpartum period becomes more challenging as chances of genital region injury in an outcome of child birth which requires special attention for her wellbeing. Episiotomy is a routinely used surgical approach which is implemented during 2nd phase

of labour. Episiotomy was first performed in 1742 by Dr. Joseph De Lee in order to deliver baby in case of complicated labor About 70% of females with vaginal delivery experience some extent of trauma in the perineum because of perineal tear or episiotomy which requires suture repair. Same as any other surgical incision, episiotomy can also leads to some kind of discomfort for most of postnatal mothers. Various modalities are found to decrease episiotomy pain and upgrade healing process, which include administration of analgesics, Sitz bath, ice pack application, cleanliness, infra-red therapy, perineal care and performance of Kegel's exercises ^[2].

Many women prefer to use complementary and alternative

medicine during pregnancy because of fewer side effects compared to chemical drugs. Studies have shown that 73% of pregnant mothers in Australia and 83.7%, 117~Worldwide, perineal discomfort is the most common problems encountered postnatally occurring in 42% of women undergoing vaginal birth. Perineal pain is worsening following instrumental delivery, episiotomy, spontaneous tears. Episiotomy may be a major risk factor for infection, blood loss, decrease of sexual pleasure, delayed healing, fistula, incontinence of urine, feces and flatus. Many comfort measures have been recommended to reduce perineal pain and improve episiotomy wound healing. The use of essential oils and povidone iodine solution are among the earliest methods adopted for episiotomy wound healing and pain relief. Lavender oil is traditionally believed to have sedative, anti-depressive and anti-inflammatory properties, in addition to its recognized antimicrobial effects [3].

Review of Literature

Daizy Thakuria, Jovita Rathna Abraham (2023) [19], The design adopted for the study was quasi experimental pre-test post-test only design. And the study was conducted in Department of Obstetrics and Gynecology Nursing Rajiv Gandhi University of Health Sciences, Bengaluru, India. The samples selected for the study were 30 by using non probability purposive sampling technique where 15 for Experimental group I and 15 for Experimental group II. Data was collected by using Numerical Pain rating scale to assess the level of episiotomy pain and Davidson's REEDA scale to assess the stages of episiotomy wound healing. In the present study shows that the comparison between the Experimental group I and Experimental group II, shows a significant difference and it was calculated by using unpaired t- test. The degree of freedom was 28 and the value for unpaired t-test was $6.67=0.000015$ ($p<0.05$). So, hypothesis (H3) accepted for the above mentioned objectives and they are significant at 0.05 level.

Mrs. Ritika Janet Singh (2023) [20] Quasi-Experimental design, two groups pre-test, post-test only design was used to assess the effectiveness of Neem extract and Betadine sitz bath on episiotomy wound healing among post-natal mothers. The study conducted on 60 samples. Data was collected using structured interview schedule and REEDA scale assessment of episiotomy wound healing. The findings shows that the mean wound healing score in experimental group I in before betadine sitzbath is 9.3 (SD±1.104) and after Betadine Sitzhbath is 0.56 (SD±0.670) respectively. The paired t-test value is 38.870 which is significant at $p<0.05$ level. And the mean wound healing score in experimental group II, before Neem extract sitzbath is 9.2 (SD±0.959) and after Neem extract sitzbath is 0.23 (SD±0.424) respectively. The independent t-test value 2.537 which is significant at $p<0.05$. The results shows that there is a significant difference between the mean post test score of betadine sitzbath and mean post test score of neem extract sitzbath on episiotomy wound healing among postnatal mothers. Therefore it is clearly proved by this study that Neem Extract Sitzbath is effective more than betadine sitz bath on episiotomy wound healing.

Supreet Kaur, Bhupinder Kaur (2023) [14], A Quasi-Experimental Study to Assess the Effectiveness of Normal Saline Vas Betadine Application on Episiotomy Wound

Healing Among Postnatal Mothers In G.G.5 Medical Hospital, Faridkot, Punjab. Healing after episiotomy has reported as the common cause of maternal comfort in postnatal period. Studies have shown that normal saline is effective in episiotomy wound healing. The study aimed to assess the effectiveness of normal saline on healing of episiotomy wound in order to improve nursing care practices and to provide maximum comfort to postpartum women. The research design was quasi experimental and was conducted from December 2013-2014 in Obstetrics department of GG.S Medical Hospital on 60 subjects (30 for experimental and 30 for control group) of Faridkot, Punjab Intervention in experimental group was application of normal saline in experimental group and administration of betadine in control group. The socio- Demographic sheet which was structured interview schedule was filled by investigate Healing of episiotomy was assessed by using REEDA scale at 24 hrs, day 3 and day 5. The assaults of the study revealed that most of study subjects experienced mild to good episiotomy wound healing. Normal saline helps in episiotomy wound healing in experimental group from day 1 Normal saline was not more effective in episiotomy wound healing from day 11 to day 3 in experimental group as compared to betadine in control group. No association of episiotomy wound healing with age, education, dietary habits, gravida, His level, duration of rupture of membranes, duration of second stage of labour, length of episiotomy, number of sutures and was found in the study hence it can be concluded that betadine is more effective than normal saline in healing of episiotomy wound.

Ms. L. Parimala, Ms. Padmavathi (2020) [16], Quantitative approach-Pre- experimental design was adopted. Sample size was 100 (50 samples in Betadine wash and 50 samples in normal saline), assigned by simple random sampling technique method was used. Data was collected using demographic variables and the level of wound healing to compare the Betadine wash and normal saline episiotomy postnatal mothers Betadine wash was given on Monday, Wednesday and Friday, and in the alternative days normal saline was given Tuesday, Thursday and Saturday. Betadine wash for one week 10-20mins for one group and normal saline for another group In Betadine wash the mean value for pre-test is 29.3 and standard deviation was 8.71. And post-test is 14.56 and standard deviation 9.92. Wilcoxon on rank sum test was $Z=6.154$. $p<0.00001$, it will be significant and positive. In normal saline the mean value for pre-test is 28.7 and standard deviation was

8.78. And post-test is 29.88 and standard deviation 9.01. Wilcoxon on rank sum test was $Z=6.1105$, $W=637.5$, $p<0.00001$. The findings proved that Betadine wash is more effective than normal saline to reduce the wound healing of episiotomy among postnatal.

Rasha Gomaa, Safaa Abd EL Raof Hashem, Randa Mohamed *et al.* (2019) [17], A quasi experimental study included a Simple random sample of 160 postnatal women (80 mothers used saline dressing and 80 mothers used povidone one iodine solution (10%) who had normal vaginal delivery with episiotomy from Ain Shams University Maternity Hospital). Three tools were used for data collection; I. Structured-interviewing reviewing questionnaire sheet, II Standardized REEDA scale and III Visual Analogue Scale. The results revealed that normal

saline had a positive effect on the healing of episiotomy wound among postnatal mothers in form of lower REEDA scale score and pain scores (VAS). The study recommended that; educational session to increase women awareness about use of normal saline after episiotomy in form of leaflet or counseling session. should be adopted. There should be integration of the saline dressing as a main part in discharge plan, Further researches to replicate the study on large sample to determine the factors affecting episiotomy wound healing should be applied. Key words: Episiotomy, saline dressing, povidone iodine solution, postnatal.

Fahimeh Rashidi, (2012) [21], In this double-blind clinical trial, 120 primiparous women with episiotomy that were referred to Al-Zahra Medical Center of Tabriz were randomly allocated to phenytoin or betadine groups (60 in each group). Pain assessment was determine and compared using visual analog scale (VAS) in the first 24-hours and then in the 10th day after delivery. Data analysis performed using chi-square, independent t-student and repeated measurement ANOVA tests. The mean pain intensity in the first 24-hours postpartum was 4.39 ± 1.11 in phenytoin group and in betadine group it was 7.11 ± 1.48 ($p < 0.001$). In the tenth day after delivery, mean pain intensity in phenytoin and betadine groups was 0.72 ± 1.04 and 3.45 ± 2.00 respectively ($p < 0.001$). The results showed that local phenytoin is effective on reducing the pain of episiotomy wound and can be re-placed with betadine. Experimental group II. Data was collected by using Numerical Pain rating scale to assess the level of episiotomy pain and Davidson's REEDA scale to assess the stages of episiotomy wound healing. In the present study shows that the comparison between the Experimental group I and Experimental group II, shows a significant difference and it was calculated by using unpaired t- test. The degree of freedom was 28 and the value for unpaired t-test was $6.67 = 0.000015$ ($p < 0.05$). So, hypothesis (H3) accepted for the above-mentioned objectives and they are significant at 0.05 level.

Materials and Methods

A comparative interventional pre-test post-test research design was used. The tools were socio demographic variables, obstetrical history, - Verbal descriptive pain scale, Reeda Scale for assessing episiotomy wound healing, An extensive review of literature was done.

Content validity of tools was ensured by verifying it with experts. Test - retest method was used for testing reliability of tool. The checklist was found reliable. A pilot study was conducted on 10 post-natal mothers.

The main study was conducted in CIMS, Bilaspur, Chhattisgarh (post-natal ward) and convenient sampling technique was done. The sample size was 60, i.e. 30 for experimental group-1 and 30 for experimental group - 2 were selected. Data collection was analyzed by an paired 't' test which reveals that the pre-test for level of pain in experimental group - 1 was ($X = 1.67$, $SD = 0.49$) as the experimental group - 2 was ($X = 1.67$, $SD = 0.48$) and obtained 't' = 0.32; whereas, in the post- test for level pain in experimental group - 1 ($X = 0.60$, $SD = 0.62$) were compare to experimental group - 2 ($X = 0.23$, $SD = 0.43$) and obtained 't' = 2.68; pre-test for level of wound healing

in experimental group - 1 was ($X = 6.10$, $SD = 1.83$) as the experimental group - 2 was ($X = 6.07$, $SD = 1.43$) and obtained 't' = 6.07; whereas, in the post-test for level of wound healing in experimental group - 1 ($X = 2.43$, $SD = 1.76$) were compare to experimental group - 2 ($X = 1.50$, $SD = 1.80$) and obtained 't' = 2.02; which indicated that there was significant difference in reduction of pain and wound healing of experimental group - 1 than experimental group - 2. The comparison between Povidone iodine sitzbath versus Lavender oil sitzbath on reduction of episiotomy pain among post-natal mothers through the coefficient of correlation. The calculated 'r' value of lavender oil sitzbath 0.9 which is a very strong positive correlation means $r < 1$, while the calculate 'r' value of povidone iodine sitzbath is 0.8 which is also a very strong positive correlation means $r < 1$.

Data Ana Lys Is and Interpretation

Description of socio demographic variable of postnatal mothers in experimental group I and experimental group II

Table 1: Distribution of subject according to the age

Age of the mother (in years)	Experimental group I N= 30		Experimental group II N=30	
	F	%	F	%
< 20 years	2	6.67%	3	10%
21-25 years	8	26.67%	8	26.67%
26-30 years	10	33.33%	9	30%
>30 years	10	33.33%	10	33.33%
Total	30	100%	30	100%

Table 1: Depict that in experimental group 1 majority of postnatal mothers 10 (33.33%) belong to the age group > 30 years of age, 10 (33.33%) belong to 26 to 30 years of age, 8 (26.67%), belong to the age group 21 to 25 years of age, 2 (6.67%) belong to the age < 20 years, where as in experimental group 2 majority of postnatal mothers 10 (33.33%) belong to age >30 years of age, 9 (30%) belong to 26 to 30 years of age, 8 (26.67%) belong to the age 21 to 25 years, 3 (10%) belong to the age <20 years of age.

Table 2: Distribution of subject according to the education

Level of education	Experimental group I N=30		Experimental group II N=30	
	F	%	F	%
Illiterate	0	0%	0	0%
Primary school certificate	7	23.33%	6	20%
High school certificate	11	36.67%	13	43.33%
Graduates or PG	12	40%	11	36.67%
Total	30	100%	30	100%

Table 2 Depict that in experimental group-1 majority of postnatal mothers 12 (40%) where having education up to Graduation, 11 (36.67%) where having education up to high school, 7(23.33%) where having education up to primary school certificate, where as in experimental group 2- majority 13(43.33) where having education up to high school certificate, 11(36.67%) where having education up to graduated, 6(20%) where having education up to primary school.

Table 3: Distribution of subject according to the family income

Family monthly income	Experimental group I N=30		Experimental group II N=30	
	F	%	F	%
>Rs 25000	4	13.33%	2	6.67%
Rs 20000-24999	4	13.33%	6	20%
Rs15000-19999	6	20%	6	20%
Rs10000-14499	11	36.67%	11	36.67%
Rs 5000-9999	5	16.67%	5	16.67%
Total	30	100%	30	100%

Table 3 Depict that in experimental group 1, majority 11(36.67%) where having monthly income between 10000-14499, 6(20%) where having monthly income between 15000-19999, 5(16.67%) where having monthly income between 5000-9999, 4(13.33) where having monthly income >25000. Where as in experimental group 2, majority 11(36.67%) where having monthly income between 10000-14499, 6(20%) where having monthly income between 15000-19999, 5(16.67%) where having monthly income between 5000-9999, 2(6.67%) where having monthly income >25000.

Table 4: Distribution of subject according to the area of residence

Area of residence	Experimental group I N=30		Experimental group II N=30	
	F	%	F	%
Rural	10	33.33%	11	36.67%
Semi-rural	12	40%	12	40%
Urban	4	13.33%	4	13.33%
Semi urban	4	13.33%	3	10%
Total	30	100%	30	100%

Table 4. Depict that in experimental group 1, majority of postnatal mothers 12(40%) where belong to semi rural area, 10(30%) where belong to rural areas, 4(13.33%) where from urban area, 4(13.33) where belong to semi urban areas, where as in experimental group 2, 12(40%) where belong to semi rural area, 10(30%) where belong to rural areas, 4(13.33%) where from urban area, 4(13.33%) where belong to semi urban areas.

Obstetrical Variables

Table 5: Distribution of subject according to the Type of incision

Type of incision	Experimental group I N=30		Experimental group II N=30	
	F	%	F	%
Left Medio-lateral	10	33.33%	12	40%
Right Medio-lateral	9	30%	8	26.66%
J-shaped	6	20%	6	20%
Midline	5	16.66%	4	13.33%
TOTAL	30	100	30	100

Table 5 Depict that Experimental group 1 majority of postnatal mothers i.e. 10 (33.33%) had left medio lateral episiotomy, 9 (30%) had right medio lateral episiotomy, 6(20%) had j-shaped episiotomy, 5 (16.66%) had midline episiotomy. where as in Experimental group 2, majority of postnatal mothers i.e. 12 (40%) had medio lateral episiotomy, 8(26.66%) had right medio lateral episiotomy, 6(20%) had j-shaped episiotomy, 4(13.33) had midline episiotomy.

Table 6: Distribution of subject according to the Type of suture material used

Type of suture material used	Experimental group I N=30		Experimental group II N=30	
	F	%	F	%
Chromic catgut	7	23.33%	7	23.33%
Silk	10	33.33%	14	46.67%
Vicryl	13	43.33%	9	30%
Total	30	100%	30	100%

Table No. 6 Depict that in experimental group 1 type of suture material used to repair episiotomy i.e. 13 (43.33%) had used vicryl suture,10(30.33%) had used silk suture, 7(23.33%) had used chromic catgut and in Experimental group 2 14(46.67%) had used silk, 9(30%) had used vicryl and, 7(23.33%) had used chromic catgut.

Table 7: Distribution of subject according to the Type of perineal pads used

Type of perineal pads used	Experimental group I N=30		Experimental group II N=30	
	F	%	F	%
Hospital made	1	3.33%	2	6.67%
Commercial	20	66.67%	21	70%
Home made	9	30%	7	23.33%
Total	30	100%	30	100%

Table.7 Depict that experimental group 1 majority of postnatal mothers used type of perineal pads i.e. 20(67.67%) used commercial pad, 9(30.%) used home made pad, 1(3.33%) used hospital made pad and in Experimental group 2, 21(70%) used commercial, 7(23.33%) used home made, 2(6.67%) used hospital made.

Table 8: Distribution of subject according to the parity

Parity	Experimental group I N=30		Experimental group II N=30	
	N	%	N	%
One	16	53.33%	15	50%
Two	12	40%	11	36.67%
Three	2	6.67%	4	13.33%
Above three	0	0%	0	0%
Total	30	100%	30	100%

Table. 8 Depict that in Experimental group 1 majority of Postnatal mothers i.e. 16(53.33%) where belong to 1st parity, 12(40.%) belong to 2nd parity, 2(6.67%) belong to 3rd parity. Where as in Experimental group 2 15(50%) where belong to 1st parity, 11(36.67%) belong to 2nd parity, 4(13.33%) belong to 3rd parity.

Table 9: Distribution of subject according to the Dietary pattern

Dietary pattern	Experimental group I N=30		Experimental group II N=30	
	F	%	F	%
Vegetarian	11	36.67%	13	43.33%
Non-vegetarian	19	63.33%	17	56.67%
Total	30	100%	30	100%

Table. 9 Depict that in Experimental group 1 majority of Postnatal mothers, 19 (63.33%) where Non vegetarian, 11(36.67%) where vegetarian and in Experimental group 2

17(56.67%) where non-vegetarian, 13(43.33%) where vegetarian.
Analysis of level of episiotomy pain and wound healing

among postnatal mothers in experimental group II by mean, mean %, SD and paired t test of pre and post level of episiotomy pain in experimental group I.

Table 10: Assessment of effectiveness of Lavender oil sitzbath in episiotomy pain and wound healing among postnatal mothers in experimental group II

Level of pain	Experimental group II		Mean %	Df	Paired 't' test	Table value	Inference
	Mean	SD					
Pre Test	1.67	0.48	27.77%	29	11.51	3.66	p<0.001 Highly significant
Post Test	0.23	0.43	6.33%				
Level of wound healing	Experimental group II		Mean %	Df	Paired 't' test	Table value	Inference
	Mean	SD					
Pre Test	6.07	1.46	29.40%	29	13.98	3.66	p<0.001 Highly significant
Post Test	1.5	1.80	18.28%				

Table 10: Represents that there was highly significant difference between the pre-test and post-test score of episiotomy pain as calculated value 11.51 (df29) was greater than the table value 3.66 at 0.05 level of significance. Episiotomy wound healing as calculated value 13.98 (df 29) was greater than the table value 3.66 at 0.05 level of

significance, To find out the significant difference between the pre-test and post-test skill score, paired't' test was used in lavender oil. In order to test the statistical significance between the mean pre-test and post-test score, the following null hypothesis was formulated.

Table 11: Comparison between the effect of povidone iodine solution and lavender oil in reduction of episiotomy pain among postnatal mothers in experimental group I and experimental group II

Level of pain	Coefficient of correlation	Numerical Value	Inference
Experimental group -1	0.8	r < 1	a very strong positive correlation
Experimental group-2	0.9	R <1	a very strong positive correlation

Table No. 11: Represents that there was experimental group -II (Lavender oil sitzbath) is a very strong positive correlation between Lavender oil sitzbath and episiotomy

pain that is 0.9 and experimental group -I (Povidone iodine sitzbath) is also a very strong positive correlation between Povidone iodine sitzbath and episiotomy pain.

Table 12: Comparison between the effect of povidone iodine solution and lavender oil in episiotomy wound healing among postnatal mothers in experimental group I and experimental group II

Level of wound healing	Coefficient of correlation	Numerical Value	Inference
Experimental group -1	0.7	r < 1	a strong positive correlation
Experimental group-2	0.8	R <1	a very strong positive correlation

Table No. 12: Represents that there was experimental group -II (Lavender oil sitzbath) is a very strong positive correlation between Lavender oil sitzbath and episiotomy wound healing that is 0.8 and experimental group -I

(Povidone iodine sitzbath) is also a strong positive correlation between Povidone iodine sitzbath and episiotomy wound healing.

Table 13: Association between post test score of episiotomy pain among post-natal mothers in experimental group I with the selected demographic variables

Demographic variables	Posttest level of episiotomy pain Experiment group I					Chi sqr value	DF	Critical value	Significance
	No pain (0)	Mild pain (1)	Moderate pain (2)	Severe pain (3)	Total				
1 Age group						4.28	6	12.59	p>0.05 Not significance
< 20 years	0	2	0	0	2				
21-25 years	3	4	1	0	8				
26-30 years	6	4	0	0	10				
>30 years	5	4	1	0	10				
2. Education						4.60	4	9.49	p>0.05 Not Significance
Illiterate	0	0	0	0	0				
Primary school certificate	3	4	0	0	7				
High school certificate	7	4	0	0	11				
Graduates or PG	4	6	2	0	12				
3. Area of residence						11.44	6	12.59	p>0.05 Not Significance
Rural	6	4	0		10				
Semi- rural	5	7	0		12				
Urban	3	0	1		4				
Semi urban	0	3	1		4				
4. Type of incision									

Left Medio- lateral	6	7	1	0	14	0.15	2	5.99	$p>0.05$ Not Significance
Right Medio- lateral	8	7	1	0	16				
5. Type of suture material used									
Chromic catgut	2	5	0	0	7	3.50	4	9.49	$p>0.05$ Not Significance
Silk	4	5	1	0	10				
Vicryl	8	4	1	0	13				
6. Dietary pattern									
Vegetarian	5	5	1	0	11	0.16	2	5.99	$p>0.05$ Not Significance
Non- vegetarian	9	9	1	0	19				
2. Parity									
One	10	6	0	0	16	9.64	4	9.49	$p<0.05$ Significance
Two	4	7	1	0	12				
Three	0	1	1	0	2				
Above three	0	0	0	0	0				

Table No. 13 - On applying the chi-square test demographic variable “Parity” was significantly associated with the Level of pain among post-natal mothers. The χ^2 value of “Parity” was 9.64 greater than the table value (9.49) at 4 degree of freedom. Hence H1 i.e, there is a significant association between Parity and level of pain is accepted. Association between the Level of pain among post natal mothers in Expt group 1 and other selected socio

demographic variables such as Age ($\chi^2=4.28, p>0.05$), Education ($\chi^2=4.60, p>0.05$), residence ($\chi^2=11.44, p>0.05$), Income ($\chi^2=12.03, p>0.05$), were found to be statistically not significant. Hence H0 that there is no significant association between selected socio- demographics like age, Education, Type of family, with the Pain level in Expt group is accepted.

Table 14: Association between post test score of episiotomy pain among post natal mothers in experimental group II with the selected demographic variables

Demographic variables	Posttest level of episiotomy pain Experiment group 2					Chi sqr value	DF	Critical value	Significance
	No pain (0)	Mild pain (1)	Moderate pain (2)	Severe pain (3)	Total				
1 Age group									
< 20 years	3	0	0	0	3	11.61	3	7.82	$p<0.05$ Significance
21-25 years	8	0	0	0	8				
26-30 years	8	1	0	0	9				
>30 years	4	6	0	0	10				
2. Education									
Illiterate	4	2	0	0	6	3.15	3	7.82	$p>0.05$ Not Significance
Primary school certificate	12	1	0	0	13				
High school certificate	7	4	0	0	11				
Graduates or PG	4	2	0	0	6				
3. Area of residence									
Rural	8	3	0	0	11	1.49	3	7.82	$p>0.05$ Not Significance
Semi-rural	9	3	0	0	12				
Urban	4	0	0	0	4				
Semi urban	2	1	0	0	3				
4. Type of incision									
Left Medio- lateral	9	4	0	0	13	0.71	1	3.84	$p>0.05$ Not Significance
Right Medio- lateral	14	3	0	0	17				
5. Type of suture material used									
Chromic catgut	5	2	0	0	7	1.25	2	5.99	$p>0.05$ Not Significance
Silk	12	2	0	0	14				
Vicryl	6	3	0	0	9				
6. Dietary pattern									
Vegetarian	9	4	0	0	13	0.71	1	3.84	$p>0.05$ Not Significance
Non- vegetarian	14	3	0	0	17				
7. Parity									
One	10	5	0	0	15	2.21	2	5.99	$p>0.05$ Not Significance
Two	9	2	0	0	11				
Three	4	0	0	0	4				
Above three	0	0	0	0	0				

Table No. 14: On applying the chi-square test demographic variable “age” was significantly associated with the Level of pain among post-natal mothers in Expt group 2. The χ^2 value of “age” was 11.61 greater than the table value (7.82) at 3 degree of freedom. Hence H1 i.e, there is a significant

association between age and level of pain is accepted. Association between the Level of pain among post natal mothers in Expt group 2 and other selected socio demographic variables such as Education ($\chi^2=3.15, p>0.05$), residence ($\chi^2=1.49, p>0.05$), Income ($\chi^2 = 4.60,$

$p > 0.05$),...were found to be statistically not significant. Hence H0 that there is no significant association between selected socio-demographics like age, Education, Type of

family, monthly income with the pain level in Expt grp 2 is accepted.

Table 15: Association between post test score of episiotomy wound healing and among post natal mothers in experimental group I with the selected demographic variables

Demographic variables	Posttest level of episiotomy wound healing in Experiment group 1					Chi sqr value	DF	Critical value	Significance
	No pain (0)	Mild pain (1)	Moderate pain (2)	Severe pain (3)	Total				
1. Age group									
< 20 years	0	2	0	0	2	4.09	6	12.59	$p > 0.05$ Not significance
21-25 years	1	6	1	0	8				
26-30 years	3	7	0	0	10				
>30 years	2	8	0	0	10				
2. Education									
Illiterate	0	0	0	0	0	4.29	4	9.49	$p > 0.05$ Not significance
Primary school certificate	1	6	0	0	7				
High school certificate	4	7	0	0	11				
Graduates or PG	1	10	1	0	12				
3. Area of residence									
Rural	0	10	0	10		19.56	6	12.59	$p > 0.05$ significance
Semi-rural	3	9	0	12					
Urban	3	0	1	4					
Semi urban	0	4	0	4					
4. Type of incision									
Left Medio- lateral	0	13	1	14		7.29	2	5.99	$p > 0.05$ significance
3. Type of incision									
Left Medio-lateral	3	10	0	0	13	6.65	1	3.84	$p > 0.05$ Significance
Right Medio-lateral	12	5	0	0	17				
4. Type of suture material used									
Chromic catgut	4	3	0	0	7	4.06	2	5.99	$p > 0.05$ Not Significance
Silk	9	5	0	0	14				
Vicryl	2	7	0	0	9				
Hospital made	1	6	0	0	7	4.76	2	5.99	$p > 0.05$ Not Significance
Commercial	13	8	0	0	21				
Home made	1	1	0	0	2				
6. Dietary pattern									
Vegetarian	8	5	0	0	13	1.22	1	3.84	$p > 0.05$ Not Significance
Non-vegetarian	7	10	0	0	17				
7. Parity									
One	8	7	0	0	15	1.88	2	5.99	$p > 0.05$ Not Significance
Two	4	7	0	0	11				
Three	3	1	0	0	4				
Above three	0	0	0	0	0				

Table No. 15: On applying the chi-square test demographic variable “type of incision” was significantly associated with the Level of wound healing among post-natal mothers. The χ^2 value of “type of incision” was 6.65 greater than the table value (5.99) at 2 degree of freedom. Hence H1 i.e, there is a significant association between “type of incision” is accepted.

Association between the Level of wound healing among post natal mothers in Expt group 2 and other selected socio demographic variables such as Age ($\chi^2=1.34, p > 0.05$), Education ($\chi^2=4.19, p > 0.05$), Income ($\chi^2=1.62, p > 0.05$),...were found to be statistically not significant. Hence H0 that there is no significant association between selected socio-demographics like age, Education Type of

family, Family income.... with the wound healing level in Expt group 2 is accepted.

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