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A Quasi experimental study to compare the effects of cool gel packs versus analgesics on post- episiotomy pain reduction in selected hospital Shimla, Himachal Pradesh, India

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ABSTRACT

Introduction-Pain after episiotomy has reported as the common cause of maternal morbidities in postnatal period. Studies have shown that cold therapy is effective in reducing post episiotomy pain.So the study aimed to compare the effect of cool gel packs versus analgesics on post episiotomy pain reduction in order to improve nursing care practices and to provide maximum comfort to postpartum women.
Method-The research design was quasi experimental and was conducted from Dec. 2023in obstetrics department of Indra Ghandi medical collage & Hospital Kamala Nehru State Hospital Mother &Child Shimla (KNH) on 60 subjects (30 for experimental and 30 for control group) of Shimla, Himachal Pradesh. Intervention in experimental group was application of cool gel packs and in control group was administration of analgesic (as per hospital routine). The socio-Demographic sheet which was structured interview schedule was filled by investigator. Level of pain of postpartum women after normal delivery with episiotomy is assessed by using subjective and objective tool. Pre-intervention and post-intervention assessment (at 0, 30 and 60 min) was done for both the groups.
Results -The results of the study revealed that most of study subjects experienced mild to moderate level of post-episiotomy pain. Cool gel packs help in reduction of post-episiotomy pain in experimental group at 0, 30 and 60 min. With NRS, Cool gel packs were more effective in reducing post-episiotomy pain at 0 min and 30 min of time in experimental group as compared to analgesics in control group but at 60 min of time both analgesics and cool gel packs were equally effective. With BPS, Cool gel packs were more effective in reducing post-episiotomy pain at 0 min, 30 min and at 60 min. No association of post-episiotomy pain with age, parity, duration of 2nd stage of labour, sex of the child was found in the study.
Conclusion- Hence it can be concluded that Cool gel packs are more effective in reducing post episiotomy pain in comparison to analgesics up to 30 min.

Keyword: Post- episiotomy pain, cool gel packs, postpartum women, Analgesics.

INTRODUTION

Woman is the mother of mankind. The procreation of mankind is impossible without women. Child bearing is a boon bestowed upon women by almighty. Over the past three decades, women's health has emerged as a specialty in health and social sciences. Central to women's health perspective is the notion of holism. Even the colleges of obstetrics and gynaecology have the mission to improve women's health through education, advocacy, practice and research for the first decade of next millennium. In India, most mothers have poor knowledge regarding postnatal care. Illiteracy, poverty and lack of communication and transport facility make them vulnerable to serious consequences.

Though they are the prominent care providers within the family and key to human development and well being, the fundamental right health is denied to them in most part of the world. The death of a mother increases the risk to the survival of her young children as the family cannot substitute a maternal role.

However in this earlier trial, application of cooling treatments were limited to the first two days following childbirth while women were in hospital. Localized cooling treatments may have the potential to continue to reduce levels of perineal pain over a longer period of time if used by women after returning home. It has not been usual practice to give women localized cooling treatment for home application. The majority go home with a recommendation to use bathing and oral analgesics to alleviate perineal pain. Research has reported that levels of pain remained fairly constant from day two today five.

REVIEW OF LITERATURE

Review of literature is a standard and essential activity of any scientific literature. This help to gain insight into the various aspects of the problem selected for the study. It is a critical summary of research problem in context to identify gaps and weakness in prior studies to justify a new investigation. The purpose of review of literature is to discover what others have attempted to find out and to gain insight into the problem. It also provides the basis for further investigations, which justifies the need for replication, throw light on the feasibility of the study and the problems faced during the study. The literature review also assists the researchers in methodology and analysis of data. The review of literature related to present study has been organized under the following three headings:

1. Review of literature related topost-episiotomy pain
2. Review of literature related to post-episiotomy pain management
3. Review of literature related to cool gel packs application
4. Review of literature related to analgesics used for perineal pain.
5. Miscellaneous

This chapter discussed about review of literature related to post-episiotomy pain, post-episiotomy pain management, cool gel packs application, analgesics used for perineal pain. The next chapter will deal with the methodology adopted for this research study

NEED OF THE STUDY

In obstetrics there is concern with pain occurring during labour, delivery and after cesarean section; however perineal pain after vaginal delivery and after episiotomy is often ignored by health professionals. Pain after episiotomy has reported as the common cause of maternal morbidities in postnatal period. In the developed world there has been a dramatic increase in caesarean section rates in the last decade. Fear of the pain associated with labour as well as perineal injury is reported as a reason why women may request a caesarean section. The perineal pain from the episiotomy normally causes maternal discomfort. Several studies have shown that cold therapy is effective in reducing post episiotomy pain, but no study has assessed the efficacy of cold gel pack for relieving perineal pain in our setting. With the increasing trend of nuclear family it becomes essential for the mother to be free from discomfort from the beginning of postnatal periods, so that she can concentrate on her child care.

OBJECTIVES OF THE STUDY

1. To assess the effect of cool gel packs on post episiotomy pain.
2. To compare the effects of cool gel packs versus analgesics on post episiotomy pain reduction.
3. To find the association between post episiotomy pain with age, parity, duration of 2^{nd} stage of labor, sex of the child.

CONCEPTUAL FRAMEWORK OF THE STUDY (MODIFIED GENERAL SYSTEM AND GATE CONTROL THEORY)

The conceptual model is made up of concepts which are statements expressing the relations between concepts. Fawcett (1964) stated that conceptual model provides a certain frame of reference for clinical practice, research and education. It explains the dynamics of the situation and also gives direction to the researcher for relevant questions on phenomena and point out solutions to practical problems. Conceptual framework of the present study is based on modified general system and gate control theory. General system theory was given by Ludwig Von Bertalanffy (1968) And Gate Control Theory by Melzack and Wall's (1965)**.**

General system theory serves as model for viewing man as interacting with environment. This theory says about human as open system, Subsystems, Input, Throughput and Output in terms of feedback. One of the first theorists to develop system theory was Ludwig Von Bertalanffy (1968), who synthesized the following abstract laws in the system theory development:

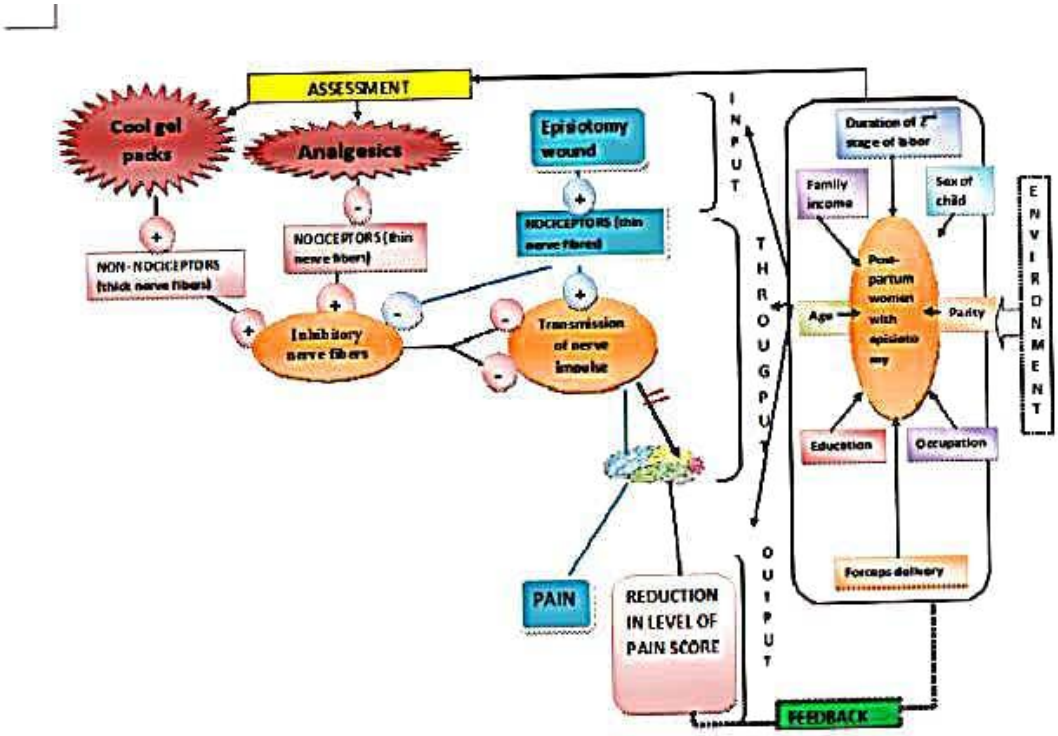

Fig: 1 CONCEPTUAL FRAMEWORK

METHODOLOGY

The methodology is the most important part of research as it is the framework of conducting the study. It indicates the general pattern for organizing the procedures to gather valid and reliable data for an investigation. This chapter deals with methodology undertaken for a Quasi experimental study to compare the effects of Cool gel packs versus analgesics on post- episiotomy pain reduction, in selected hospital, Faridkot, Punjab.

METHODOLOGY

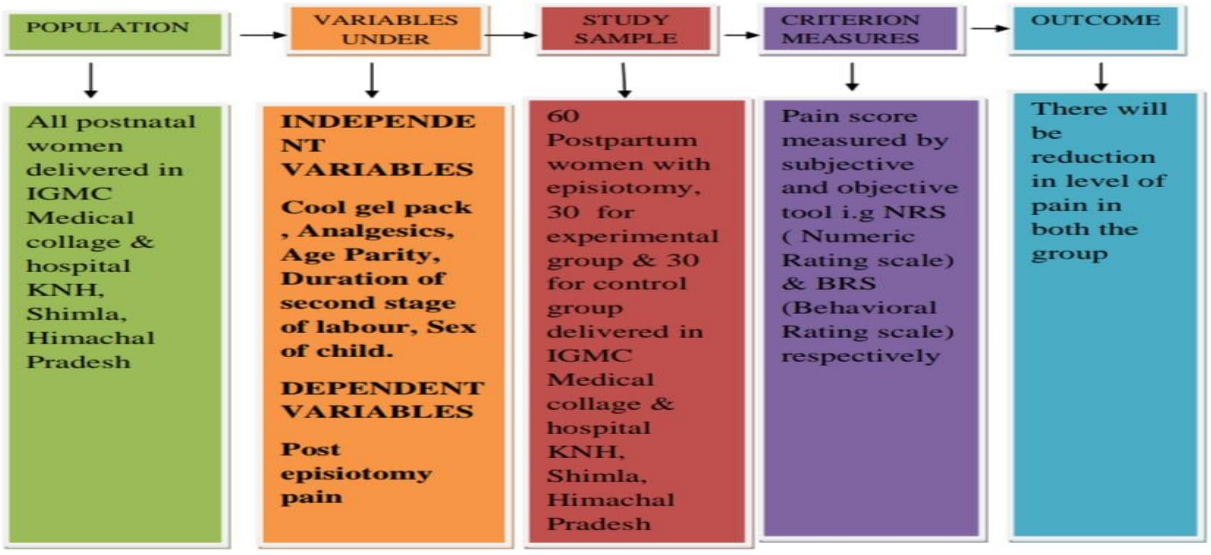

FIG: 2DIAGRAMS SHOWING SCHEMATIC DESIGN OF THE STUDY

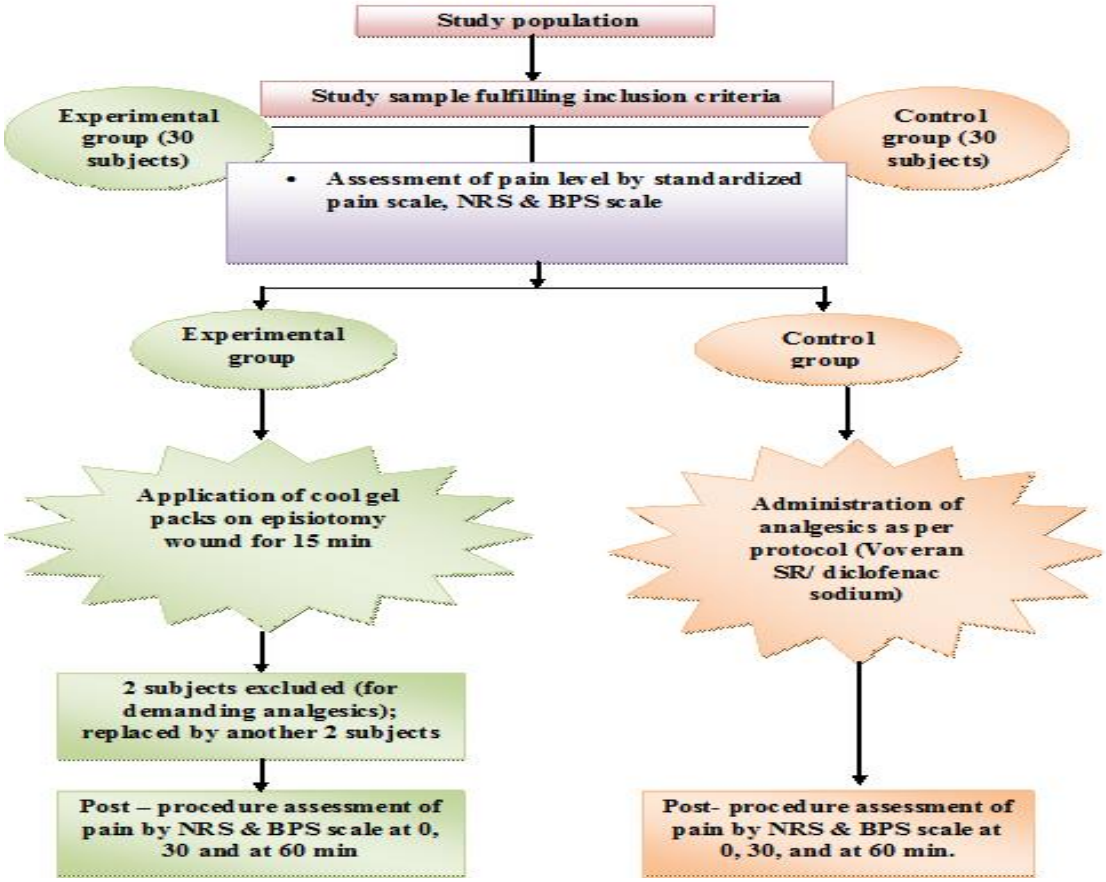

FIG: 3 FLOW CHART SHOWING PROCEDURE OF DATA COLLECTION

1. **CHARACTERISTICS OF SAMPLE SUBJECTS**

TABLE1: DISTRIBUTION OF POSTPARTUM WOMEN ACCORDING TO SELECTED SOCIODEMOGRAPHIC VARIBALES

Sr.no	Variable	Experimental group N=60		Control group	
		Frequency (n)	**Percentage (%)**	**Frequency (n)**	**Percentage (%)**
1.	**Age**				
	18- 22	13	43.33	14	47
	23- 27	13	43.33	13	43
	28- 32	3	10	3	10
	33- 37	1	3	0	0
2	**Parity**				
	1	23	77	27	90
	2	7	23	3	10
3	**Sex of child**				
	Female	16	53	13	43
	Male	14	47	17	57
4	**Duration of 2nd stage of labor**				
	Less than 30 min	4	13	2	7
	31-60 min	2	7	1	3
	61-90 min	7	23	5	17
	91-120 min	17	57	22	73
5	**Education level**				
	Primary	9	30	6	20

	Middle	9	30	10	33
	Secondary	5	17	9	30
	Higher secondary	3	10	2	7
	Graduate & above	4	13	3	10
6	**Occupation**				
	Government service	0	0	0	0
	Private service	1	4	1	3
	Self employed/ business	1	3	0	0
	Labor	1	3	0	0
	Unemployed/housewife	27	90	29	97
7	**Family income (per month in Rs.)**				
	Less than 5000	8	27	8	27
	5000 – 10,000	17	56	15	50
	10000 – 15,000	2	7	5	17
	15,00 – 20,000	3	10	2	6
	20,000 – 25,000	0	0	0	0
	25,000 and above	0	0	0	0
8	**Forceps used**				
	Yes	1	3	1	3
	No	29	97	29	97

Table1: reveals the frequency and percentage distribution of socio-demographic characteristics of study subjects.

1. FINDINGS RELATED TO ASSESSMENT OF THE EFFECT OF COOL GELPACKS ON POST EPISIOTOMY PAIN IN EXPERIMENTAL GROUP.

TABLE: 2 EFFECTS OF COOL GEL PACKS ON POST EPISIOTOMY PAIN IN EXPERIMENTAL GROUP

N=30

Df=29

Variable	**Mean ± SD**	**T**	**p-value**
Numeric Rating Scale			
Pre-intervention Post-intervention 1(0min)	3.74 ± .680 .150± .2517	35.420	.000***
Pre-intervention Post-intervention2(30 min)	3.74 ± .680 .14 ±.292	37.644	.000***
Pre-intervention Post-intervention3(60 min)	3.74 ± .680 .36± .460	36.604	.000***
Behavioral Rating Scale			
Pre-intervention Post-intervention1(0min)	2.900± .7606 .1080± .18279	23.307	.000***
Pre-intervention Post-intervention2(30 min)	2.900± .7606 .11 ±.191	24.047	.000***
Pre-intervention Post-intervention3(60 min)	2.900± .7606 ..20 ±.305	25.533	.000***

***highly significant at p<0.001

Table: 2 and figure: 4-5 shows that mean level of post – episiotomy pain with NRS, Pre-intervention, Post-intervention at 0 min, at 30 min and at 60 min was 3.74, 0.150, 0.14, 0.36 respectively and mean level of post – episiotomy pain with BRS, Pre-intervention, Post-intervention at 0 min, at 30 min and at 60 min was 2.900, 0.1080, 0.11, 0.20 respectively.This difference was found to be statistically highly significant at p value <0.001.It can be concluded that cool gel packs help in reduction of post-episiotomy pain in experimental group at 0, 30 and 60 min.

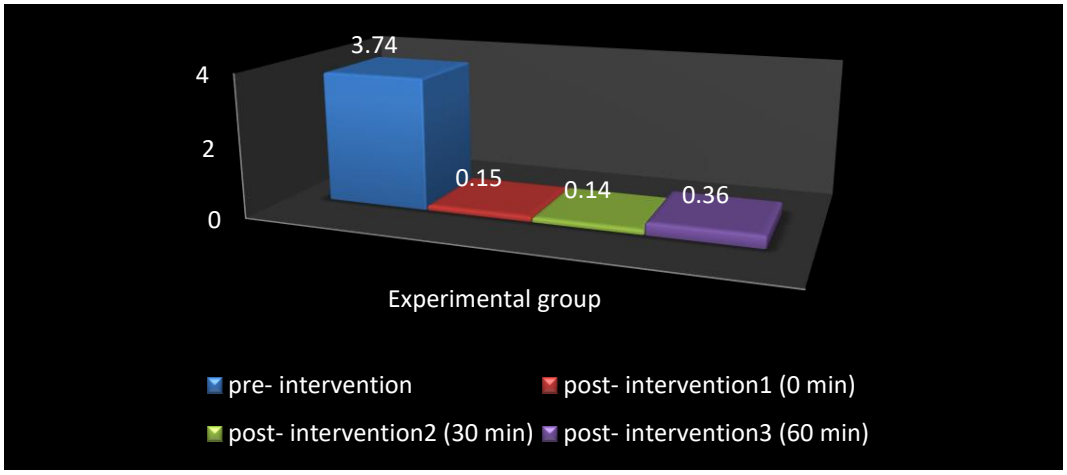

FIGURE:4 BAR GRAPH SHOWING THE EFFECT OF COOL GEL PACKS ON POST-EPISIOTOMY PAIN WITH NRS IN EXPERIMENTAL GROUP.

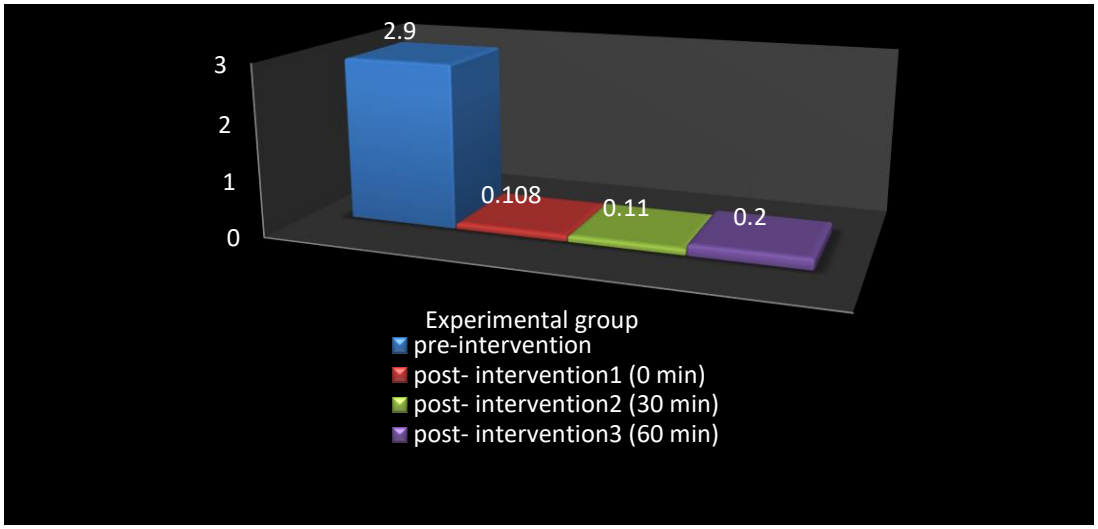

FIGURE:5 BAR GRAPH SHOWING THE EFFECT OF COOL GEL PACKS ON POST-EPISIOTOMY PAIN WITH BRS IN EXPERIMENTAL GROUP.

2. FINDINGS RELATED TO COMPARISON OF THE EFFECTS OF COOL GEL PACKS VERSUS ANALGESICS ON POST-EPISIOTOMY PAIN

TABLE: 3 COMPARISON OF MEAN DIFFERENCE OF LEVEL OF POST-EPISIOTOMY PAIN WITH NRS & BRS PAIN SCALES IN EXPERIMENTAL AND CONTROL GROUPS. N=60

Variable	Groups	Mean diff ± SD	t	p-value
Numeric Rating Scale				
Level of pain (0 min)	CONTROL EXPERIMENTAL	.000±.000 3.5896±0.55508	-35.420	.000***
Level of pain (30 min)	CONTROL EXPERIMENTAL	2.1526±.33984 3.6008±.52391	-12.702	.000***
Level of pain (60 min)	CONTROL EXPERIMENTAL	3.5782±0.45874 3.3829±0.50620	1.566	.123 NS
Behavioral Rating Scale				
Level of pain (0 min)	CONTROL EXPERIMENTAL	.000±.000 2.7919±0.65610	-23.307	.000***
Level of pain (30 min)	CONTROL EXPERIMENTAL	1.7761±0.27087 2.7947±0.63654	-8.065	.000***
Level of pain (60 min)	CONTROL EXPERIMENTAL	2.2982±0.33181 2.7047±0.58019	-3.331	.002**

Df=58 ***highly significant at p<0.001**significant at p<0.05
NS - Not Significant at p<0.05

Table:3 and figure 6 & 7 depicts the Mean difference of level of post-episiotomy pain with NRS at 0 min, 30 min and 60 min in control and experimental groups was (0.000, 3.5896), (2.1526, 3.6008) and (3.5782, 3.3829) respectively.Mean difference of level of post-episiotomy pain with BRS at 0 min, 30 min and 60 min in control and experimental groups was (0.000, 2.7919), (1.7761, 2.7947), (2.2982, 2.7047) respectively. With NRS, the mean differences, at 0 min and 30 min was found to be statistically significant at p value <0.001, but at 60 min this difference was statistically non significant. With BRS mean differences at 0 min, 30 min and 60min was found to be statistically significant at p value <0.05. Hence it can be concluded that, cool gel packs were more effective in reduction of post-episiotomy pain at 0 and 30 min but at 60 min of time both analgesics and cool gel packs were equally effective.

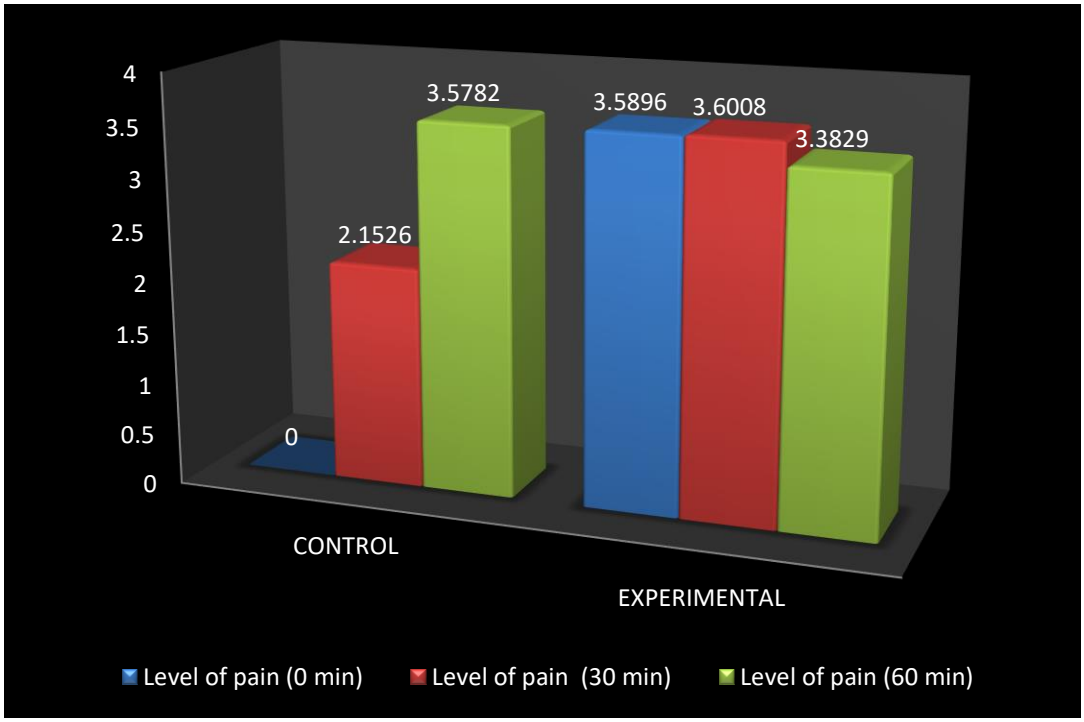

FIGURE: 6 BAR GRAPH SHOWING THE COMPARISON OF MEAN DIFFERENCE OF LEVEL OF PAIN WITH NRS IN EXPERIMENTAL AND CONTROL GROUPS AT 0, 30 AND 60MIN.

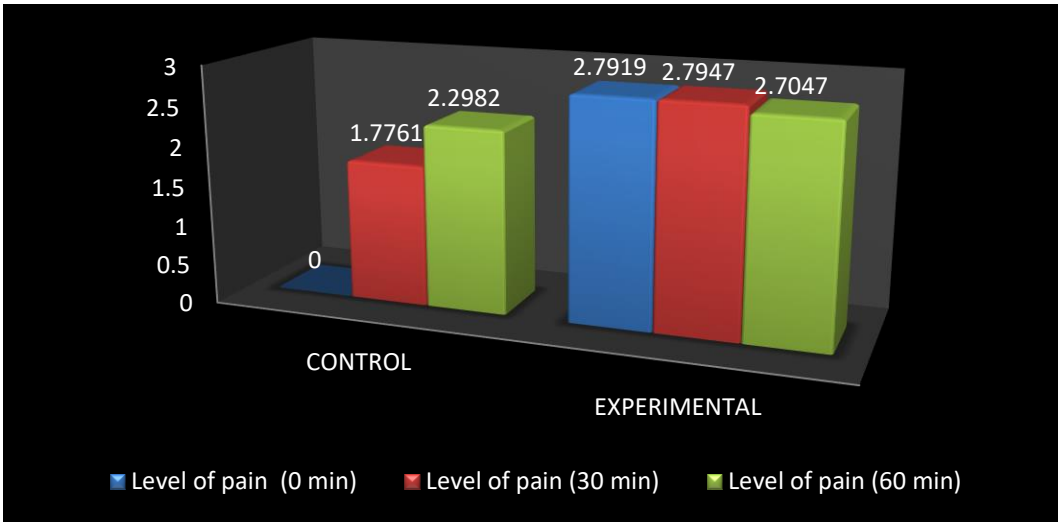

FIGURE:7 BAR GRAPH SHOWING THE COMPARISON OF MEAN DIFFERENCE OF LEVEL OF PAIN WITH BRS IN EXPERIMENTAL AND CONTROL GROUPS AT 0, 30 AND 60 MIN. (N=60)

3. FINDINGS RELATED TO ASSOCIATION OF POST EPISIOTOMY PAIN WITH AGE, PARITY, DURATION OF 2ND STAGE OF LABOR, SEX OF THE CHILD.

TABLE: 4(A) ASSOCIATION OF POST-EPISIOTOMY PAIN WITH AGE

N=30

Numeric Rating Scale (NRS)						
	Control Group			**Experimental Group**		
Age	MildN (%)	ModerateN (%)	Total	MildN (%)	ModerateN (%)	Total
18-22	11(78.57%)	3 (21.43%)	14	6(46.15%)	7(53.85%)	13
23-27	6 (46.15%)	7 (53.85%)	13	10(76.90%)	3(23.10%)	13
28-32	2(66.67%)	1(33.33%)	3	1(33.33%)	2(66.67%)	3
33-37	0(0%)	0(0%)		0(0%)	1(100%)	1
Total	19	11	30	17	13	30
Chi-square	3.066			4.730		
p-value	.216^{NS}			.193^{NS}		
Behavioral Rating Scale (BRS)						
	Control Group			**Experimental Group**		
Age	MildN (%)	ModerateN (%)	Total	MildN (%)	ModerateN (%)	Total
18-22	14(100%)	0(0%)	14	12(92.31%)	1(7.69%)	13
23-27	13(100%)	0(0%)	13	12(92.31%)	1(7.69%)	13
28-32	3(100%)	0(0%)	3	3(100%)	0(0%)	3
33-37	0(0%)	0(0%)	0	0(0%)	1(100%)	1
Total	30	0	30	27	3	30
Chi-square	.[a]			9.487		
p-value				.023^{NS}		

TABLE: 4(B)ASSOCIATION OF POST-EPISIOTOMY PAIN WITH PARITY N=30

Numeric Rating Scale (NRS)						
	Control Group			**Experimental Group**		
Parity	Mild N (%)	Moderate N (%)	Total	Mild N (%)	Moderate N (%)	Total
1	17(62.96%)	10(37.04%)	27	13(56.52%)	10(43.48%)	23
2	2(66.67%)	1(33.33%)	3	4(57.14%)	3(42.86%)	7
Total	19	11	30	17	13	30
Chi-Square	.016			.001		
p-Value	.900^{NS}			.977 ^{NS}		
Behavioral Rating Scale (BRS)						
	Control Group			**Experimental Group**		
Parity	Mild N (%)	Moderate N (%)	Total	Mild N (%)	Moderate N (%)	Total
1	27(100%)	0	27	21(91.30%)	2(8.7%)	23
2	3(100%)	0	3	6(85.71%)	1(14.29%)	7
Total	30	0	30	27	3	30
Chi-Square	.[a]			.186		
p-Value				.666^{NS}		

df: 1NS: Not Significant at p<0.05

Table: 4(b) represents the association of post-episiotomy pain with parity of women measured by numeric rating scale. In control group 17 (62.962%) and 2(66.67%)) of the women belong to parity1 & parity 2 respectively had mild level of pain. While 10 (37.037%) and 1(33.33%) of the women belong to parity 1 and parity 2 respectively had moderate level of pain whereas in experimental group 13(56.52%) and 4(57.14%) of the women belong to parity1 & parity 2 respectively had mild level of pain. While 10 (43.48%) and 3 (42.86%) of the women belong to parity 1 and parity 2 respectively had moderate level of pain

TABLE: 4(C) Association Of Post-Episiotomy Pain With Sex Of Child.

N=30

Numeric Rating Scale (NRS)						
	Control Group			**Experimental Group**		
Sex of child	MildN (%)	ModerateN (%)	Total	MildN (%)	ModerateN (%)	Total
Female	8(61.53%)	5(38.47%)	13	10(62.5%)	6(37.5%)	16
Male	11(64.70%)	6(35.30%)	17	7(50%)	7(50%)	14
Total	19	11	30	17	13	30
Chi-square	.032			.475		
p-value	.858 **NS**			.491**NS**		
Behavioral Rating Scale (BRS)						
	Control Group			**Experimental Group**		
Sex of child	Mild N (%)	Moderate N (%)	Total	Mild N (%)	Moderate N (%)	Total
Female	13(100%)	0	13	15(93.75%)	1(6.25%)	16
Male	17(100%)	0	17	12(85.71%)	2(14.29%)	14
Total	30	0	30	27	3	30
Chi square	.[a]			.536		
p-value				.464 **NS**		

Table: 4(c)depicts the association of post-episiotomy pain with sex of child measured by Numeric Rating Scale. In control group 8(61.53%) and 11(64.70%) of women with sex of child female and male respectively had mild level of pain. While 5(38.46%) and 6(35.29%) of women with female and male child respectively had moderate level of pain. On other hand in experimental group 10(62.5%) and 7(50%) of women with sex of child female, male respectively had mild level of pain, while 6(37.5%) and 7(50%) of women with female and male child respectively had moderate level of post-episiotomy pain.

TABLE: 4(D) Association Of Post-Episiotomy Pain With Duration Of 2nd Stage Of Labour.

N=30

Numeric Rating Scale (NRS)						
	Control Group			**Experimental Group**		
Duration of 2nd stage of labor	MildN (%)	ModerateN (%)	Total	MildN (%)	ModerateN (%)	Total
Less than 30 min	1(50%)	1(50%)	2	3(75%)	1(25%)	4
31-60 min	1(100%)	0(0%)	1	1(50%)	1(50%)	2
61-90 min	4(80%)	1(20%)	5	4(57.14%)	3(42.86%)	7
91-120 min	13(59.10 %)	9(40.90%)	22	9(52.94%)	8(47.06%)	17
Total	19	11	30	17	13	30
chi-square	1.501			2.717		
p-value	.682 **NS**			.606**NS**		
Behavioral Rating Scale (BRS)						
	Control Group			**Experimental Group**		
Duration of 2nd stage of labor	Mild N (%)	Moderate N (%)	Total	Mild N (%)	Moderate N (%)	Total
Less than 30 min	2(100%)	0(0%)	2	4(100%)	0	4
31-60 min	1(100%)	0(0%)	1	2 (100%)	0	2
61-90 min	5(100%)	0(0%)	5	7(100%)	0	7
91-120 min	22(100%)	0(0%)	22	14(82.35%)	3 (17.65%)	17
Total	30	0	30	27	3	30
chi-square	.[a]			2.549		
p-value				.636 **NS**		

MAJOR FINDINGS OF THE STUDY

1. Majority of the study subjects were in age group 18-22 yrs, 14(47%) in control group and 13(43.33%) in experimental group.
2. Majority of the study subjects in control group 27(90%) and in experimental group 23(77%) belong to parity 1.
3. Majority of the study subjects in control group 17(57%) had male baby whereas in experimental group 16(53%) had female baby.
4. The duration of 2nd stage of labor was 91-120 min in majority of the study subjects 22(73%) in control group and 17(57%) in experimental group.
5. Most of the study subjects in control group 10(30%) were middle passed whereas in experimental group 9(30%) were primary passed.
6. Most of the study subjects in control group 29(97%) and in experimental group 27(90%) were house-wives.
7. Majority of the study subjects 15(50%) and 17(56%) in control group and in experimental group respectively were having 5000-10,000 rs/month as their family income.
8. Forceps were used in single subject in control as well as in experimental group.
9. Most of study subjects experienced mild to moderate level of post-episiotomy pain.
10. Cool gel packs help in reduction of post-episiotomy pain in experimental group at 0, 30 and 60 min.
11. On Comparison of mean difference of post – episiotomy pain in experimental and control groups, With Numeric Rating Scale cool gel packs were more effective in reducing post-episiotomy pain at 0 min and 30 min of time in experimental group as compared to analgesics in control group this mean difference was highly significant at p value<0.001. But at 60 min of time both analgesics and cool gel packs were equally effective.
12. On Comparison of mean difference of post – episiotomy pain in experimental and control groups, With Behavioral Rating Scale cool gel packs were more effective in reducing post-episiotomy pain at 0 min, 30 min and at 60 min this mean difference was significant at p value<0.05.
13. No association of post-episiotomy pain with age, parity, duration of 2nd stage of labor, sex of the child was found in the study.

CONCLUSION:

1. The findings of present study revealed that most of study subjects experienced mild to moderate level of post-episiotomy pain. Cool gel packs help in reduction of post-episiotomy pain in experimental group at 0, 30 and 60 min which were found to be statistically significant. With NRS Cool gel packs were more effective in reducing post-episiotomy pain at 0 min and 30 min of time in experimental group as compared to analgesics in control group but at 60 min of time both analgesics and cool gel packs were equally effective. With BRS Cool gel packs were more effective in reducing post-episiotomy pain at 0 min, 30 min and at 60 min when Behavioral Rating Scale was used. No association of post-episiotomy pain with age, parity, duration of 2nd stage of labor, sex of the child was found in the study.

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