

## Effect of Cold–Gel Packing on Episiotomy Pain among Postnatal Mothers

Maha S Shehta (1) Nadia M. Fahmy (2) Soad A. Ramadan (3) Somaya O. Abd Almeniem(3)

(1) Technical Nursing Institute - Benha University , (2) Maternal and Newborn Health Nursing - Faculty of Nursing - Ain Shams University, (3) Maternal and Newborn Health Nursing-Faculty of Nursing-Benha University

### Abstract

**The aim of this study:** was to evaluate the effect of using cold-gel packing on episiotomy pain among postnatal mothers. **The Design:** Quasi-experimental design was used to conduct the study. **Setting:** The study was conducted at the postpartum unit of obstetrics and gynecology department in Benha University Hospital. **Sample:** A simple random sample was comprised of 104 postnatal mothers (52 study group and 52 control group) who had an episiotomy recruited in this study. **Tools of data collection:** Three main tools were used: structured interview questionnaire, Visual analogue scale (VAS) & follow up sheets. **Results:** the present study revealed that women in the study group reported significantly lower level of pain than the control group immediate post and follow up application of cold gel pack than pretest ( $p < 0.001$ ). **Conclusion:** The study concluded that, episiotomy pain for study group (cold gel pack) was relieved better than control group (Routine care). **Recommendations:** Increase awareness of maternity nurses to apply a cold gel pack on episiotomy incision immediately postpartum for all women with episiotomy to enhance relief of episiotomy pain, Cold gel pack should be available in the postpartum unit for mothers to use immediately after birth.

**Key words:** Cold gel pack, Episiotomy, Perineal pain, Postnatal mothers

### Introduction

Perineum cut (episiotomy) during labor to dilated vaginal area has advantages such as mother and baby outcomes. It was considered a habitual procedure and was practiced generally by midwives in the UK from 1967 (Gibbon, 2012). According to latest data based on 2007 hospital procedures, episiotomy is performed during approximately 10% of births in the United States. The episiotomy rate has steadily decreased over the past years from 54% in

1992, to 33% in 2000, to 23% in 2004, and 10% in 2007, the latest year for which these data are available (Simpson & Creahan, 2014).

During the first days postpartum greatest mothers have the intensity of the discomfort result from episiotomy, so commonest complication of episiotomy among mothers was perineal discomfort (Inyang-Etoh & Umoiyoho, 2012).

They cannot sit properly and find difficult in feeding their baby. Perineal pain

after labor, dyspareunia, blood volume decrease, anal sphincter laceration, rectal injury and anal incontinence increase resulted from episiotomy (**Thacker &Banta, 2010**).

Cold application is a simple and common method used to relieve pain. It is safe, effective, low - cost alternative, a Cold pack gives immediate pain relief. Ice and cold packs reduces skin temperature by 10°C and 15°C within 15 minutes. It slows bacterial growth, decrease inflammation and pain by numbing the area, slowing the pain impulses and increasing pain threshold (**Geetha & Shanmugam, 2015**).

Nurses should provide women during pregnancy with essential technique to avoid or decrease risk of episiotomy scare, so they should advise mothers to make perineum massage in the last months of pregnancy to help the muscle more elastic and permitting muscles to extend without harm during the final stage of delivery. Several studies showed that perineal massage, undertaken by the women for 2 times/ per week for 37 weeks, reduced mainly episiotomy and perineal tear (**Backmann &Stock, 2012**).

The nurse plays important role in postpartum perineal discomfort after episiotomy including ongoing discomfort assessment, observing the effect of treatment and instruct mothers about several practices that can relieve some of the pain as a cold gel pack to the perineal area to reduce swelling and discomfort (**Simpson & Creahan, 2014**).

### **Significance of the study**

---

According to the Dictionary of Drug Administration in Nursing, pharmacological methods may be provided through the use of non-steroidal anti-inflammatory agents, paracetamol and or codeine delivered by the oral or rectal route, For non-pharmacological methods use of cold packs, hot compresses, and sitz-baths may be helpful. Recently, new non-drug methods such as cold gel pack and

transcutaneous electrical nerve stimulation (TENS). InEgypt, especially at Benha University Hospital 94% of vaginal birth had episiotomy in 2015, while in 2016, 93% of vaginal birth had an episiotomy and suffer from episiotomy pain(**Benha University Hospital StatisticalDepartment, 2016**).

### **Aim of The Study**

---

Aim of The study is to evaluate the effect of cold-gel packing on episiotomy pain among postnatal mothers.

### **Research Hypothesis**

There will be positive improvement of episiotomy pain after using cold-gel packing among postnatal mothers than those who don't using cold-gel packing.

### **Subjects And Method**

#### **1- Technical design:**

##### **A) Study design:**

Quasi- experimental design was used to fulfill the aim of this study.

##### **B) Setting of the study:**

The study was conducted in the postpartum unit at Obstetrics and Gynecology Department at Benha University Hospital located in Benha city.

##### **C) Sampling:**

###### **a) Type of sample:**

A simple random sample of 104 postnatal mothers who had an episiotomy recruited in this study.The sample contains the study group (52) and the control group (52) who met the criteria for inclusion in the sample.

**b) Sample size:**

This sample size was calculated based on the flow rate of women at the studied setting for a year (2014-2015); the flow rate was 1045 women. The sample size was 10% of the total women (104) who had an episiotomy recruited in this study.

**c) Sample criteria:**

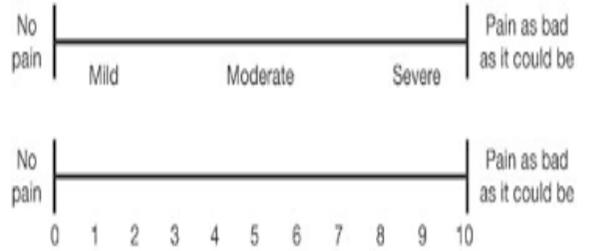
The postnatal mothers met the following criteria; age 18 to 38 years, the entire sample normal vaginally delivered with episiotomy, no immediate postnatal complication as a shock and postpartum hemorrhage, and without any medical diseases.

**Tools for data collection;**

Three tools were used for data collecting.

**Tool (I) An interviewing questionnaire sheet** constructed by the researcher after reviewing a related literature (Ibrahim, 2006&Abo Elnein, 2015) under guidance of supervisions, it was written in Arabic language in the form of socio-demographic data, age, occupation, level of education, residence, previous obstetric history and present obstetric history.

**Tool (II) Visual analogue scale (VAS)** it is a mean for evaluating degree of perineal pain after episiotomy which modified by Kortam (1986) and used by Lafoy and Gender (1989) to evaluate the level of perineal pain it consists of 10 cm horizontal line the right end is marked (0) which indicates no pain the left end is marked (10) which indicate intolerable pain. The scoring of this scale will consist of the following grades.



**Scoring**

No pain its grade 0

Mild pain (pricking, pinching and aching) 1 to 3.5

Moderate pain (pressing, cramping, sharp and burning) its grads ranged from 4.5 to 7.5

Sever pain (cutting, killing and suffocating) its grades ranged from 8.5 to 10.

**Tool (III) Follow up sheet** using by the researcher to evaluate the episiotomy pain in the second day postpartum (one time follow up) which includes questions related to line of treatment, times of using comfort measures, number of used method per day caring of the perineum, the ability of mothers to sit, moves and care of her newborn and visual analog scale score.

**Ethical consideration;**

Ethical aspect should be considered before starting the study as the following:

-Each woman was informed about the purpose and benefits of the study at the beginning of interview and time throughout the study.

-An oral consent was obtained from each woman before starting data collection.

- Confidentiality was ensured throughout the study process, where personal data were not disclosed and the women were

assured that all data was used only for research purpose.

-Each woman is informed that, Freedom to from participation is voluntary and she withdraw will not affect her care in the study at any time.

## **II- Operating design:**

### **(1) Preparatory phase:**

A reviewing of national and international relevant literature related to the effect of cold gel packing on episiotomy pain, by reviewing national and international books, journals, periodicals and computer search was done to develop the study tools and contents.

#### **Tools content validity:**

Tools were submitted to a panel of five experts in the obstetrics and gynecology nursing field to test the content validity. Modifications were carried out according to their judgment on the clarity of sentences and appropriateness of content.

#### **Tools reliability:**

Reliability was done by Cronbach Alpha coefficient test which revealed that each of the tool consisted of relatively homogenous items as indicated by the high reliability, internal consistency of VAS=0.89, values equal or greater than 0.90 considered satisfactory (cronbach,1951).

### **(2) Pilot study:**

Pilot study was done on (10% of the total study sample) 10 of postnatal mothers who met the criteria of selection were recruited for the study for the purpose of testing the study tools, validity, reliability and applicability of the study tools as well as the timing needed for data collection. Piloting indicated that the tools of data collection were feasible, objective and clear

for mothers after modifications were done in the form of adding or missing of some questions. Mothers involved in the pilot were excluded from the study.

### **(3) Field work:**

After obtaining an official permission from the director of the Benha university hospital and agreement of the chairman of obstetric department, data were collected through a period of nearly nine months (beginning from March to the end of November 2016).

The researcher visited the setting of the study three days weekly from (8 A.M. To 2 P.M.) ,and introduced herself to explain the aim of the study to the postnatal mothers immediately after delivery. Researcher sample contains of the study group and the control group who met the criteria for inclusion in the sample.

All recruited mothers were informed that participation was voluntary and the right of accepting or refusing the study. For all recruited mothers the study was conducted through interviewing woman, assessment of pain intensity by visual analogue scale, and follow-up sheet for further assessment of pain intensity in 2<sup>nd</sup> day.

#### **Interviewing**

The first tool of data collection was interviewing questionnaire. The researcher introduced herself to the participating mothers and obtained her approval to participate in the study. The researcher collected socio –demographic data related to age, occupation, previous obstetric history and present obstetric history. Each participant was asked the questions in simple Arabic language. The time consumed to answer all questions varied from 10- 15 minutes. The researcher asked the question and recorded mothers answer.

### **Assessment**

The researcher examined mothers with normal vaginally delivery with episiotomy incision about, degree of episiotomy pain at the postpartum unit. The sample divided into (study group 52 mothers) and (control group 52 mothers). Each participant in the sample (both groups) was evaluated by the researcher through using visual analogue scale to assess pain intensity in perineum (pre – test). By the end of initial assessment the researcher scheduled time of the home visit at second day postpartum. Each home visit period was 20 minutes for follow up. Researcher presented for both groups instructions about perineal care technique, observation of perineal area and warning signs of infection and also the immediate care for women after episiotomy was provided by the investigator.

### **Implementation**

For the study group, mothers were instructed to clean perineum from front to back (Instruct the mother to frequently wash hands), remove soiled pad and discard it in waste container, perform routine care , dry the perineal area with dry tissue from front to back, and then discard it, then ask mother about degree of perineal pain (pre application of cold gel pack), ), then apply cold gel pack for 20 minutes immediately after delivery, instructed woman to put cold gel pack against the sutures line of episiotomy and try to keep her knee more flexed, repeated this after 2 hours from delivery, mother redemonstrated cold gel pack at the same manner in front of the researcher to insure that mothers will apply it correct after 4 hours from delivery and instruct mothers to perform procedure when has pain, assess perineal pain after each procedure (post application of cold gel pack).

For the control group, mothers were instructed to clean the perineum as the same instruction to study group (apply routine care) and assess pain at the same time of

observation of the study group (after birth, after 2hours from birth and after 4hours from birth).

### **Follow up**

The researcher visited mothers(study& control group) according to time schedule of home visit (one time), at second day of postpartum to evaluate perineal pain score by using follow up sheet for both group, to assess the degree of pain, also assess mother ability to sit, move and care for her newborn, duration and times of used methods and assess mother about perform perineal care before use methods.

### **III) Administrative design:**

An official letter from the dean of faculty of nursing Benha University delivered to the director of Benha university hospital with a full explanation about the aim of the study.

### **IV) Statistical design:**

The collected data were coded, organized, analyzed and tabulated using a computer. Presentation of data into table and graphs were carried out according to types of variables by using the statistical package for the social science (SPSS) version 20. Descriptive statistics were used to calculate percentages, frequencies, median& mean and standard deviation for the two groups. Inferential statistics (Parametric and non-Parametric) were used to draw conclusions from the study. Chi square test (X<sup>2</sup>and T-test) was used to estimate the statistical significant differences between the two groups. A significant P-value was considered when P was less than (0.05) and it was considered highly significant when P- value was less than or equal (0.01).

### **Limitation of the study:**

1) High budget when implementation study because given a cold gel pack to every

**Effect of Cold-Gel Packing on Episiotomy Pain among Postnatal Mothers**

---

mother (study group) and not available in hospital.

not reach to home mother correctly & quickly because many mothers living far away from the hospital.

2) The researcher faced some difficulties to follow up some mothers, e.g.

**Results:**

---

**Table (1):** Frequency distribution of studied sample regarding socio demographic characteristics (n=104).

Characteristics	Study (N=52)		Control(N=52)		x <sup>2</sup>	p-value
	No	%	No	%		
<b>Age in years</b>						
<25	27	51.9	24	46.2	0.48	0.78
25- 30	19	36.5	20	38.5		N.S
>30	6	11.5	8	15.4		
<b>x± SD</b>	24.82±3.75		25.09±4.00			
<b>Level of education</b>						
Read and write	3	5.8	2	3.8	0.50	0.91
Preparatory	10	19.2	12	23.1		N.S
Secondary	21	40.4	19	36.5		
University	18	34.6	19	36.5		
<b>Occupation</b>						
Working	17	32.7	18	34.6	0.04	0.83
Housewife	35	67.3	34	65.4		N.S
<b>Residence</b>						
Urban	7	13.5	9	17.3	0.29	0.58
Rural	45	86.5	43	82.7		N.S

**Table (1):** Clarifies that 51.9% of the study group were in age < 25 years with a mean age ±SD (24.82±3.75) years. And46.2%of control group were in age < 25 with a mean age ±SD (25.09±4.00) years. Regarding degree of education, it was clear that both study group and control group40.4 % &36.5% were secondary education. According to occupation of the studied sample, both study &control group 67.3% & 65.4%were housewives. both study &control group 86.5% & 82.7% lived in rural area. There was no statistical significant difference between study and control group regarding socio demographic characteristics.

**Table (2): Frequency distribution of studied sample regarding obstetric history (n= 104)**

Variable	Study (N=52)		Control (N=52)			p-value
	N0	%	No	%	x <sup>2</sup>	
<b>Parity</b>						
Primipara	22	42.3	23	44.2	0.59	0.74
Para 1	19	36.5	21	40.4		
Para 2	11	21.2	8	15.4		
<b>Previous episiotomy</b>						
Yes	30	57.6	29	55.8	0.03	0.84
No	22	42.3	23	44.2		

**Table (2):** Shows that, 42.3% were primipara and 57.6% had previous episiotomy of study group. It was clear that, 44.2% were primipara and 55.8% had previous episiotomy of control group.

**Table (3): Frequency distribution of studied sample regarding current pregnancy (n=104)**

Variable	Study (N=52)		Control(N=52)		x <sup>2</sup>	p-value
	No	%	No	%		
<b>Antenatal care</b>						
Yes	50	96.2	49	94.2	0.21	0.64
No	2	3.8	3	5.8		
<b>Setting of antenatal care</b>						
Private clinic	36	72.0	18	36.7	0.17	0.67
MCH center	14	28.0	31	63.3		
<b>Information about pelvic exercises &amp; perineal massage</b>						
No	52	100.0	52	100.0		
<b>Information about the episiotomy care</b>						
Yes	30	57.6	29	55.8	0.03	0.84
No	22	42.4	23	44.2		
<b>Antenatal immunization (tetanus)</b>						
Yes	52	100.0	52	100.0		

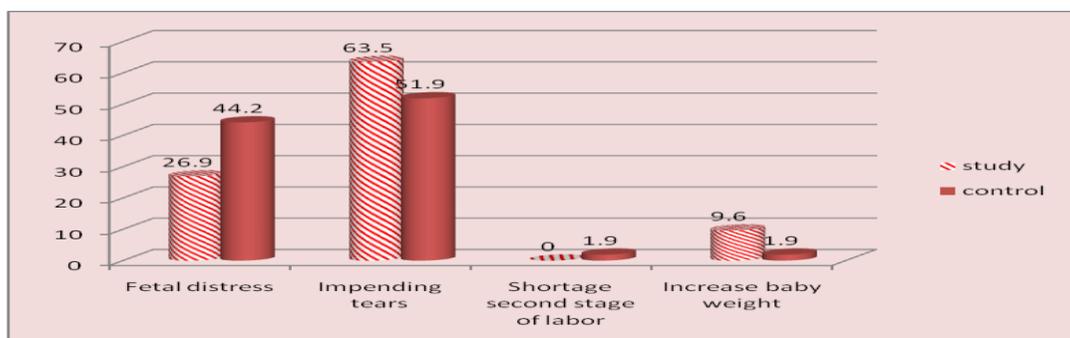
**Table (3):** Represents that, both study and control group were having antenatal care 96.2% ,94.2% and immunization 100%, 72.0% of study group receive antenatal care in private clinic and 63.3% of control group receive antenatal care in MCH center. As regards information about pelvic exercises & perineal massage, both study and control group didn't have information. And information of women regards episiotomy care more than half in both groups have information.

**Table (4): Frequency distribution of studied sample regarding current labor (n=104)**

Variable	Study (N=52)		Control(N=52)		x2	p-value
	No	%	No	%		
<b>Duration of second stage of labor (in hours)</b>						
<1 hour	35	67.3	39	75.0	0.75	0.38
1-2hour	17	32.7	13	25.0		
<b>Type of episiotomy</b>						
Medio-lateral	52	100.0	52	100.0		

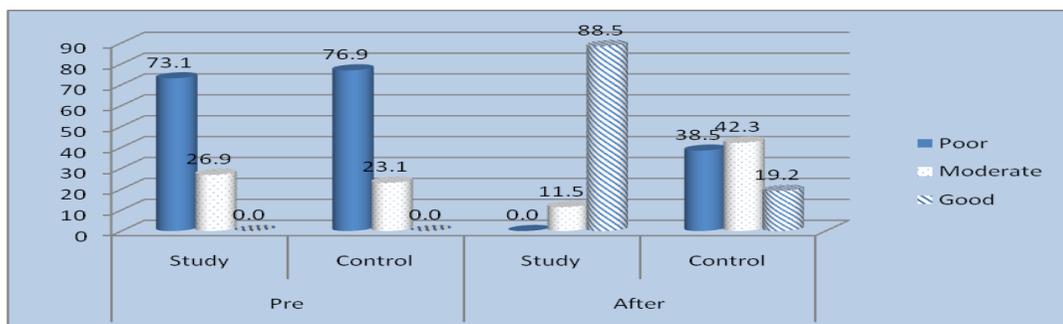
**Table (4):** Shows that, 67.3% of study group and 75% of control group have <1hr duration of second stage of labor. 32.7% of study group and 25 % of control group have 1-2 hr duration of second stage of labor. According to the type of episiotomy both study and control group had medio-lateral episiotomy 100%.

**Figure (1): Frequency distribution of studied sample regarding percentage of reasons for performing episiotomy**



**Figure (1):** Shows all both groups have more than half (63.5% & 51.9%) in impending tears related to percentage of reasons for performing episiotomy.

**Figure (2): Frequency distribution regarding ability of the mother to sit and move before and after used methods of studied sample.**



**Figure (2):** shows ability of the mother to sit and move before used methods of studied sample are similarity in both group, in study group 73.1%, but in control group 76.3% have poor condition, There was no statistical significant difference between study and control group before intervention. But after intervention ability of sitting, move and feed baby more than two third 88.5% of study group is good, but less than quarter 19.2% of control group in good condition. There were highly statistically significant difference between study and control group after intervention.

**Table (5):** Frequency distribution of studied sample regarding degree of pain (n=104)

Variable	Study(N=52)		Control(N=52)		x <sup>2</sup>	p-value
	No	%	No	%		
<b>Pain level (pre- test)</b>						
Moderate pain	22	42.3	24	46.2	0.15	0.69
Severe pain	30	57.7	28	53.8		
Median	3		3			
<b>Immediate after birth (post- test)</b>						
Mild pain	20	38.5	2	3.8	54.90	0.000**
Moderate pain	28	53.8	9	17.3		
Severe pain	4	7.7	41	78.8		
Median	3		4			
<b>After 2hr from birth (post- test)</b>						
Mild pain	41	78.8	3	5.8	61.89	0.000**
Moderate pain	11	21.2	26	50.0		
Severe pain	0	0.0	23	44.2		
Median	2		3			
<b>After 4hr from birth (post- test)</b>						
No pain	26	50.0	3	5.8	69.11	0.000**
Mild pain	24	46.2	5	9.6		
Moderate pain	2	3.8	36	69.2		
Severe pain	0	0.0	8	15.4		
Median	1.5		3			
<b>Pain level(2<sup>nd</sup> day)</b>						
No pain	27	51.9	4	7.7	44.37	0.000**
Mild pain	23	44.2	15	28.8		
Moderate pain	2	3.8	26	50.0		
Severe pain	0	0.0	7	13.5		
Median	2		3			

\*\*Highly significance at p=0.000

**Table (5):** Shows that, of both study group and control group 57.7% & 53.8% have severe pain (pre –test). Also, 53.8% of study group have moderate pain, but the control group 78.8% were severe pain immediately after birth. It was clear that. Also, the study group has no pain 50%, but the control group 69.2% were moderate pain after 4hr from birth. . Then also, 51.9% of the study group have no pain, but 50.0 % of control group have moderate pain in the second day.

**Table (6): Relation between age and level of pain of studied sample (N=104)**

Variable	<25				25-30				>30			
	Study		Control		Study		Control		Study		Control	
	No	%	No	%	No	%	No	%	No	%	No	%
<b>Pain level (pre- test)</b>												
Moderate	14	51.9	12	50.0	12	63.2	12	60.0	4	66.7	4	50.0
Severe	13	48.1	12	50.0	7	36.8	8	40.0	2	33.3	4	50.0
	x <sup>2</sup> =0.017		p>0.05		x <sup>2</sup> =0.041		p>0.05		x <sup>2</sup> =0.389		p>0.05	
<b>Immediate after birth</b>												
Mild	9	33.3	0	0.0	8	42.1	1	5.0	3	50.0	1	12.5
Moderate	16	59.3	4	16.7	10	52.6	3	15.0	2	33.3	2	25.0
Severe	2	7.4	20	83.3	1	5.3	16	80.0	1	16.7	5	62.5
	x <sup>2</sup> =30.85		p<0.000**		x <sup>2</sup> =22.43		p<0.000		x <sup>2</sup> =3.45		P<0.05*	
<b>After 2hr</b>												
Mild	22	81.5	1	4.2	15	78.9	1	5.0	4	66.7	1	12.5
Moderate	5	18.5	11	45.8	4	21.1	11	55.0	2	33.3	4	50.0
Severe	0	0.0	12	50.0	0	0.0	8	40.0	0	0.0	3	37.5
	x <sup>2</sup> =33.36		p<0.000**		x <sup>2</sup> =23.50		p<0.000		x <sup>2</sup> =5.28		P<0.05*	
<b>After 4hr</b>												
No pain	13	48.1	1	4.2	10	52.6	1	5.0	3	50.0	1	12.5
Mild	14	51.9	2	8.3	8	42.1	3	15.0	2	33.3	0	0.0
Moderate	0	0.0	17	70.8	1	5.3	12	60.0	1	16.7	7	87.5
Severe	0	0.0	4	16.7	0	0.0	4	20.0	0	0.0	0	0.0
	x <sup>2</sup> =40.24		P<0.000**		x <sup>2</sup> =22.93		P<0.000		x <sup>2</sup> =7.36		P<0.05*	
<b>Pain level (Second day)</b>												
No pain	9	33.3	2	8.3	11	57.9	0	0.0	3	50.0	2	25.0
Mild	18	66.7	7	29.2	7	36.8	7	35.0	2	33.3	1	12.5
Moderate	0	0.0	12	50.0	1	5.3	10	50.0	1	16.7	4	50.0
Severe	0	0.0	3	12.5	0	0.0	3	15.0	0	0.0	1	12.5
	X <sup>2</sup> =24.20		P<0.000**		x <sup>2</sup> =21.35		P<0.000		x <sup>2</sup> =3.11		P<0.05*	

\*Statistical significance at p<0.05

\*\*Highly statistical significance at p <0.000

**Table (6):** shows there are highly statistical significant differences between study and control group in age <25 years and age 25-30 years (p<0.000), immediate after birth, after 2hr, after 4hr from birth and in second day (post- test), also clear that, statistical significant difference between study and control group in age >30 years (p<0.05), immediate after birth, after 2hr, after 4 hr from birth in second day (post-test), but in pre-test in different age no statistical significant difference between study and control group (p>0.05).

**Table (7): Frequency distribution of relation between number of delivery and level of pain (n=104)**

Variable	Primipara				Para 1				Para2			
	Study		Control		Study		Control		Study		Control	
	No	%	No	%	No	%	No	%	No	%	No	%
<b>Pain Level (pre-test)</b>												
Moderate pain	14	73.7	10	47.6	9	40.9	14	60.9	7	63.6	4	50.0
Severe pain	5	26.3	11	52.4	13	59.1	9	39.1	4	36.4	4	50.0
	x <sup>2</sup> =2.82		p>0.05		x <sup>2</sup> =1.79		p>0.05		x <sup>2</sup> =0.35		p>0.05	
<b>Immediate after birth</b>												
Mild pain	10	52.6	0	0.0	8	36.4	2	8.7	2	18.2	0	0.0
Moderate pain	5	26.3	4	19.0	11	50.0	3	13.0	8	72.7	2	25.0
Severe pain	4	21.1	17	81.0	3	13.6	18	78.3	1	9.1	6	75.0
	x <sup>2</sup> =28.89		P<0.000**		x <sup>2</sup> =18.87		P<0.000		x <sup>2</sup> =8.9		P<0.012*	
<b>After 2hr</b>												
Mild pain	15	78.9	1	4.8	20	90.9	2	8.7	6	54.5	0	0.0
Moderate pain	4	21.1	9	42.9	2	9.1	11	47.8	5	45.5	6	75.0
Severe pain	0	0.0	11	52.4	0	0.0	10	43.5	0	0.0	2	25.0
	x <sup>2</sup> =25.13		P<0.000**		x <sup>2</sup> =30.95		P<0.000		x <sup>2</sup> =7.81		P<0.02*	
<b>After 4hr</b>												
No pain	10	52.6	1	4.8	12	54.5	2	8.7	4	36.4	0	0.0
Mild pain	9	47.4	2	9.5	9	40.9	1	4.3	6	54.5	2	25.0
Moderate pain	0	0.0	14	66.7	1	4.5	17	73.9	1	9.1	5	62.5
Severe pain	0	0.0	4	19.0	0	0.0	3	13.0	0	0.0	1	12.5
	x <sup>2</sup> =29.79		P<0.000**		x <sup>2</sup> =30.75		P<0.000		x <sup>2</sup> =9.42		P<0.024*	
<b>Pain level Second day</b>												
No pain	13	68.4	2	9.5	8	36.4	2	8.7	2	18.2	0	0.0
Mild pain	6	31.6	9	42.9	13	59.1	3	13.0	8	72.7	3	37.5
Moderate pain	0	0.0	7	33.3	1	4.5	15	65.2	1	9.1	4	50.0
Severe pain	0	0.0	3	14.2	0	0.0	3	13.0	0	0.0	1	12.5
	x <sup>2</sup> =18.61		P<0.000**		x <sup>2</sup> =25.09		P<0.000**		x <sup>2</sup> =6.76		P<0.05*	

\*Statistical significance at p<0.01    \*\*Highly statistical significance at p ≤0.000

**Table (7):** show that, more than half 52.6 % of study group have mild pain but the control group 81% were sever pain immediate after birth related to primipara, but half 50 % of study group have moderate pain but the control group 78.3% were sever pain immediate after birth related to para 1, also more than two third 72.7 % of study group have moderate pain but the control group 81% were sever pain immediate after birth related to primipara. It was clear that, less than half 47.1% of study group have mild pain but the control group 75% were sever pain immediate after birth related to para 2. There are highly statistical significant differences between study and control group in level of pain and primipara and para 1 (p<0.000), immediate after birth, after 2hr, after 4hr from birth and in second day (post -test). Also found statistical significant differences between study and control group in level of pain para 2 (p<0.05), immediate after birth, after 2hr, after 4hr from birth and in second day (post -test).

## Discussion

---

Episiotomy is a surgical of the perineum made to increase the vulva outlet during childbirth, benefits of episiotomy that speed up the birth, prevent vaginal tears, protect against incontinence, protect against pelvic floor relaxation and heals easier than tears. First description of Episiotomy was in 1742 (**George, 2013**).

Most women are keen to give birth without perineal tears, cuts and stitches, as these often because pain and discomfort afterwards, this can impact negatively on sexual functioning. Perineal tears and episiotomies are very common during vaginal births, particularly among women having their first baby (**Beckmann & Stock, 2013**).

Applying cold gel pack immediately after episiotomy reduces inflammation, secondary hypoxia, production of cellular debris, edema, hematoma development, metabolism, spasticity, and nerve transmissions. Moreover, it increases the release of endorphins and stimulates the repair process (**Morais, et al., 2016**).

The aim of the study was to evaluate the effect of using cold-gel packing for relieving episiotomy pain among postnatal mothers. Result of this study supported the hypothesis.

The episiotomy and maternal age have previously not been clearly defined. Most of the previous studies have failed to show a connection between episiotomy pain and maternal age (**Gerdin, et al., 2007**). In addition to, the influence of routine episiotomy on outcomes, have shown that older maternal age was a strong predictor of perineal pain (**Francisco, et al., 2010**).

The present study revealed that women's age of study group with a mean age  $\pm$  SD (24.82 $\pm$ 3.75), and women's age of control group with a mean age  $\pm$ SD

(25.09 $\pm$ 4.00) respectively. There homogeneity between two groups regarding the age. This may be due to that the studied participants were selected with simple random sample in the range of (18- 38 years). There are highly statistical significant differences between study and control group in age <25 years and age 25-30 years ( $p<0.000$ ) post- test. This may be due to younger maternity age was a strong sensation to perineal pain because fear from new situation and not expected what happen.

And found statistical significant difference between study and control group in age >30-38 years ( $p<0.05$ ). This may be due to increased fragility of muscles and decreased elasticity of connective tissue with increasing age. This result goes in line with **Kargar, et al., (2016)**, who conducted a comparison of the effects of lidocaine prilocaine cream (EMLA) and lidocaine injection on reduction of perineal pain during perineum repair in normal vaginal delivery, in Shohadae Tajrish Hospital, and they reported that the range of women age were 17-37 years and mean age SD 24  $\pm$  4 years, respectively.

Also this result is nearly to **Karacam, et al., (2013)**, who evaluated the prevalence of episiotomy in primiparas, related conditions, and effects of episiotomy on suture materials used, perineal pain, wound healing 3 weeks postpartum, in turkey, and they found that the mean SD of the women age (23.34  $\pm$  3.67 years). And supported by **Alayande, et al., (2012)**, who conducted a relative frequency and predictoros of episiotomy in Ogbomosho- Nigeria, and they reported that, the overwhelming majority of the subjects more than two third were in the age group (19-35years). There are highly statistical significant differences between study and control group. This may be due to this range of maternal age are low risk group for age and better to selected in the sample.

This finding disagreed with **Ahmed, (2014)**, who evaluated the midwives clinical

reasons for performing episiotomies in the Kurdistan Region –Iraq, and researcher stated that, the mean age SD of the study sample was  $(37.79 \pm 7.01)$  years). This may be due to those women are selected with simple random sample with age range (23-57 years). Moreover, **Mathias, et al.,(2015)**, who measuring perineal pain in the immediate vaginal postpartum period and the possible association with its risk factors, in the city of Petrolina and Juazeiro, and they found regard to age, 147 mothers with median age of 29 years, varying from (14 to 49 years) were evaluated. And pain present in women up to 21 years of age less than half and in women above 21 years of age more than half. This due to younger maternity age was relief pain easier than old age because old mothers not able to tolerance or reduce level of pain and become exhausted.

Adults with higher levels of education are less likely to engage in risky problem and are more likely to have healthy behaviors. Lower levels of maternal education were associated with higher maternal morbidity and mortality even amongst women that able to access facilities providing antenatal and intrapartum care (**Karlsen, et al, 2011**).

Regarding the level of education the finding of the present study indicated that less than half of all both group were secondary education, this result agreed with **Mohamed &El Nagger, (2012)**, who conducted a study about the effect of self perineal care instructions on episiotomy pain and wound healing of postpartum women in El- Minia- Egypt, and results showed that more than three quarters of women from both groups were educated women. This may be reflected upon women cooperation during accepting and practicing self perineal care in the study.

The current study revealed that there was homogeneity between the two groups regarding the occupation. More than half of both study &control group were housewives. The result agreed with **Mohamed & El**

**Nagger, (2012)**, who reported that approximately two thirds of the experimental groups and control group were housewives. This may be due priority to most women lived in El Minia not related to working but like to care for children.

This finding agreed with **Olewi &Ali, (2010)**, who evaluated the effectiveness of instruction- oriented intervention for primipara women upon episiotomy and self perineal care at Al-Balaadi hospital in Iraq. Who demonstrated that both groups were more than three quarter were housewives. The findings had emerged due to the nature of the culture in which these women had lived in house. The study indicated that more than two third of both study &control group lived in rural area. The previous findings nearly similar to the result of **Rasouli, et al., (2016)**, who conducted a study about prevalence and factors associated with episiotomy in Shahroud city, northeast of Iran. And they mention the majority of participants more than two third in rural areas and less than half lived in the urban.

This finding disagreed with **Olewi &Ali, (2010)**, who stated that more than two third of all both group were from urban area. This may be due to most of women for both groups in this study live in the nucleus family nearly to facilitate of living in (urban area).

Perineal cut is a common complication of childbirth in developed countries, with an overall rate of 95 percent for primiparas in the United Kingdom, episiotomy rate vary with regard parity so, primipara rate higher than multipara (**Doumouchsis, 2017**).

The current study revealed that the less than half of both of study group and control group were primipara. There are highly statistical significant differences between study and control group in level of pain and primipara and para1 ( $p<0.000$ ) post -test. This may be because nulliparous women generally are younger than multiparousso, pain level easy to relief with cold gel pack.

Also found statistical significant differences between study and control group in level of pain and para 2 ( $p < 0.05$ ), this may be due to multipara difficult to relief pain than primipara because the skin and perineal muscles become weak and exposure to episiotomy more than once.

This result agreed with **Chigbu, et al., (2008)**, studied the factors influencing the use of episiotomy during vaginal delivery in south eastern Nigeria, who illustrated that less than half of parturient were primipara. This may be due to episiotomies are very common during vaginal births, particularly among women having their first baby.

This finding was disagree with **Francisco, et al., (2013)**, who Evaluation and treatment of perineal pain in vaginal Postpartum, who showed greater perineal pain probability among primiparous than multiparous women on the first and seventh day and in the sixth week after delivery. This may be due to primiparous face new stressful event (episiotomy pain) and not experience about this condition.

The severity of perineal pain experienced may be influenced by factors such as breastfeeding, use of epidural analgesia, length of the second stage of labor, frequency episiotomy, degree of perineal trauma, suturing materials, and type of delivery (**Watanatitan&Armarrtasn,2010**)

The finding of present study regarding history of previous episiotomy revealed that more than half of study group had previous episiotomy and less than half of control group had previous episiotomy. There are highly statistical significant differences between study and control group in level of pain and recurrent episiotomy (current and first episiotomy) ( $p < 0.000$ ).

These results agree with **Chang, et al., (2010)** who Comparison of the effects of episiotomy and no episiotomy on pain, urinary incontinence, and sexual function 3

months postpartum: a prospective follow-up study, who report according to the results, women who delivered without an episiotomy had significantly lower perineal pain scores at weeks 1, 2 and 6 postpartum compared to women who had an episiotomy ( $p = 0.0065$ ). Women in the no-episiotomy group had significantly lower non-localized pain scores at week 2 postpartum compared to women in the episiotomy group ( $p = 0.0438$ ). This may be due to mothers who delivered without episiotomy and perineum intact that reduces level of perineal pain gradually or coping with perineal pain early than mother have previous episiotomy.

Also this result agree with **Ahmed & Mohamed, (2015)**, who assess routine episiotomy for vaginal birth: Should it be ignored?, who summarized result of study the delayed wound healing and severe pain, were significantly increased by high number of previous episiotomy, wound extension and/or hematoma  $p < 0.0001$  and occurrence of postpartum wound infection ( $p < 0.0001$  for both group). Postpartum dyspareunia, urinary and fecal incontinence were affected by multiparity ( $p = 0.012$ ). This may be due to the sample similar to sample in present study in inclusion criteria not fixed on primipara.

This finding disagree with **Owa, et al., (2015)**, who assess factors associated with episiotomy among parturients delivering in a tertiary care center in Nigeria. Who found the condition of the perineum following childbirth; 9.3% of parturient received an episiotomy and more than three quarter had no episiotomy, but there were poor documentation of indications for the episiotomy. This may be due to rate of episiotomy in Nigeria decrease that appears in several study conducted in this country.

The reasons for episiotomy are to prevent damage of the fetus during a face or breech presentation, to prevent perineal damage for mother with rigid perineum, Shorten the duration of labor for fetal distress or maternal complication (**Gibbon, 2012**).

As regarding reasons for performing episiotomy, more than third of study group had episiotomy to prevent Impending tears. Meanwhile, more than half of control group had episiotomy to prevent Impending tears. This finding was near with **Ahmed, (2014)**, who conducted a study about midwives clinical reasons for performing episiotomies in the Kurdistan region, who reported the main clinical reasons by midwives for performing an episiotomy were anticipated perineal tear. This may be due to doctors preferred episiotomy than tear spontaneous that appear some complication.

Persisting perineal pain can inhibit the woman from basic daily activities such as walking, sitting comfortably and passing urine and also negatively impacts on motherhood experiences and the women's ability to bond to and breastfeed the baby (**Morris, et al., 2013**).

Regarding the ability of the mother to sit and move before used methods more than two third of study group and also control group were poor ability to sit & move before used methods in the immediate hours after delivery. This finding agree with **Abo El Enein, (2014)**, who evaluate effect of saline dressing versus cool boiled water on episiotomy wound healing among postnatal mothers, who found in result regard ability to siting and move in both groups more than two thirds had moderate ability for siting at immediate hours after delivery. This may be due to the perineum is very sensitive area, in which there are muscles involved in sitting.

In additional to ability of sit, move and feed your baby in second day, more than two third of study group is good but less than quarter of control group in good condition. There was highly statistical significant difference between study and control group after intervention. This may be due to good effect of cold gel pack in the study group.

This finding was matching with **Navvabi, et al., (2011)**, who evaluated cold

and reduced episiotomy pain interfere with mood and daily activity, in Shiraz- Iran, and they stated that the interference of perineal pain and healing had highly meaningful difference with mood, sitting, babysitting, social activities, urinating, in the tenth day.

Women can experience pain and discomfort related to perineal tear or episiotomy for weeks and even months after delivery. Perineal pain is the most common complaint of mothers after episiotomy (**Francisco, et al., 2013**).

Regarding to level of pain pre- test more than half of both study group and control group have severe pain. There was no significant difference between the study and control group in their pre- test level of pain. This result nearly to **Geetha & Shanmugam, (2014)**, who report both experimental and control group had moderate pain as a pre- test level of pain score. There was no significant difference between the experimental and control group in their pre- test. This may be due to all subject have episiotomy lead to more perineal pain than that caused by perineal tear in the early postpartum period according to some research.

Cryotherapy after childbirth, the length of application and changes in perineal temperature, five-minute application of ice packs was insufficient to decrease the perineal temperature to the recommended levels for relieving pain (**Francisco, et al., 2013**).

Regarding to level of pain immediate after birth post- test, more than half of study group have moderate pain ( $SD = 2.69 \pm 0.61$ ), but the control group more than two third were severe pain ( $SD = 3.75 \pm 0.51$ ). These results disagree with **Yusamran, et al., (2007)**, who conduct study about relief perineal pain after perineorrhaphy by cold gel pack pad: A Randomized Controlled Trial, who report after compression 15 minutes ( $SD = 1.660$ ) in experimental group but ( $SD = 1.680$ ) in control group that no statistically

significant difference between them ( $p > .05$ ). This may be due to not sufficient time to give effect.

In the present study level of pain after 4 h from birth post-test, half of study group have no pain ( $SD=1.53 \pm 0.57$ ) but more than two third of control group were moderate pain ( $SD=2.94 \pm 0.69$ ) after 4hr from birth. There are highly statistical significant differences between study and control group ( $p= 0.000$ ). These results agree with **Sheikhan, et al, (2011)**, who evaluate episiotomy discomforts relief using cold gel pads in primiparaus Iranian women: A Comparative Study, who found pain score after intervention: The mean for the intensity of the pain 4hr after intervention in experimental group was  $3.20 \pm 1.58$  and it was  $4.23 \pm 1.59$  in control group that indicated a significant difference between groups ( $p = 0.014$ ). This may be due to frequency use of cold compress until after 4hr is effective for relief pain.

Perineal pain has been found to be most common and severe on the first day after delivery, with a shift toward less pain with increasing time and persist beyond the postnatal period (**Ahmed, 2015**).

Regard to pain in the second day more than half of study group has mild pain but less than third of control group have mild pain. This finding disagrees with **Noronha (2012)**, who evaluate the more effective and efficient method of caring for postnatal Women: a quasi-experimental, who found the majority of the subjects from the experimental group had complete relief from pain on fifth day 94% mild pain and 6% moderate pain.

### **Conclusion**

---

In the light of the study findings, it was concluded that; episiotomy pain for study group (cold gel pack) was better than control group (Routine care), there was highly statistical significant differences immediately

hours after birth and second day postpartum ( $p < 0.001^{**}$ ).

### **Recommendation**

---

Increase awareness of maternity nurses to apply cold gel pack on episiotomy incision immediately postpartum for all women with episiotomy to enhance relieves of episiotomy pain.

-Cold gel pack should be available in postpartum unit for mothers to use immediately after birth.

- Integrate cold gel pack as a main part of the routine hospital postnatal instructions for the women for its important role in improving the quality of women life in postnatal period.

### **Further studies need to be performed:**

-Maternity nurse should be aware with non –pharmacological pain relief measure and provide antenatal program to mothers to improve knowledge about non – pharmacological method.

### **References**

---

- Ahmed, A.A., & Mohamed, S.H., (2015): Routine episiotomy for vaginal birth: Should it be ignored?, IOSR Journal of Nursing and Health Science (IOSR-JNHS), 4(5), 70-77, Available at: [www.iosrjournals.org](http://www.iosrjournals.org).
- Ahmed, M. H., (2014): Midwives' Clinical Reasons for Performing Episiotomies in the Kurdistan Region, Sultan Qaboos University Medical Journal; 14(3): 369–374.
- Alayande, B.T., Amole, I.O., & OlaOlorun, D.A., (2012): Relative frequency and predictors of episiotomy in Ogbomosho, Nigeria, Internet Journal of Medical Update, 7(2):42-45. Available at: <http://www.akspublication.com/ijmu>

- Beckmann, M.M., & Stock, O.M., (2013): Antenatal perineal massage for reducing perineal trauma, *Cochrane Database of Systematic Reviews*, 4(4),1-51, by JohnWiley & Sons, DOI: 10.1002/14651858.CD005123.pub3
- Benha University Hospital Statisticaldepartment, (2016): The incidence of episiotomy in postpartum unit of obstetrics and gynecology department.
- Chigbu, B., Onwere, S., Aluka, C., Kamanu, C., & Adibe, E., (2008): Factors influencing the use of episiotomy during vaginal delivery in South Eastern Nigeria, *East African Medical Journal*; 85(5):240-3.
- Chang, S.R., Chen, K.H., Lin, H.H., Chao, Y.M, Lai, Y.H., (2011): Comparison of the effects of episiotomy and no episiotomy on pain, urinary incontinence, and sexual function 3 months postpartum: a prospective follow-up study, *International Journal Nursing Study*; 48(4):409-18.
- Doumouchsis, S., K., (2017): *Childbirth Trauma, episiotomy*, 1<sup>st</sup> ed.,chapter 3., Springer- Verlag, London, pp.123-144.
- Francisco, A. A., de Oliveira, S.M.J., Santos, J.O., & Silva, F.M., (2010): Evaluation and treatment of perineal pain in vaginal Postpartum, *Acta Paul Enferm* ,24(1):94-100.
- Francisco, A.A., Oliverira, S.M.J., Leventhal, C.L.& Basco, S.C., (2013): Cryotherapy after childbirth: the length of application and changes in perineal temperature, *SciELO of Brazilian scientific journals*,47(3);554-60.
- Geetha & Shanmugam, R.S., (2015): Effectiveness of Ice Pack Application on the Level of Pain in Episiotomy Wound ; *International Journal of Science and Research (IJSR)* 4(11);1607-1611, Available at: [www.ijsr.net](http://www.ijsr.net) .
- George, (2013): A Comparative study to assess the effectiveness of medicated and non-medicated sitz bath in episiotomy healing on postnatal mothers admitted in selected government hospital-Bangalore, Available at:// <https://ja.scribd.com>.
- Gerdin, E., Sverrisdottir, G., Badi, A., Carlsson, B. and Graf, W., (2007): The role of maternal age and episiotomy in the risk of anal sphincter tears during childbirth, *Australian and New Zealand Journal of Obstetrics and Gynecology*. 47(4); 286–290.
- Gibbon, K., (2012): How to perform an episiotomy, *The Royal College of Midwives. Midwives magazine*, 2(5); Available at: <https://www.rcm.org.uk/news>.
- Inyang- Etoh, E., C. & Umoyioho, A., J., (2012): The practice of episiotomy in a university teaching hospital in Nigeria: How satisfactory? *International Journal of Medicine and Biomedical Research*, 1(1), 68-72.
- Karacam, Z., Ekmen, H., Calisir, H.& Seker, S., (2013): Prevalence of episiotomy in primiparas, related conditions, and effects of episiotomy on suture materials used, perineal pain, wound healing 3 weeks postpartum, in Turkey: A prospective follow-up study, *Iranian Journal of Nursing and Midwifery Research*, 18(3): 237–245.
- Kargar, R., Aghazadeh-Nainie, A.& Khoddami-Vishteh, H.R., (2016): Comparison of the Effects of Lidocaine Prilocaine Cream (EMLA) and Lidocaine Injection on Reduction of Perineal Pain During Perineum Repair in Normal Vaginal Delivery, *Journal of Family & Reproductive Health*; 10(1):21-6.
- Karlsen, S., Say, L., Souza, J., Hogue, C., Calles, D., Gulmezoglu, A.M., & Raine, R., (2011): The relationship between maternal education and mortality among women giving birth in health care institutions: Analysis of the cross sectional WHO Global Survey on Maternal and Perinatal Health; *BMC Public Health*, licensee BioMed Central Ltd.29(11) DOI: 10.1186/1471-2458-11-606.
- Kast, V., Gupta, A., Ladda, R., Kathariya, M., Saluja, H., & Farooqui, A., (2014): Transcutaneous electric nerve stimulation (TENS) in dentistry- A review, *Journal of Clinical and Experimental Dentistry*, 6(5): 562–568.
- Lafoy, J., & Geden, E.A., (1989): Post Episiotomy pain: warm versus cold sitz bath. *JOGNN*,

- September, pp.399-403, Available from: <http://www.ncbi.nlm.nih.gov/pubmed>.
- Mathias, A.E., Pitangui, A.C., Vasconcelos, A.M., Silva, S.S., Rodrigues, P.S. & Dias, T.G., (2015): Perineal pain measurement in the immediate vaginal postpartum period, *Rev Dor. São Paulo*; 16(4):267-71.
- Mohamed, H.E., & El-Nagger, N.S., (2012): Effect of Self Perineal Care Instructions on Episiotomy Pain and Wound Healing of Postpartum Women. *Journal of American Science*; 8(6): 640-50
- Morais, I., Lemos, A., Katz, L., Melo, R.F.L., Maciel, M.M., & Amorim, R.M.M., (2016): Perineal Pain Management with Cryotherapy after Vaginal Delivery: A Randomized Clinical Trial. *Rev Bras Gynecology-Obstetric journal*; 38(7):325-332.
- Morris, A., Berg, M., & Dencker, A., (2013): Professional's skills in assessment of perineal tears after childbirth—A systematic review, *Open Journal of Obstetrics and Gynecology*, 3, 7-15, Available at: <http://www.scirp.org/journal/ojog>.
- Navvabi, R. SH., kerman, S. F., Saroneh, R. M., & Abedian, Z., (2011): Cold and Reduced Episiotomy Pain Interfere with Mood and Daily Activity, *Shiraz E-Medical Journal*, 12,(2):87-90, Available at <http://semj.sums.ac.ir/vol12>
- Olewi, S.S., & Ali, R.M., (2010): Effectiveness of Instruction-oriented Intervention for Primipara Women upon Episiotomy and Self-perineal Care at Ibn Al-Baladi Hospital, *Iraqi Science Journal Nursing*, 23(2).
- Owa, O.O., Eniowo, A.R., & Ilesanmi, O.S., (2015): Factors associated with episiotomy among parturients delivering in a tertiary care center in Nigeria, *International Journal of Research in Medical Sciences*, 3(4):836-840. Available at: [www.msjonline.org](http://www.msjonline.org).
- Rasouli, M., Keramat, A., Khosravi, A., Mohabatpour, Z., (2016): prevalence and Factors Associated With Episiotomy in Shahroud City, Northeast of Iran; *International Journal of Women's Health and Reproduction Sciences* 4(3):125-129.
- Simpson, K.R., & Creahan, P.A., (2014): AWHONN's Perinatal Nursing, Labor and birth, chapter 14, *Wolters Kluwer Health*, 5<sup>th</sup> ed., pp. 379-382.
- Thacker, S.B., & Bantaa, H.D., (2010): Benefits and risks of episiotomy: an interpretative review of the English language literature, *obstetrics - gynecology survey*, 38(6):322-338.
- Watanatitan, J. & Armarttasn, S., (2010): Incidence and Factors Associated with Postpartum Perineal Pain in Primipara, *Thai Journal of Obstetrics and Gynaecology* 17, (9) 139-144.