



Effectiveness Of Betadine Wash Versus Normal Saline Wash On Episiotomy Wound Healing Among Postnatal Mothers Of Selected Hospitals: A Comparative Study.

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Abstract:

Background: The origin of episiotomy is difficult to determine, but one of the first to describe it was a midwife, Sir Fielding Ould. In 1742, in his Treatise of Midwifery in Three Parts, he recommended the procedure for those cases in which the external vaginal opening is so tight that labor is dangerously prolonged. The first report of the procedure in the United States was 110 years later in a journal entitled.¹ **Objectives:** 1. To assess the effectiveness of betadine wash on episiotomy wound healing among postnatal mothers. 2. To assess the effectiveness of normal saline wash on episiotomy wound healing among postnatal mothers. 3. To compare the effectiveness of betadine wash versus normal saline wash on episiotomy wound healing among postnatal mother. 4. To find out the association between level of episiotomy wound healing with selected demographic variables. **Methodology:** The True experimental Pre-test Post test design used for the study. It was conducted on 60 Postnatal Mother by using probability simple Random sampling technique. **Results:** The result revealed that the comparison of post intervention episiotomy wound healing scores of postnatal mothers in Betadine Wash versus Normal Saline Wash. Mean, standard deviation and mean difference values are compared and student's unpaired 't' test is applied at 5% level of significance. The tabulated value for $n=30+30-2$ i.e. 58 degrees of freedom was 2.00. The calculated 't' value i.e. 25.99 are much higher than the tabulated value at 5% level of significance for overall episiotomy wound healing score (REDDA scale) of postnatal mothers which is statistically acceptable level of significance. So betadine wash is moderately effective and normal saline wash was mild effective on episiotomy wound healing. **Conclusion:** it is statistically interpretation Analysis reveals that there is association of episiotomy wound healing with Age (in year), Occupation and Area of residence while none of the other demographic variables were associated with episiotomy healing score. And Betadine Wash versus Normal Saline Wash on episiotomy wound healing among postnatal mothers of selected hospitals was effective. Thus the H1 is accepted.

Index Terms: "Effectiveness ", "Postnatal Mothers", " Episiotomy", " Betadine wash", "Normal saline wash"

I. INTRODUCTION

For the women, pregnancy is a beautiful and exciting journey. Maternity services should support the mother, her child, and her family throughout this process with an eye towards both their short and longterm safety.¹“Series of events that take place in the genital organs in an effort to expel the viable products of conception out of the womb through the vagina into the outer world is called Labor.”²Delivery is the expulsion or extraction of a viable fetus out of the womb. A surgically planned incision on the perineum and the posterior vaginal wall during the second stage of labor is called episiotomy (Perineotomy). The aim of episiotomy is to enlarge the vaginal introitus so as to facilitate easy and safe delivery of the fetus by spontaneous or manipulative and to minimize overstretching and rupture of the perineal muscles and fascia; to reduce the stress and strain on the fetal head. Care of episiotomy would begin immediately after delivery and should include a combination of local wound care and pain management. The care of episiotomy is different from hospital to hospital. Now a day, betadine and Normal saline is widely used in the hospitals for healing of episiotomy wound. It helps to improve epithelialization of skin to prevent infection and promote healing. It is easily available, efficient and cost effective. The application of normal saline is useful in first 24 hours postpartum which reduces inflammatory reaction and oedema. Povidone iodine (Betadine) is a simple and inexpensive antiseptic solution consisting of polyvinylpyrrolidone with water, 1% available iodine; it has bactericidal ability against a large array of pathogens Povidone iodine appears to be active against all microorganisms including Gram-positive and Gram-negative bacteria, spores, cysts, mycobacteria, fungi, viruses and protozoa.⁴

II. BACKGROUND

The origin of episiotomy is difficult to determine, but one of the first to describe it was a midwife, Sir Fielding Ould. In 1742, in his Treatise of Midwifery in Three Parts, he recommended the procedure for those cases in which the external vaginal opening is so tight that labor is dangerously prolonged. The first report of the procedure in the United States was 110 years later in a journal entitled "The Stethoscope and Virginia Medical Gazette". Talia ferro cut a small medio-lateral episiotomy to facilitate delivery in young eclamptic women. For these women, episiotomy was used to facilitate an unusually difficult labor. The use of episiotomy was expanded in 1921, when DeLee published a paper entitled "The Prophylactic Forceps Operation." In this publication, he recommended the use of forceps with a medio-lateral episiotomy, which he believed saved the fetal brain from injury, preserved the integrity of the pelvic floor, and restored the parturient canal to near perfect. DeLee believed labor to be disease producing and therefore to be a "decidedly pathologic process." Historically, physicians have been trained to intervene in disease processes, including protecting the mother from the morbidity of the birthing process. In developing countries such episiotomy is a common procedure to facilitate vaginal delivery. (The World Health Organization 2018) recommends episiotomy rate of 10% for normal deliveries. Although the frequency of performing an episiotomy is decreasing, 30% to 50% of women may still receive episiotomy. There is a paucity of information regarding the frequency of episiotomy and associated factors at a national and regional level.

III. NEED OF THE STUDY

The World Health Organization (WHO) recommends an episiotomy rate of 10% for normal deliveries. Although the frequency of performing is decreasing, 30% to 50% of woman may still receive episiotomy." ⁷ In India the rate of episiotomy was determined as 93.3% in primipara women and as 30.2% in multipara women.⁸ Every day in 2020, almost 800 women died from preventable causes related to pregnancy and childbirth. A maternal death occurred almost every two minutes in 2020. Between 2000 and 2020, the maternal mortality ratio (MMR, number of maternal deaths per 100 000 live births) dropped by about 34% worldwide. Almost 95% of all maternal deaths occurred in low and lower middle-income countries in 2020. Care by skilled health professionals before, during and after childbirth can save the lives of women and newborns.¹⁰ Recently A comparative study was conducted to Assess the effectiveness of Betadine and normal saline on episiotomy wound healing among postnatal mothers, to Compare the level of wound healing in Betadine wash and normal saline, 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. 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. The findings proved that Betadine wash is more effective than normal saline to reduce the wound healing of episiotomy among postnatal mothers.¹²

In the present situation, cost of medical treatment is a major issue influencing the patient and his treatment. So Taking good care of episiotomy stitches during the postpartum recovery it will minimize the risk of infection and can help to promote healing. All these above facts there is a strong need in incorporate the use of betadine and normal saline into nursing practice. Even through the application of normal saline and betadine in an effective method of healing the episiotomy wound but still it is not widely used like other treatments. Hence the researcher is interested to conduct the study to compare the effectiveness of betadine wash versus normal saline wash on episiotomy wound among postnatal mothers

Title of the study:

“Effectiveness Of Betadine Wash Versus Normal Saline Wash On Episiotomy Wound Healing Among Postnatal Mothers Of Selected Hospitals: A Comparative Study.”

A) Objectives Primary objectives:

- To assess the effectiveness of betadine wash versus normal saline wash on episiotomy wound healing among postnatal mothers of selected hospitals.

Secondary objectives:

- To assess the effectiveness of betadine wash on episiotomy wound healing among postnatal mothers.
- To assess the effectiveness of normal saline wash on episiotomy wound healing among postnatal mothers.
- To compare the effectiveness of betadine wash versus normal saline wash on episiotomy wound healing among postnatal mother.

- To find out the association between level of episiotomy wound healing with selected demographic variables.

B) **Operational Definition:**

1. *Effectiveness*

In the study effectiveness refers to the intended effect of betadine wash on episiotomy wound healing or the intended effect of normal saline wash on episiotomy wound healing among postnatal mothers.

2. *Betadine wash*

In the study betadine wash Refers to cleaning to episiotomy wound with 5 % betadine solution among postnatal mother.

3. *Normal saline wash*

In the study Normal saline wash Refers to cleaning of episiotomy wound with sterile Isotonic solution which contain 0.9% sodium Chloride among postnatal mothers.

4. *Episiotomy*

In the study episiotomy refers to a surgical incision performed on perineum and the posterior vaginal wall during childbirth.

Wound healing

In the study wound healing refers to decreasing redness, edema, ecchymosis, discharge and approximation on episiotomy among postnatal mothers.

Postnatal mothers

In the study Postnatal mother refers to the mother in the age between 18-40yrs and above with episiotomy wound after vaginal delivery in selected hospital.

Hospitals

In the study hospital refers to an institute where antenatal, intranatal and postnatal care will be provided to the mother.

C) **Hypothesis**

Hypothesis will be tested at 0.05 level of significance

- H0-There will be no significant difference between mean post-test healing score of postnatal mothers who receive betadine wash and those who receive normal saline wash.
- H1- There will be significant difference between mean posttest healing score of postnatal mothers who receive betadine wash and those who receive normal saline wash.

Limitations:

The study is limited to:

- In the age between 18-40yr and above
- Who Had normal vaginal delivery with episiotomy
- Primi and multigravida.
- Willing to participate in the study.

D) **Ethical Aspect**

The ethical committee of the institution had given the approval for this study proposal. Prior permission was obtained from the concerned authority for conducting this study. After explaining all the aspects of the study to the participants, written consents were taken from them. All the information obtained from the participant was kept confidential.

E) **Review of Literature**

In the present study the literature reviewed has been organized into the following categories:

- Literature Review related to episiotomy and its management.
- Literature Review related to effectiveness of betadine wash on episiotomy wound healing.
- Literature Review related to effectiveness of normal saline wash on episiotomy wound healing.
- Literature Review related to effectiveness of betadine wash versus normal saline wash on episiotomy wound healing.

F) **Conceptual Framework:**

The conceptual framework used for the present study is developed from the Roy's adaptation model was developed by Sr. Callista Roy

IV. **METHODOLOGY**

Research approach: Quantitative research approach

Research design: True experimental Pre-test Post-test research design

Setting of the study: The study was conducted in selected hospitals.

Research variable: Effectiveness of betadine wash versus normal saline wash on episiotomy wound healing among postnatal mothers.

Demographic variables: Age, Educational status, Occupation, Residual Area, type of Family, the monthly family income (In rupees), Gravida, Parity and Number of perineal pads used per day.

Population

- **Target population:** All postnatal mothers who Received Episiotomy in the selected Hospital.
- **Accessible population:** All postnatal mothers admitted in selected hospitals are available at the time of data collection who were fulfilling the inclusive criteria.

Sampling

- *Sample size:* 60 Postnatal Mothers
- *Sampling technique:* Probability Simple random sampling technique

7. Sampling criteria

• Inclusion criteria:

Postnatal mother who are;

1. In the age between 18-41 yr. and above
2. Who Had normal vaginal delivery with episiotomy
3. Primi and multigravida.
4. Willing to participate in the study.

• Exclusion criteria:

Postnatal mothers who are:

1. Had Perineal tear
2. Had lower segment caesarean section (LSCS) .

8. Description of Tools

- Section- A: - Demographic Variables
- Section- B: - Standardized REEDA scale

9. Validity

For the content validity, the tool was distributed to 22 experts including Obstetrics and gynecological nursing experts, and statistician. Experts were chosen according to their area of specialty. Valuable suggestions were given and necessary corrections were made after the consultation with guide.

10. Reliability

In this study, by Karl Pearson correlation coefficient formula it was found to be 0.82 and hence tool is reliable and valid.

11. Pilot study

It was conducted on 12 Postnatal Mothers and collected data was coded, tabulated and descriptive and inferential statistics used to analyze. The pilot study was feasible in term of time, money and resources.

12. Data collection

Main study was done from date. 8/12/2023 to 26/12/ 2023 Permission was obtained from the Higher Authorities of the Hospitals self-introduction was done by the investigator and the purpose of the study was explained. Informed consent was obtained from the participants after explaining the purpose of study. Code Number will be given to participants. Simple random sampling using Lottery method was done to select the samples for both, Betadine wash (Group-I) and Normal saline wash (Group-II). Collection of the semi-structured questionnaire on demographic variables in both Betadine wash (Group-I) and Normal saline wash (Group-II).was done. Intervention Betadine wash for (Group-I) and Normal saline wash (Group-II) was given to the participants.

V. RESULT

Section I: Distribution of postnatal mothers with regards to demographic variables

Table No IV.1 Table showing the frequency and percentage wise distribution of postnatal mothers according to their demographic characteristics.

N-60		
DEMOGRAPHIC VARIABLES	FREQUENCY (F)	PERCENTAGE (%)
Age(yrs)		
19-23 yrs	11	18.3
24-28 yrs	35	58.3
29-33 yrs	14	23.3
34-38 yrs	0	0
≥39 yrs	0	0
Educational Status		
Primary	0	0
Secondary	14	23.3
Higher Secondary	16	26.7
Graduation	30	50.0

www.ijcrt.org	Postgraduation	0	0
	Other	0	0
	Occupation		N=60
	Homemaker	31	51.7
	Service	19	31.7
	Business	10	16.7
	Labour	0	0
	Other	0	0
	Residential Area		
	Rural	26	43.3
	Urban	21	35.0
	Semi Urban	13	21.7
	Nuclear	31	51.7
	Joint	29	48.3
	Extended	0	0
	Monthly family income(Rs)		
	5000-10000 Rs	0	0
	10001-20000 Rs	27	45.0
	20001-30000 Rs	31	51.7
	≥30001 Rs	2	3.3
	Gravida		
	Primigravida	41	68.3
	Multigravida	19	31.7
	Parity		
	Primiparous	41	68.3
	Multiparous	19	31.7
	Clinical Data : Number of perineal pads used per day		
	3-4 pads	60	100
	5-6 pads	0	0
	>6 pads	0	0

Level of episiotomy wound status	Score Range	Level of pre-intervention episiotomy wound status	
		Betadine Wash	Normal Saline Wash
Healed	0	0(%)	0(%)
Moderately Healed	1-5	0(%)	0(%)
Mild Healed	6-10	0(%)	0(%)
Not Healed	11-15	30(%)	30(%)
Minimum score		12	12
Maximum score		14	14
Mean REDDA score		13.26 ± 0.63	13 ± 0.64

Table No IV. 3 Table showing distribution of post-intervention score of episiotomy wound status in betadine wash (Group A) and normal saline wash (Group B) by REDDA Scale.

N=60

Level of episiotomy wound status	Score Range	Level of post-intervention episiotomy wound status	
		Betadine Wash	Normal Saline Wash
Healed	0	0(0%)	0(0%)
Moderately Healed	1-5	30(100%)	0(0%)
Mild Healed	6-10	0(0%)	30(100%)
Not Healed	11-15	0(0%)	0(0%)
Minimum score		2	7
Maximum score		4	9
Mean REDDA score		2.96 ± 0.76	7.50 ± 0.57

Table No IV.4 showing the comparison of mean and standard deviation (SD) of pre and post intervention score of episiotomy wound in betadine wash (Group A).

Test	Mean	SD	Mean Difference	Df	Table value	Calculated t-value	p-value	Significance
Pre Test	13.26	0.63	10.30±1.05	29	2.04	53.45	0.0001 S,p<0.05	s
Post Test	2.96	0.76						

Table No IV. 5 Table showing the comparison of mean and standard deviation (SD) of pre and post intervention score of episiotomy wound in Normal saline wash (Group B).

Test	Mean	SD	Mean Difference	Df	Table value	Calculated T -value	p-value	Significance
Pre Test	13	0.64	5.50±0.82	29	2.04	36.73	0.0001 S,p<0.05	S
Post Test	7.50	0.57						

Section III: comparison of effectiveness of betadine wash versus normalsaline wash on episiotomy wound healing among postnatal mothers from selected hospitals

n=30

n=30

TABLE NO IV. 6 TABLE SHOWING THE COMPARISON OF POST-INTERVENTION SCORE OF EPISIOTOMY WOUND HEALING IN BETADINE WASH VERSUS NORMAL SALINE WASH. n=60

Group	Mean	SD	Mean Difference	t-value	p-value
Betadine Wash	2.96	0.76	4.53±0.17	25.99	0.0001 S,p<0.05
Normal Saline Wash	7.50	0.57			

Section IV: Description on association of episiotomy wound healing among postnatal mothers with their selected demographic variables.

Table No IV. 7 showing description on association of episiotomy wound healing score of postnatal mothers with selected demographic variable.

SR. NO.	Demographic Variables	Calculated value			DF	Table value	Level of significance	Significance
		t-value	F-value	P-value				
1.	Age (yrs.)		4.38	0.017	2,57	3.15	p>0.05	S
2.	Educational Status		1.14	0.34	2,57	3.15	p>0.05	NS
3.	Occupation		3.46	0.038	2,57	3.15	p>0.05	S
4.	Area of residence		8.15	0.001	2,57	3.15	p>0.05	S
5.	Type of family	0.45		0.65	58	2.00	p>0.05	NS
6.	Monthly family income(Rs)		1.53	0.22	2,57	3.15	p>0.05	NS
7.	Gravida	1.10		0.27	58	2.00	p>0.05	NS
8.	Parity	1.10		0.27	58	2.00	p>0.05	NS

S – significance NS- Non significance

VI. DISCUSSION

The study was conducted on effectiveness of betadine wash versus normal saline wash on episiotomy wound healing among postnatal mothers of selected hospitals. In the present study, True experimental design one group pre-test post-test design was used. 60 postnatal mothers (betadine wash (group A) and normal saline wash (group B)) whose had episiotomy were selected by simple random sampling technique. Semi Structured questionnaire on demographic variable was used to collect demographic data and standardized REEDA scale used for episiotomy wound healing assessment. The result revealed that the comparison of post intervention episiotomy wound healing scores of postnatal mothers in Betadine Wash versus Normal Saline Wash. Mean, standard deviation and mean difference values are compared and student's unpaired 't' test is applied at 5% level of significance. The tabulated value for n=30+30-2 i.e. 58 degrees of freedom was 2.00. The calculated 't' value i.e. 25.99 are much higher than the tabulated value at 5% level of significance for overall episiotomy

wound healing score (REDDA scale) of postnatal mothers which is statistically acceptable level of significance. So betadine wash is moderately effective and normal saline wash was mild effective on episiotomy wound healing. Hence it is statistically interpreted that the Betadine Wash versus Normal Saline Wash on episiotomy wound healing among postnatal mothers of selected hospitals was effective.

A comparative study was conducted to Assess the effectiveness of Betadine and normal saline on episiotomy wound healing among postnatal mothers, to Compare the level of wound healing in Betadine wash and normal saline, 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. 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. The findings proved that Betadine wash is more effective than normal saline to reduce the wound healing of episiotomy among postnatal mothers

VII. CONCLUSION

Hence it is statistically interpretation Analysis reveals that there is association of episiotomy wound healing with Age (in year), Occupation and Area of residence while none of the other demographic variables were associated with episiotomy healing score.

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IX. REFERENCES

1. Wikipedia contributors. Postpartum period [Internet]. Wikipedia, The Free Encyclopedia. 2023. Available from: https://en.wikipedia.org/w/index.php?title=Postpartum_period&ol did=1149662330
2. Hospital [Internet]. Oxfordlearnersdictionaries.com. [cited 2023 Apr 16]. Available from: <https://www.oxfordlearnersdictionaries.com/definition/english/hospital>
3. Senesac, P. M., Roy, S. C. (2010). Sister Callista Roy's Adaptation Model, In M. Parker and M. Smith (Ed.), Nursing

- Theories and Repository-tnmgrmu.ac.in. [cited 2023 Apr 16]. Available from: http://repositorytnmgrmu.ac.in/10137/1/3003163james_beula.pdf/
4. D.C. dutta's textbook of obstetrics, published by Hirala konar, JP brothers, page. No.113
 5. No title [Internet]. Ijsr.net. [cited 2023 Apr 16]. Available from: https://www.ijsr.net/get_abstract.php?paper_id=SR22316140933
 6. Gomaa R, Safaa Abd El Raof Hashem R. Rania Farrag, effectiveness of betadine versus normal saline dressing on episiotomy wound healing. Egyptian Journal of health care. 2019;
 7. Episiotomy [Internet]. Glowm.com. [cited 2023 Apr 16]. Available from: <https://www.glowm.com/sectionview/heading/Episiotomy/item/128>
 8. Choudhari RG, Tayade SA, Venurkar SV, Deshpande VP. A review of episiotomy and modalities for relief of episiotomy pain. Cureus [Internet]. 2022;14(11):e31620. Available from: <http://dx.doi.org/10.7759/cureus.31620>
 9. Woretaw E, Teshome M, Alene M. Episiotomy practice and associated factors among mothers who gave birth at public health facilities in Metema district, northwest Ethiopia. Reprod Health [Internet]. 2021;18(1):142. Available from: <http://dx.doi.org/10.1186/s12978-021-01194-9>
 10. Kartal B, Kızıllırmak A, Calpbinici P, Demir G. Retrospective analysis of episiotomy prevalence. J Turk Ger Gynecol Assoc [Internet]. 2017;18(4):190–4. Available from: <http://dx.doi.org/10.4274/jtggga.2016.0238>
 11. Maternal infections in health facilities [Internet]. Who.int. [cited 2023 Apr 16]. Available from: <https://www.who.int/news/item/27-04-2020-maternal-infections-in-health-facilitie>
 12. Maternal mortality. Ir J Med Sci [Internet]. 1966 [cited 2023 Apr 16];42(S1):59–60. Available from: <https://www.who.int/newsroom/fact-sheets/detail/maternal-mortality>
 13. Ekb.eg. [cited 2023 Apr 16]. Available from: [https://ejhe.journals.ekb.eg/article_58678. ht ml/](https://ejhe.journals.ekb.eg/article_58678.ht ml/)
 14. Ms L, Parimala M. A comparative study to assess the effectiveness of betadine wash and Normal Saline in wound Healing of episiotomy among Postnatal mothers. Research journal of pharmacy and technology. 2020;13(3):1329–32.
 15. Davis F.A. Taber's cyclopedic medical dictionary, 20th edition, 2006, Jaypee brothers medical publishers private limited, page 727, 1607
 16. Annamma Jacob Rekha R, Jadhav Sonali Taraachand, Clinical Nursing Procedures: The Art of Nursing Practice, Fourth edition, JAYPEE publisher, page no. 712-713.
 17. Beam JW. Wound cleansing: Water or saline? Journal of Athletic Training. 2006;41(2):196.