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A STUDY TO EVALUATE THE EFFECTIVENESS OF PERINEAL CARE BUNDLE INTERVENTION AND DETERMINANTS OF IMMEDIATE ADVERSE PREGNANCY OUTCOMES IN MOTHERS ADMITTED AT SELECTED TERTIARY CARE HOSPITAL AT BHOPAL

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ABSTRACT

Background: Vaginal childbirth is undergone by more than 85% of mothers, frequently leading to perineal trauma and notable episiotomy rates of 93.3% among primiparous mothers and 30.2% among multiparous mothers. Central to perineal care is vigilant infection monitoring due to common postpartum discomfort, often exacerbated by episiotomies, resulting in swelling, lesions, rashes, sores, and boils post-birth, meticulous perineal care is crucial for preventing infections and promoting swift healing of rectal and pelvic muscles. These study objectives to evaluate the efficacy of perineal care interventions as its primary objective while also seeking to identify determinants of immediate adverse pregnancy outcomes among mothers as a secondary objective.

Methodology: This study adopts an evaluative approach through a randomized controlled trial, involving 167 participants distributed across intervention and non- intervention groups. The research was conducted within the labour and postnatal wards of a tertiary care hospital based in Karnataka. Research tools utilized included a structured interview schedule, checklist, Redness, Edema, Ecchymosis, Discharge and Approximation (REEDA) Scale, and Visual Analogue (VAS) Scale to evaluate the impact of perineal care interventions on postpartum outcomes.

Results: Among 167 participants in the intervention group, both pre- and post-culture reports showed no organism growth. Conversely, within the non-intervention group of the same size, 16 (9.6%) subjects displayed organism growth in post-test reports. Notably, all 167 participants in both groups exhibited normal findings in their initial pre-test reports, indicating an absence of issues before the study's interventions. Significant associations emerged in adverse pregnancy outcomes: Birth asphyxia was notably higher

among pure vegetarians and older women (36≥) with a 15-fold increase and an 18.62 times association with mild anemia. Additionally it is related to illiteracy primary education and a monthly income of 5000-9999. Similarly low birth weight was prevalent among older mothers (36≥), those with PUC education, incomes below 5000 and consanguineous marriages. Preterm birth significantly increased (12.36 times) in the 26-30 age group associated with rural residence, private service jobs, 5000-9999 incomes and moderate anemia. Postpartum hemorrhage was more frequent in mothers above 30 engaged in agriculture with lower education and incomes of 10000-19999. Blood transfusion rates were notably higher in PUC-educated mothers with incomes below 10000 per-months.

Conclusion: In light of the superior effectiveness demonstrated by the perineal care bundle intervention employing an antiseptic solution compared to self-perineal care instruction this study sheds light on critical determinants influencing immediate adverse pregnancy outcomes. Spanning across maternal age, residence, occupation, education levels, monthly family income, frequency of antenatal care visits, hemoglobin levels and dietary patterns these findings emphasize the need for targeted interventions and comprehensive maternal care strategies. Acknowledging these determinants enables the development of tailored approaches aimed at mitigating adverse pregnancy outcomes emphasizing the significance of proactive and holistic maternal healthcare.

1-INTRODUCTION

BACKGROUND OF THE STUDY

Pregnancy and labor are crucial public health concerns affecting both developed and developing nations. Labor comprises a series of events occurring within the genital organs, culminating in the delivery of the fetus, placenta, and membranes from the womb to the outside world through the genital canal. However vaginal birth often leads to perineal trauma causing damage to the skin of the rectum and anal sphincter. This trauma is associated with various major complications. The gravity of these issues are emphasized by reports from the United Nations International Children's Emergency Fund (UNICEF), which reveal that preventable complications during pregnancy, childbirth or the postpartum period claim the lives of approximately 810 women daily on a global scale. Postpartum infection can occur after delivery and has been identified as the leading cause of maternal morbidity and mortality in developing countries.

Over 140 million women deliver worldwide with 16.3% of maternal deaths occurring pregnancy-related infections reported annually. The prevalence of these infections is particularly pronounced in low-resource settings where many maternal deaths associated with infections could be prevented. Puerperal infection is characterized by poor intra partum cleanliness a low socioeconomic status prim parity in the mother anemia and premature rupture of the membranes prolonged labor and repeated vaginal exams during delivery. Approximately 12% of maternal deaths in India result from puerperal infections. Several factors influence the occurrence of hemorrhage, pregnancy-related infection, and pregnancy-related hypertensive disorder depending on the location and type of postpartum care received. Puerperal infections can in nature be prevented, yet they still significantly contribute to maternal morbidity and mortality. Puerperal infection can

result from perineal wounds which create favorable conditions for bacterial growth. The perineum being a moist area provides an ideal environment for bacteria making it susceptible to infections. Infections originating from perineal wounds have the potential to spread to the urinary system or birth canal. Additionally infectious illnesses can exacerbate damage to the skin's supporting tissues thereby impeding the healing process of perineal wounds. The skin forms a crucial mechanical barrier that largely prevents infection but this barrier can be compromised by skin injuries. It is imperative that this barrier is repaired promptly for this reason. Certain procedures used to alleviate pain and discomfort during puerperal may affect wound healing. The lack of research on the effectiveness of different therapies and regulations related to perineal wound care is a cause for concern. It is essential for all nurses to address this issue especially since 18.5 % of new mothers experience severe perineal difficulties. The three primary objectives of perineal wound care are to reduce pain and suffering, prevent infections and expedite the healing process. Prioritizing pain and discomfort reduction does not negatively impact wound healing.

NEED FOR THE STUDY

The moment of childbirth stands as an awe-inspiring milestone in a mother's journey. It possesses a profound capacity to sculpt her future intertwining a tapestry of enduring joys and challenges that intricately shape her life. Perineal tears often occur in vaginal delivery either spontaneously or through interventions such as an episiotomy. In the context of vaginal deliveries perineal traumas are a prevalent occurrence affecting approximately 85% of mothers worldwide. These traumas can lead to complications like bleeding, infections and postpartum discomfort. Their potential to give rise to subsequent challenges including depression, dyspareunia and a negative impact on both quality of life and sexual well-being is noteworthy. The burden of puerperal infection is particularly pronounced in low and middle-income countries, disproportionately affecting vulnerable populations that necessitate meticulous hygiene and care. Literature suggests that residence of mothers was significantly associated with puerperal infection. Women who were living in rural areas were 2.5 times more likely to develop puerperal infection when compared to those mothers living in urban areas. Additionally, age, occupation, lower level of education, low socio-economic status, lower number of ANC visits and multiple vaginal examinations are associated factors of puerperal infection. Furthermore, differences in skin elasticity often result in a higher likelihood of Asian women requiring episiotomies compared to non-Asian women due to the tendency of Asian skin to stretch less efficiently. Lacerations in the perineum, cervix, vagina and vulva can manifest spontaneously or as a result of medical interventions like episiotomies. Serious lacerations are correlated with an elevated prevalence of long-term pelvic floor dysfunction, pain, dyspareunia and emotional distress. Lacerations lead to enduring issues with the prevention of perineal trauma being a pivotal aspect of nursing care. Perineal pain and discomfort, episiotomy infections, and puerperal sepsis are all sources of morbidity and mortality in women in the postnatal stage. Perineal pain and discomfort are one of the leading contributors to maternal morbidity. Prevalence of puerperal infection varies in different geographical regions 33.5% in Nigeria, 68.65% in India and 72.9% in Sudan. Studies have demonstrated that women in Asian countries due to their short perineum and strong tissue are prone to large ruptures of the perineum during vaginal

delivery so episiotomy is still common. Episiotomy like any other wound can lead to infection and delayed healing. Infection occurrence can be due to the mother's body microbial flora (the vagina, gastrointestinal tract and skin) or external microorganisms (infected medical staff conducting the delivery, poor surgical techniques, and infected instruments and delivery environment), especially in low- resource settings. It clinically manifests with fever, local pain, hyperthermia, redness, ecchymosed and discharge from the incision site and is sometimes associated with perineal abscesses delayed wound healing, or wound opening. A notable study conducted in India aimed to assess the effectiveness of betadine compared to normal saline dressing in promoting the healing of episiotomy wounds. This study involved a random sample of 100 postnatal mothers with half using normal saline dressing and the other half using betadine. The initial standardized REEDA scores revealed that 20% were categorized as mild 88% as moderate and 92% as severe in the pre-test. Subsequently the post-test results showed improvement with 76% exhibiting normal healing 80% showing mild improvement and 26% showing moderate improvement. The study highlighted the positive impact of betadine on episiotomy wound healing as evidenced by lower mean scores on the REEDA scale. According to a recent study in Ethiopia determinants of adverse birth outcomes are low antenatal care visits, anemia, premature rupture of membrane, pregnancy-induced hypertension, inadequate dietary supplementation, low socioeconomic status, residence in a remote area, and physical abuse. The health care provider should play a pivotal role in improving regular ANC follow-up visits counseling about the supplementing recommended proper diets, and awareness about the pregnancy-related consequences that can minimize the adverse birth outcomes. In a 2016 Maharashtra study, 629 women were involved, and 38.32% faced complicated pregnancy outcomes. Univariate analysis highlighted a strong link between pregnancy outcomes and education, occupation, socio-economic status, age at marriage and consanguineous marriage. Maternal age and residence showed noteworthy correlations while no significant ties were found between pregnancy outcomes and family type or access to transport facilities. The incidence of PPH has been 2 to 4% % in vaginal deliveries and 6% in cesarean deliveries. Maternal mortality due to PPH is 19.9% In India. Prevalence of postpartum anaemia was found at 70% anemic (Hb < 11 g/dL) in north rural India. Postpartum anaemia was a common but often neglected public health issue throughout the world. The prevalence of postpartum anemia was 32.7% in overall. Around 70 thousand maternal deaths occurring each year globally were attributed to per partum hemorrhage and anemia in low and middle-income countries.

2-OBJECTIVE

Primary Objective

To assess the effectiveness of perineal care bundle (with antiseptic solution and use of sterile pads intervention) to prevent infection among mothers admitted in tertiary care hospital, Bhopal M.P.

Secondary Objective

To identify the determinants of immediate adverse pregnancy outcomes among the mothers admitted in tertiary care hospital, Bhopal M.P.

3. ASSUMPTIONS

• Improper care of episiotomy may lead to infection

• Postnatal mothers with episiotomy may prone to develop complications

• Nurses have an important role in reducing episiotomy pain and promotion of wound healing

4. HYPOTHESIS

The hypotheses were tested at 0.05 levels.

An evaluative research approach was used in this study to evaluate the effectiveness of perineal care bundle intervention and immediate adverse pregnancy outcomes among mothers admitted to labour and postnatal ward in selected tertiary care hospital at Bhopal M.P.

5. REVIEW OF LITERETURE

In the 2022 Malaysian study, 125 primigravida mothers participated aiming to evaluate the impact of self-perineal care (SPC) education on episiotomy pain scores and wound healing outcomes. The participants were divided into two groups: an SPC education group (n=62) and a control group (n=63). The intervention entailed providing SPC education through a mobile application, alongside routine care to the education group. Both groups utilized the mobile application to self-report their episiotomy pain scores and wound healing progress for 7 days following childbirth. The results consistently demonstrated significantly lower overall pain and REEDA scores in the intervention group compared to the control group throughout the post-delivery week ($P < 0.001$). Consequently, the study concluded that SPC education effectively diminished episiotomy pain and enhanced wound healing outcomes. This underscores the pivotal role of empowering primigravida mothers in their health through comprehensive self-care education.

In 2019 a hospital-based study was conducted at the postpartum unit of Abou Homos General Hospital in the Albehera Governorate, Egypt. The research aimed to evaluate the impact of perineal self-care guidelines on discomfort and recovery following episiotomy among postpartum women. Employing quasi-experimental research design 8 postpartum mothers were randomly assigned to either the study or control groups. Data collection utilized three instruments: the standardized REEDA scale the Pain Intensity Visual Analogue Scale (VAS), and the Socio demographic and Obstetric Data Sheet. Results indicated a statistically significant difference between the two groups in terms of perineal edema, redness and episiotomy pain beyond 48 hours postpartum. Notably, postpartum women who received perineal self- care training experienced reduced episiotomy pain and faster healing compared to those without such training. The study suggests that improving women's physical and mental health could be achieved through proper training for healthcare workers.

An Iranian study conducted in 2010 aimed to compare the effectiveness of topical phenytoin cream and betadine solution in alleviating discomfort experienced by primiparous mothers after episiotomy incisions. At Al-Zahra Medical Center in Tabriz, 120 primiparous women who underwent episiotomies were randomly assigned in a double-blind clinical trial design to either the phenytoin or betadine groups (60 participants in each). Pain intensity was assessed using a visual analogue scale (VAS) within the first twenty-four hours post-delivery and on the tenth day following delivery. The study revealed that within the initial 24 hours

postpartum, the mean pain intensity was 4.39 ± 1.11 in the phenytoin group and 7.11 ± 1.48 in the betadine group ($p < 0.001$). On the tenth day postpartum, the mean pain intensity was 0.72 ± 1.04 in the phenytoin group and 3.45 ± 2.00 in the betadine group ($p < 0.001$). The findings suggested that local application of phenytoin effectively reduced episiotomy-related pain, indicating its potential as an alternative to betadine.

A quasi-experimental study focusing on primiparous women and centered on episiotomy and self-perineal care was conducted in 2009 at the Ibn AL-Baladi Pediatric and Maternity Hospital in Al-Russafa, Baghdad, Iraq. Sixty primiparous mothers were recruited, with thirty individuals in the intervention group receiving instruction-oriented intervention while the remaining thirty in the control group did not receive such intervention. The results highlighted a significant improvement in the study group's understanding of episiotomy and self-perineal care after the educational intervention. The majority of mothers successfully met their perineal care needs, employing methods such as using ice packs, baths, dry heat, abstaining from coitus, adhering to proper restroom hygiene consuming a healthy diet to prevent constipation, exercising pelvic muscles, and receiving follow-up treatment. The study recommends providing educational interventions for all pregnant mothers visiting primary health care centers. Additionally it suggests that implementing such interventions in hospitals could benefit women who have undergone episiotomies.

A study conducted in Chennai in 2020 aimed to assess the efficacy of betadine wash in treating episiotomy wounds among postnatal mothers. Using a pre- experimental design, the study involved a sample size of 100 participants with 50 receiving betadine wash and 50 receiving normal saline selected through simple randomized sampling. The study's findings revealed a statistically significant difference with a p-value less than 0.001, indicating that betadine wash yielded superior results compared to normal saline. In conclusion the research demonstrated that betadine wash serves as a more effective intervention in enhancing healing process of episiotomy wounds in postnatal mothers compared to the application of normal saline.

In 2022 a quasi-experimental study conducted in India aimed to evaluate the effects of medicated and non-medicated sitz baths on the healing of episiotomy wounds in postnatal women. Sixty new mothers were selected using a straightforward random sampling method and divided into two groups: twenty in the first group received a medicated sitz bath (10% Butadiene) and thirty in the second group received a non-medicated sitz bath. Pain was measured using a visual analogue scale while the healing condition of the episiotomy wound was assessed using the REEDA scale. The findings indicated that medicated sitz baths were superior to non- medicated ones in providing pain relief and promoting wound healing.

In 2021 a study conducted in Maharashtra India aimed to assess the effectiveness of a self-instructional module in augmenting knowledge about perineal care among primipara postnatal mothers. Employing a pretest and post-test design the study evaluated the impact of this module on perineal care knowledge using a combination of inferential and descriptive data analysis techniques. The findings revealed improved perineal hygiene practices among primipara postnatal mothers in the selected Wardha district. These practices were associated with reduced perineal discomfort and lowered infection rates ultimately contributing to an enhanced quality of life. This improvement complemented other interventions knowledge

provisions emphasizing the significance such educational modules in postnatal care.

A study conducted in Angola aimed to address the critical need for improving maternal healthcare and reducing maternal and newborn mortality in alignment with global health priorities. Despite ongoing efforts, Angola continues to grapple with high rates of maternal mortality in 2015 the country's risk of maternal mortality was 1 in 32. The study's objective was to identify social and demographic factors influencing mothers' receipt of prenatal care, hospital deliveries and the outcomes of these births. The findings revealed that although 96.8% of mothers received prenatal care and 98.5% gave birth to live children a staggering 50.7% chose to deliver outside a hospital setting. Analyzing 10,289 pregnancy outcomes involving 8,066 mothers collected by the Dande Health and Demographic Surveillance System between 2009 and 2015 the study highlighted the substantial impact of prenatal care attendance on delivery outcomes. Factors such as age, education rural residence and proximity to healthcare facilities significantly influenced healthcare utilization. Consequently the study concludes that targeted interventions are imperative to enhance maternal healthcare and reduce mother and child mortality rates in Angola. Specifically addressing disparities in prenatal care and institutional delivery is crucial.

6- CONCEPTUAL FRAME WORK

A conceptual framework is a theoretical approach that scientifically examines problems emphasizing the selection arrangement and classification of its concepts. It refers to interrelated concepts or abstractions organized in rational scheme due to their relevance to a common theme. These frameworks serve as springboards for generating hypotheses to be tested. King describes her model as a conceptual system consisting of three interacting systems the personal the interpersonal and the social system. Within this framework the nurse and the individual engage in interactions aimed at achieving a common goal. Over time these interactions culminate in transaction where the individual's goals are fulfilled. King's Goal Attainment theory is founded upon these concepts

7. METHODOLOGY

Research materials and methods are the techniques used to structure a study and to gather and analyze information relevant to the research question. The present chapter unfolds the methodology applied to acquire the desired and required information pertaining to the research problems to evaluate the effectiveness of perineal care bundle intervention and determinants of immediate adverse pregnancy outcomes. Reducing episiotomy wound pain, inflammation and infection among mothers admitted in labour and postnatal ward in selected tertiary care hospital at Bhopal M.P.

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RESEARCH APPROACH

A quantitative, analytical, evaluative research approach was used in this study to evaluate the effectiveness of perineal care bundle intervention and immediate adverse pregnancy outcomes among mothers admitted to labour and postnatal ward in selected tertiary care hospital at Bhopal M.P.

RESEARCH DESIGN

Randomized control trial was chosen.

GROUP	RANDOMIZATION	PRE TREATMENT ASSESSMENT	INTERVENTION	POST TREATMENT
C_1	R	Q1	X_1	Q2
C_2	R	Q1	X_2	Q2

Keys:

C_1 is the intervention group

C_2 is the non-intervention group

R is the randomization of the sample

Q_1 is the pre-intervention assessment

Q_2 is the post-intervention assessment

X_1 is the perineal care bundle intervention.

X_2 is the instruction for self-perineal care

Variables under Study

In experimental studies, concepts are usually referred to as variables which are the central building blocks of the study. The present study aimed to evaluate the effectiveness of the perineal care bundle intervention and immediate adverse pregnancy outcomes.

Independent variables

The independent variable is the variable that is believed to influence or cause the dependent variable. In an experimental study the independent variable is the treatment or intervention the researcher manipulates. In this study independent variable was perineal care bundle intervention. Other independent variables were age, occupation, residence, monthly family income, anemia, dietary pattern, type of marriage, ANC visit, Hb level during pregnancy and parity.

Dependent Variable

It is the outcome of a criterion variable that is hypothesized to be caused by another variable. In the present study the dependent variables were pain, inflammation of episiotomy wound, outcome of high vaginal swab culture (organism growth and non growth), low birth weight, preterm birth, birth asphyxia, post partum hemorrhage and blood transfusion of mothers admitted to labour and postnatal ward in selected tertiary care hospital at Bhopal M.P.

Extraneous Variable

In the present study the extraneous variables are nutritional status and Body Mass Index (BMI) of mothers admitted to labour and postnatal ward in selected tertiary care hospital at Bhopal M.P.

Research Setting

Settings are most specific places where data collection based on nature of research questions and type of information needed to address it. The settings selected for the present study was selected tertiary care hospital at Bhopal M.P. The criterion for selecting was the feasibility for conducting the study.

Study Population

The population is defined as the entire set of individuals (or objects) having some common characteristics sometime referred to universe. In the present study the study population comprises of mothers' normal vaginal delivery with episiotomy and non-episiotomy at postnatal ward in selected tertiary care hospital at Bhopal M.P. India.

Sample

A sample is a portion of the population that has been selected to represent the population of interest. Thus it is a subset of the population element. The sample for the present study was laboring and postnatal mothers with normal vaginal delivery admitted to the labor and postnatal ward in selected tertiary care hospital at Bhopal M.P.

Sample Size

Sample size formula for testing the difference between two population proportions for a quantitative, randomized controlled trial was used. A total required sample size = 334 mothers, 167 in the intervention group, and 167 in the non-intervention group were enrolled in this study.

Sampling Technique

The sampling technique used for the study was inverse sampling technique.

Sampling Criteria

Inclusion Criteria:

Mothers admitted to the labour and postnatal ward of tertiary care hospital at Bhopal M.P.

Spontaneous vaginal delivery

Mothers age 20 and above.

Mothers with episiotomy and non-episiotomy

Exclusion Criteria:

Premature Rupture of Membrane (PROM)

Mothers who suffered from infection

Mothers who has history of chronic diseases (Heart problem, renal problem, diabetes mellitus, thyroid)

Pregnancy-induced complications pregnancy-induced hypertension, gestational diabetes mellitus,

Mothers with caesarean section delivery

Data Collection Instruments and Techniques

Description of the tool: Proforma for data collection contained the following sections.

Section A: Socio-demographic Information

The variables included in the socio demographic information were age, religion, monthly family income and educational status of the mothers, occupation of the mothers and residence, type of marriage, dietary pattern, smoking status and consumption of alcohol.

Section B: Pregnancy Related Information

This section included parity, antenatal visits during the pregnancy according to Antenatal Care record, hemoglobin during labour.

Section C: High Vaginal Swab Culture before Delivery (During admission)

This section included vaginal swab culture information data collected by using the check list.

Section D: Pain and wound healing assessment (6 to 10, 20 to 24 and 40 to 48 hours of delivery)

This section included the pain assessment by using the VAS scale and assessment of wound healing by using REEDA scale.

Section E: Neonatal Immediate Adverse Outcomes (According to patient's case sheet).

This section included the information about the neonatal immediate adverse birth outcomes like low birth weight, preterm birth, and birth asphyxia. This section was collected in accordance to patient's case sheet before discharge.

Section H: Maternal Immediate Adverse Pregnancy Outcomes Information

This section included the information on post-partum hemorrhage and blood transfusion, according to patient's case sheet.

Section I: Perineal Care Outcomes (high vaginal swab culture) after 72 hours of delivery (Before Discharge).

This section was taken according to the patient's case sheet and perineal care bundle sheet. This section included the information on perineal care and high vaginal culture swab outcomes before patient discharge by using the check list.

Content validity and reliability of the tool

The content validity was obtained by face validity where eight professional experts were asked for their opinion. Data validation tool in excel was used for proper entry of data.

Data Management and analysis

Data was analyzed using excel and SPSS 20.0 version for the following:

Frequency distribution variation in the data was observed by calculating percentage, mean, median, standard deviation and percentiles.

Socio demographic, features, maternal immediate adverse pregnancy outcomes, high vaginal swab culture outcomes, and neonatal immediate outcomes was used chi-square. Independent't' test was used to detect the mean REEDA score and mean VAS in different time duration of post episiotomy. Regression was used to detect the determinants of immediate adverse pregnancy outcomes. Test values, degree of freedom,

regression, chi-square and the corresponding p values were specified for each of the variable. The reliability of both REEDA scores and VAS scores were assessed as good with a Cronbach's alpha value of 0.873. P value <0.05 was considered significant.

Data Collection Procedure

Phase 1

The participants were recruited after the inclusion and exclusion criteria were met.

The participants were selected by inverse sampling technique and for group division we used randomization (envelope) method.

The study was explained to the participants before obtaining written informed consent.

Demographic and pregnancy related information obtained in both groups.

Maintained the standard protocol during intervention

Collected the articles (Tray with perineal care bundle set, gloves, soap, clean water, kidney tray, forceps, high vaginal swab kits)

Pretest Q_1 was collected (high vaginal swab culture) on both the intervention and non-intervention groups during the admission in labour room and the culture reports were obtained.

Phase 2: Perineal care bundle intervention X_1 was performed by using the perineal care bundle set (normal saline 20 ml with 5% betadine, gauze pieces and sterile sanitary pads) every 2^{nd} hourly during labour in intervention group and recorded in perineal care sheet to the mothers admitted to labour room in selected tertiary care hospital.

Perineal care bundle verbal instructions X_2 was obtained for non-intervention group every 2 hourly during labour in non-intervention group and recorded in perineal care bundle sheet to the mothers, who admitted in the labour room and postnatal.

Phase 3: Perineal care bundle intervention X_1 was performed every 4^{th} hourly after delivery to until discharge.

Perineal care bundle intervention along with wound healing assessment by using the REEDA scale and pain intensity assessment by using VAS scale during 6 to 10 hours of episiotomy in both groups and recorded.

Phase 4: Perineal care bundle intervention along with wound healing assessment by using the REEDA scale and pain intensity assessment by using VAS scale during 20 to 24 hours of episiotomy in both groups and recorded.

Phase 5: Perineal care bundle intervention along with wound healing assessment by using the REEDA scale and pain intensity assessment by using VAS scale during 40 to 48 hours of episiotomy in both groups and recorded.

Post- test

Maintained the standard protocol during intervention

Collected the articles (Tray with perineal care bundle set, gloves, soap, clean water, kidney tray, forceps, high vaginal swab kits)

Q2 was collected (High vaginal swab culture) after 72 hours of delivery and the culture reports were obtained in both groups and recorded.

The outcomes of perineal care bundle interventions were recorded.

Immediate adverse pregnancy outcomes information was obtained through patient's case sheet

8. ANALYSIS AND INTERPRETESION

Table 1: Subject Distribution by Demographic Characteristics n=334

Socio demographic Information		Intervention Group		Non-intervention Group		Total		Chi Square (df)	p-Value
		n1	%	n2	%	N	%		
Age of Mothers	20 – 25	123	73.7	102	61.1	225	67.4	7.14 (3)	0.67
	26 – 30	16	9.6	30	18	46	13.8		
	31 – 35	23	13.8	30	18	53	15.9		
	36	5	3	5	3	10	3		
Religion	Hindu	136	81.4	125	74.9	261	78.1	2.37 (2)	0.306
	Muslim	22	13.2	32	19.2	54	16.2		
	Others	9	5.4	10	6	19	5.7		
Education	Illiterate and	5	3	6	3.6	11	3.3	5.94 (4)	0.204
	Secondary	21	12.6	18	10.8	39	11.7		
	PU	67	40.1	51	30.5	118	35.3		
	Bachelor	48	28.7	51	30.5	99	29.6		
	Postgraduate	26	15.6	41	24.6	67	20.1		

Table 1 presents an overview of the socio-demographic information concerning the mothers involved in the study. The majority of participant mothers, totaling 67.4%, fell within the 20 to 25 years age group, with 73.7% in the intervention group and 61.1% in the non-intervention group. Additionally, 78.1% identified as Hindus. Moreover, a significant number of participant mothers had completed education up to the Pre-University Course level, accounting for 35.3% in both the intervention (40.1%) and non-intervention groups (30.5%).

Table 2: Subject Distribution by Demographic Characteristics n=334

Socio demographic Information		Intervention Group		Non-intervention Group		Total		Chi Square (df)	p-Value
		n1	%	n2	%	N	%		
Occupation	Housewives	38	22.8	41	24.6	79	23.7	3.5 (4)	0.478
	Agriculture	44	26.3	32	19.2	76	22.8		
	Private Service	33	19.8	39	23.4	72	21.6		
	Government Services	9	5.4	6	3.6	15	4.5		
	Others	43	25.7	49	29.3	92	27.5		
Type of Marriage	Consanguineous	22	13.2	29	17.4	51	15.3	1.13 (1)	0.287
	Non consanguineous	145	86.8	138	82.6	283	84.7		
Residence	Urban	43	25.7	49	29.3	92	27.5	1.05 (2)	0.592
	Semi Urban	48	28.7	51	30.5	99	29.6		
	Rural	76	45.5	67	40.1	143	42.8		
Dietary pattern	Pure Vegetarian	38	22.8	37	22.2	75	22.5	0.90 (2)	0.638
	Mixes Diet	73	43.7	66	39.5	139	41.6		
	Vegetarian Consume Egg	56	33.5	64	38.3	120	35.9		

In the intervention group the majority of mothers were involved in agricultural occupations (26.3%) whereas in the non-intervention group this percentage was 19.2%. Non-consanguineous marriages were common among the participant mothers and a notable portion lived in rural areas within the study's scope. Additionally the prevalent dietary pattern among these mothers primarily consisted of mixed diets as indicated in Table .2.

Table 3: Subject distribution by demographic characteristics n=334

Socio demographic information		Intervention Group		Non-intervention Group		Total		Chi Square (df)	p-Value
		n1	%	n2	%	N	%		
Smoking Habit	Yes	21	12.6	11	6.6	32	9.6	3.46 (1)	0.063
	No	146	87.4	156	93.4	302	90.4		
Alcoholic Habit	Yes	11	6.6	6	3.6	17	5.1	1.55 (1)	0.213
	No	156	93.4	161	96.4	317	94.9		
Monthly family Income in Rupees	< 5000	20	12	21	12.6	41	12.3	3.04 (3)	0.385
	5000 – 9999	11	6.6	10	6	21	6.3		
	10000 – 19999	47	28.1	34	20.4	81	24.3		
	20000+	89	53.3	102	61.1	191	57.2		

A minority of participant mothers exhibited a smoking habit with an incidence of 12.6% in the intervention group and 6.6% in the non-intervention group. Similarly among the participant mothers 6.6% in the

intervention group had a habit of alcohol consumption, whereas this figure was 3.6% within the non-intervention group. Concerning maternal monthly family income exceeding 20,000 rupees, it constituted 53.3% in the intervention and 61.1% in the non-intervention group. However, the association between income levels and the distribution of intervention and non-intervention did not exhibit statistical significance as illustrated in Table 3.

Table 4 : Distribution of Pregnancy Related Information Among Mothers Admitted to Labor and Postnatal Ward in Intervention and Non-Intervention Groups n=334

Pregnancy Related Information of Mothers								
Pregnancy Related Information		**Intervention Group**		**Non-Intervention Group**		**N**	**Chi-Square (df)**	**p-Value**
		n1	**%**	**n2**	**%**			
Parity	Primi	83	49.7	87	52.1	170	0.19 (1)	0.0662
	Multi	84	50.3	80	47.9	164		
ANC Visits	4 ≥ANC Visits	151	90.4	157	94	308	1.50 (1)	0.22
	< 4 ANC Visits	16	9.6	10	6	26		
Hb Level of Mothers	Normal Hb Leve	125	74.9	117	70.1	242	1.89 (3)	0.54
	Moderate Anemic	9	5.4	11	6.6	20		
	Mild Anemic	27	16.2	35	21	62		
	Severe Anemic	6	3.6	4	2.4	10		

Foot note: Significant: p >0.05, ANC: Antenatal Care Visit, Hb: Haemoglobin

The majority of participant mothers were observed to have primiparous status (n=170). In contrast within the non-intervention group, the majority were primiparous (52.1%), while most cases exhibited multiparous status (47.9%). Most participant mothers had recorded counts of fewer than 4 antenatal care visits, with n=26 mothers falling into this category. Notably, among the cases, participant mothers with fewer than 4 antenatal visits accounted for 9.6% of the total, compared to 6% in the non-intervention group. Table 4 Most participants displayed normal hemoglobin levels (n=242). However, a higher percentage of mildly anemic mothers was observed in the non-intervention group (21%) compared to the intervention group's figure of 16.2%, as demonstrated in Table 4.2.1.

Figure 1 Distribution of Mothers with Episiotomy Percentage in Groups

n=334

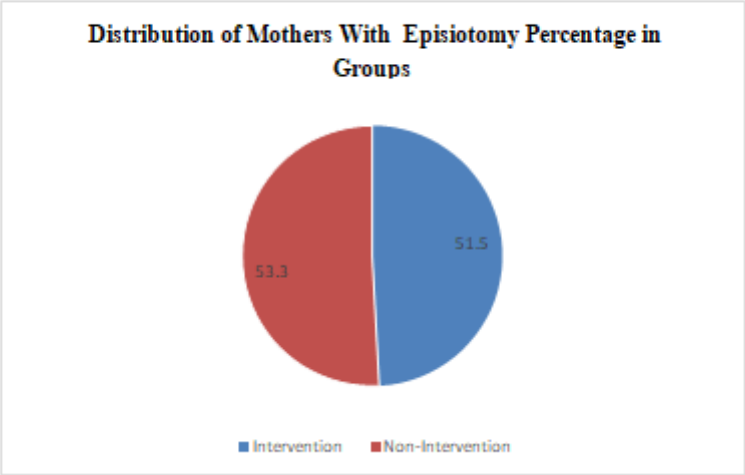

Figure 1 Illustrates that in the case group, 51.5% of instances involved episiotomy, while the remaining 48.5% did not require episiotomy similarly within the non-intervention group 53.3% of cases involved episiotomy while the remaining 46.7% did not necessitate this procedure.

9 - MAJOR FINDINGS OF THE STUDY

Determinants of Immediate Adverse Pregnancy Outcomes

1. High vaginal swabs culture report pre-delivery showed no growth, but 72 hours post-delivery 9.6% of non-intervention group mothers exhibited Candida albicans. A strong statistical link ($\chi 2 = 16.81$, df=1, $p < 0.001$) underscores the association between lack of intervention and postpartum fungal presence.

2. The Intervention group exhibited significantly better episiotomy wound healing compared to the 'Non-intervention' group at multiple time intervals: 6-10 hours (p=0.006, t=6.88), 20-24 hours (p=0.067, t=4.66), and notably superior at 40-48 hours (p<0.001, t=3.97).

3. The Intervention Group showed non-significant differences in pain intensity compared to the Non-intervention Group at 6-10 hours (t=0.85, p=0.091). However, at 20-24 hours and 40-48 hours, the Intervention Group reported significantly lower pain intensity levels compared to the Non-intervention Group (t=5.12, p<0.001 and t=2.88, p<0.001 respectively)

4. The study highlights the significant effectiveness of the perineal care bundle intervention, incorporating antiseptic solutions and sterile pads in notably reducing perineal infections during puerperal care. These compelling findings underscore the usefulness and potential impact of this intervention in clinical practice.

5. The study concluded that maternal age, religion, place of residence, occupation, monthly family income, type of marriage frequency of antenatal care visits, smoking, and alcohol habits influence the immediate adverse pregnancy outcomes. Recognizing the impact of these factors is crucial for providing tailored and effective nursing care services.

10. CONCLUSION

The implementation of a perineal care bundle intervention involving antiseptic solutions and regular

changes of sterile pads demonstrated positive effects on postnatal mothers' episiotomy wound healing. This was evidenced by lower REEDA scale scores, reduced pain levels accessed via VAS, and the absence of growth in high vaginal swab cultures. However the establishment of a standardized perineal care protocol, including regular changes of pads for mothers remains an unmet need in healthcare facilities. As an alternative to prevent infections, considering the use of 5% betadine (20 ml normal saline and 5 ml betadine) could be beneficial. It's imperative to acknowledge that various factors, including age, monthly family income, occupation, dietary patterns and residence type of marriage and frequency of antenatal care visits may significantly impact immediate adverse pregnancy outcomes. Emphasizing consideration of these factors is essential in delivering effective healthcare services

Effectiveness of Perineal Care Intervention in the Study

In the intervention group, there was no organism growth observed in the perineal area.

Reduced post-episiotomy pain was evident.

Facilitated early post-episiotomy recovery

No significant difference was noted in the length of post-episiotomy hospital stay or post-episiotomy complications

11- IMPLICATIONS:

IMPLICATION FOR NURSING SERVICE

Nursing Practice

Proactive Perineal Care: Nurses should proactively administer perineal care interventions within 72 hours post-delivery in clinical practice.

Essential Measures for Care: Utilizing a 5% betadine solution in combination with normal saline and changing sterile pads as necessary should be deemed essential measures. These interventions aim to alleviate discomfort, enhance comfort, and mitigate the risk of infections.

Incorporation into Standard Procedures: Nurses ought to integrate these practices into standard procedures, not only within hospital settings but also in community health centers and primary healthcare facilities.

Nursing Research

Role of Nursing Research: Nursing research plays a pivotal role in investigating the effectiveness of perineal care bundle interventions, incorporating antiseptic solutions and timely replacement of sterile pads for laboring mother’s pre and post-delivery. Future research endeavors hold the potential to contribute to the development of a comprehensive and standardized perineal care protocol.

Understanding Adverse Pregnancy Outcomes: Furthermore delving deeper into the factors influencing immediate adverse pregnancy outcomes is imperative. Such exploration can yield valuable insights for mitigating associated risks, thereby elevating the quality of care for both mothers and newborns.

Nursing Administration

Training Programs for Nurses: Nurse Administrators should implement in- service training programs focusing on the importance of perineal care interventions using a combination of 5% betadine and

normal saline and apply sterile pads. These initiatives will empower nurses with the requisite knowledge and skills for delivering top-tier patient care.

Standardized Guidelines Implementation: Incorporating standardized guidelines within nursing services is crucial. These guidelines not only prevent potential complications but also ensure comprehensive patient well- being. They serve as invaluable tools enabling consistent and high-quality care delivery while prioritizing patient safety and health.

Nursing Education

Nursing Role: Nurses have a vital role in offering comfort, particularly to laboring patients.

Curriculum Emphasis: The nursing curriculum should prioritize developing advanced knowledge and skills in perineal care, including the changing of sterile pads and mirroring practices in various healthcare settings.

Curriculum Integration: The study recommends integrating methods of perineal care bundles into the nursing curriculum.

Continued Education: In-service education programs and workshops are essential for educating nursing staff on perineal care bundle methods, enabling skill enhancement.

12 - RECOMMENDATIONS

Explore Alternative Methods: Conduct a similar study using alternative methods of perineal care such as chlorhexidine.

Study Post-Cesarean Section Mothers: Conduct a similar study focusing on other mothers who have undergone cesarean sections.

Multi centric Investigation: A multi centric study might offer a better understanding of perineal care.

Compare Delivery Methods: Conduct a comparative study between normal vaginal delivery and cesarean section procedures.

Compare Treatment Efficacy: Conduct a comparative study between 5% betadine wash and sitz bath for assessing episiotomy wound healing and pain intensity.

13 - LIMITATIONS

Single centric study: The study's single-centric nature might restrict the generalization of results to the broader population.

Limited Evaluation of Methods: The study has evaluated only a few alternative methods and techniques of perineal care, potentially limiting the scope of the findings.

Small Sample Size: The small sample size limits both generalizability and statistical power, emphasizing the need for larger, more diverse samples in future research to enhance validity and reliability

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