



## Effectiveness of protocol on prevention of perineal tear in terms of knowledge and practices of staff nurses in selected Hospitals of Haryana

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### Abstract

**Background:** To become “mother” is a beautiful gift given by God to woman. Giving birth is a powerful and life changing event with a lasting impact on women and their families. Perineal injuries can lead to pain, bleeding, scarring dyspareunia, infection, urinary or fecal incontinence and interference with establishment of breast feeding.

**Objectives:** The current study was undertaken with objectives to assess the effectiveness of protocol on prevention of perineal tear in terms of knowledge and practices of staff nurses.

**Method:** Quasi Experimental One Group Pre Test Post Test Research Design was used. Total 30 staff nurses were selected from Civil Hospitals of district Ambala and Yamunanagar, Haryana by using Total Enumeration sampling technique. Structured knowledge questionnaire and observation checklist was used to collect data after established validity and reliability.

**Findings:** SPSS version 20 was used for statistical analysis. In the pretest knowledge mean score was  $12.83 \pm 3.64$  and posttest knowledge mean score was  $25.47 \pm 1.43$ . The posttest knowledge mean score is significant higher than the pretest knowledge mean score. The calculated ‘t’ value (21.77) was significant at 0.05 level. After administration of protocol, practices of staff nurses ( $t=6.34$ ) on prevention of perineal tear improved. There was a mild negative correlation ( $r = -.318$ ) in knowledge and practice of staff nurses on prevention of perineal tear after administration of protocol.

**Conclusion:** Based on the findings of the study it can be concluded that protocol was significantly effective for enhancing knowledge and improving practices of staff nurses on prevention of perineal tear in selected hospitals of Haryana.

**Keywords:** knowledge, practices, protocol, perineal tear, staff nurses

### 1. Introduction

Pregnancy and child birth is a cherished dream for mother and bring joy to the whole family. It is one of the vital events which need special care from conception to postnatal period. Every mother wants to enjoy nine months period with the baby inside her. The onset of motherhood presents a unique set of physical, emotional and psychological challenges. Maternal injuries following childbirth process is quite common and contributes significantly to maternal morbidity and even to death<sup>[1]</sup>.

Every year, more than 200 million women become pregnant. Most pregnancies end with the birth of a live baby to a healthy mother. For some, however, childbirth is not the joyous event; it is a time of pain, fear, suffering and even death. Because of difficulties associated with human birth, women often require assistance during delivery<sup>[2]</sup>.

Approximately 70% of women who have a vaginal birth will experience some degree of damage to the perineum, due to a tear, and will need stitches. This damage may result in perineal pain during the two weeks after the birth, and some women experience long-term pain and discomfort during sexual intercourse<sup>[3]</sup>.

Maternal Morbidity refers to the unhealthy state or medical complications in women caused by pregnancy, labor or delivery. A morbidity rate looks at the number of cases of a disease occurring in a given number (usually 100,000) of the pregnant population. Various causes of maternal morbidity that is VVF, RVF, Perineal tear, Uterine prolapsed, Vaginal stenosis, PID, Infertility, DIC, Amniotic fluid embolism, Blood transfusion reaction, Hysterectomy. Perineal trauma can occur via a spontaneous tear and is classified by the degree of trauma sustained. Injury to the perineal skin only is called first degree tear. Injury to perineum involving perineal muscles but not involving the anal sphincter is called second degree. Injury to perineum involving the anal sphincter complex is known as third degree tear (external and internal anal sphincter). Injury to perineum involving the anal sphincter complex (EAS and IAS) and anal epithelium is known as fourth degree tear<sup>[4]</sup>.

Perineal trauma during child birth is very common, occurring in about 40% of women during their first birth and about 20% in subsequent births. It is a cause for concern for many women and in some countries has led to a large increase in the number of women requesting for elective caesarean sections. Severe

perineal lacerations are associated with large babies, short 2nd stage of labor, and lack of perineal support, rigid perineum and instrumental vaginal deliveries. Tears are more common in women having their first vaginal birth and ranges from small nicks and abrasions to deep lacerations affecting several pelvic floor muscles [5].

Supportive care may be defined as non-medical care that is intended to ease a woman's anxiety, discomfort, loneliness and exhaustion, to help her draw on her own strengths and to ensure that her needs and wishes are known and respected. Education is the key component in improving the knowledge of staff nurses, the nurses could be prepared in providing comprehensive nursing care and giving more emphasis on the management of normal labor. It could also include in the education which should help the staff nurses to identify clients who are at risk for perineal tear and modify the care for preventing complications. The intra partum nurses can put a great value on advocate the laboring women to practice the perineal care techniques used to decrease the perineal trauma [7].

Teaching methods are the stimulation, guidance, direction and encouragement for learning and also the means to achieve the desired educational objectives. Selection of right method of teaching is important to impart knowledge in an efficient manner, and it also inculcates desirable values and proper attitudes and habits of work among the staff nurses. There are number of methods of teaching like lecture cum demonstration, group discussion, simulation, video teaching etc.

## 2. Materials and Methods

### 2.1 Subject and Setting

Quasi-experimental One Group Pre Test Post Test Research Design conducted in Civil Hospitals of selected Districts of Haryana (Ambala and Yamunanagar) from August 2017 to December 2017. Staff nurse who were working as a staff nurse in labor room and labor ward of Civil Hospitals in Ambala and Yamunanagar were included in this study. Total Enumeration Sampling technique was used to select 30 staff nurses.

### 2.2 Ethical Consideration

Ethical approval was taken by the institutional ethical committee (IEC NO 979) of Maharishi Markandeshwar (DEEMED TO BE UNIVERSITY) Mullana, Ambala, Haryana. Formal administrative permission was taken from Civil Surgeon, Civil Hospitals of Ambala and Yamunanagar in Haryana. Written informed consent was obtained from the study subjects regarding their willingness to participate in the research study.

### 2.3 Validity and Reliability

Content validity of the tools was established by submitted to seven experts. Five experts from Obstetrical and Gynecological Nursing department, two experts from Obstetrics and Gynecology departments. Experts were requested to judge the items for clarity relevance, appropriateness, and meaningfulness for the purpose of the study. Reliability of the structured knowledge questionnaire and observation checklist was assessed through KR-20 and inter-rater (Cohen's kappa)

method and it was found to be 0.83 and 0.9 respectively.

## 2.4 Instrument and data collection

### Questionnaire was divided into three sections

1. Selected sample characteristics consist of total 9 items [age, gender, qualification, type of hospital (previously worked in), total year of experience, experience of working in labor room (previously), conducted any delivery, if yes, how many, any in service education related to labor process)].
2. A structured knowledge questionnaire was comprised of 30 multiple choice questions to assess the knowledge of staff nurses on prevention of perineal tear. Where includes: concept of perineum and perineal tear, causes, episiotomy and complication for perineal tear, prevention of perineal tear. Each item had only one correct option and 1 mark was given for correct response and zero mark was given for incorrect response. Knowledge score was categorized into four levels that is very good (>75%), good (61-75%), average (50-60 %), below average ( $\leq$ 50%).
3. An observation checklist was prepared to assess the practices of staff nurses on prevention of perineal tear. It comprised of 71 items on personal protect equipments (for staff nurses), articles used during delivery, mother's preparation, conduction of delivery, disseminating the articles, record the procedure. Each item was provided with responses Yes(Y) and No (N) and was scored as 1 and zero respectively. Practice score was categorized into four levels that is excellent (>85%), good (75-85%), fair (50-75 %), poor (<50%).

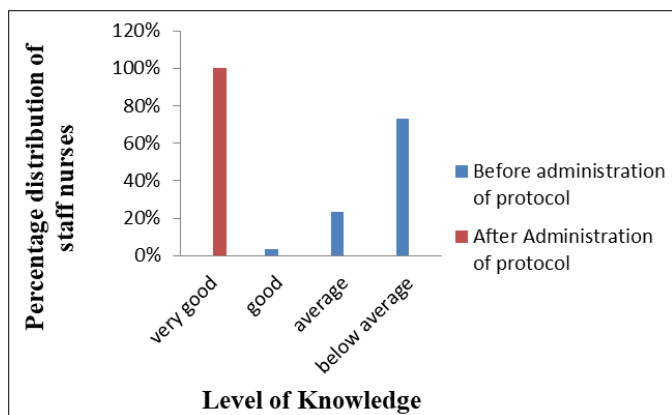
### 2.5 Intervention

Researcher approached staff nurses in all three shifts (morning, evening or night) to collect the data. On day one, before administration of protocol, pretest of knowledge was taken and practices were assessed while conducted a delivery on individual mother for each staff nurse. After pretest, individual teaching regarding protocol on prevention of perineal tear was given to staff nurses with the use of power point presentation and one demonstration regarding correct method of delivery was conducted by researcher to demonstrate right practices. Posttest was collected after 15 days of intervention. Protocol prepared by the researcher on prevention of perineal tear was displayed in labor room of each setting selected for the study.

## 3. Results

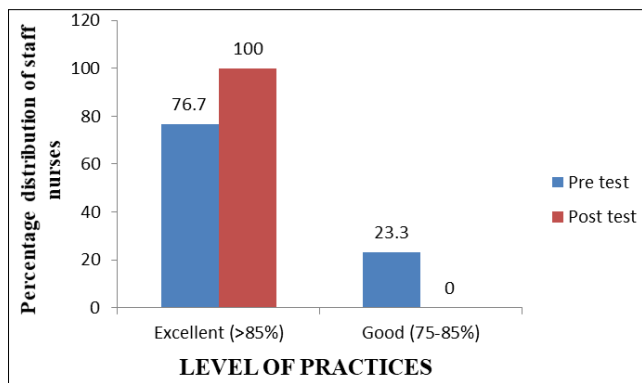
Data were analyzed using SPSS-20. The data obtained in the study was planned to be analysed using both descriptive and inferential statistics i.e. mean, median, standard deviation, t-test, One way ANOVA test, correlation test. One third (36.7%) of staff nurses were in the age group of 25-30 years. All (100%) of staff nurses were females. Majority (83.3%) of staff nurses were GNM by qualification. More than half (56.7%) of staff nurses has worked in the private hospital. One third (33.3%) of staff nurses had 1-3 years and >5 years of experiences. Majority (86.7%) of the staff nurses had experience of working in labor room. All (100%) of the staff nurses had conducted deliveries. All (100%) of the staff

nurses had conducted more than ten deliveries. More than half (66.7%) of the staff nurses had attended in service education related to labor process.



**Fig 1:** Bar Graph showing Percentage Distribution of Staff Nurses in terms of Level of Knowledge Before and After Administration of Protocol on Prevention of Perineal Tear.

Before administration of protocol, nearly three fourth (73.33%) of staff nurses had below average level of knowledge, followed by 23.33% of staff nurses had average level of knowledge and only 3.33% had good level of knowledge, none of the staff nurses had very good level of knowledge on prevention of perineal tear. whereas after administration of protocol, all (100%) of staff nurses had very good level of knowledge on prevention of perineal tear.



**Fig 2:** Bar Graph showing Percentage Distribution of Staff Nurses in terms of Level of Practices Before and After Administration of Protocol on Prevention of Perineal Tear.

**Table 5:** Mean, Mean difference, Standard Deviation of Difference Standard Error of Mean Difference and ‘t’ value in terms of Percentage of Practice Score of Staff Nurses Before and After Administration of Protocol on Prevention of Perineal Tear.

Practice score	Mean	M <sub>D</sub>	S <sub>D</sub>	S <sub>E</sub> M <sub>D</sub>	‘t’ value	df	p value
Before administration of protocol	88.28						
		4.34	3.75	0.68	6.34	29	.000*
After administration of protocol	92.63						

Minimum score=00\*t (29) = 2.045 Maximum score= 71, Maximum percentage score=100 \*\*highly significant (p≤0.00)

That mean, mean difference, standard deviation of difference standard error of mean difference and ‘t’ value of practice score of in terms of percentage of staff nurse before and after

**Table 1:** Range, Mean, Standard Deviation and Median of Knowledge Score of Staff nurses before and After Administration of Protocol on Prevention of Perineal Tear.

Practice Score	Range	Mean ± SD	Median
Before administration of protocol	5-20	12.83 ± 3.64	13
After administration of protocol	23-28	25.47 ± 1.43	25

Minimum score=00 Maximum score= 30

Data presented that mean knowledge score of staff nurses (25.47±1.43) after administration of protocol was higher than the mean knowledge score (12.83± 3.64) of staff nurses before administration of protocol

**Table 2:** Range, Mean, Standard Deviation and Median in terms of Percentage of Practice Score of Staff Nurses Before and After Administration of Protocol on Prevention of Perineal Tear.

Practice Score	Range	Mean% ± SD	Median
Before administration of protocol	81.2-95.2	88.29 ± 4.19	89.25
After administration of protocol	86 – 97.1	92.63 ± 2.84	92.95

Minimum score=00, Maximum score= 71, Maximum percentage score=100

Data presented that mean percentage of practice score (92.63 ± 2.84) of staff nurses after administration of protocol was higher than the mean percentage of practice score (88.29 ± 4.19) of staff nurses before administration of protocol.

**Table 3:** Mean, Mean Difference, Standard Deviation of Difference, Standard Error of Mean Difference and ‘t’ value of Knowledge Score of Staff Nurses Before and After Administration of Protocol on Prevention of Perineal Tear.

Knowledge score	Mean	M <sub>D</sub>	S <sub>D</sub>	S <sub>E</sub> M <sub>D</sub>	‘t’ value	df	P value
Before administration of protocol	12.83						
		12.63	3.17	0.58	21.7	29	.000*
After administration of protocol	25.50						

Maximum score=0\*t (29) =2.0, Minimum score=30 \*\*highly significant (p≤0.00)

The mean posttest knowledge score of staff nurses were significant higher than their mean pretest knowledge score. The computed ‘t’ value (21.77) which is greater than then the table value 2.0 (p<0.05) which represents that the mean difference in knowledge score before and after protocol was true difference and not by chance.

administration of protocol on prevention of perineal tear. All of these above values are calculated in percentage as the maximum score were varying for staff nurses. The mean post

test practice score of staff nurses where significant higher than their mean pretest practice score. The computed 't' value (6.34) which is greater than then the table value 2.0 ( $p < 0.05$ )

Which represents that the mean difference in practice score before and after administration of protocol was true difference and not by change.

**Table 6:** Item wise Frequency and Percentage Distribution of Practices of Staff Nurses before Administration of Protocol on Prevention of Perineal Tear N=30

Sr. No.	Item	Before administration of protocol f (%)	After administration of Protocol f (%)
1.	Cleans the perineal area from above downward with cotton swabs dipped in antiseptic lotin	12 (40%)	24 (80%)
2.	Supports the perineum with the other hand and covers the anus with a pad held in position by the hand	18 (60%)	25(83.33%)
3.	Tells the mother to take deep breaths and to bear down only during contractions.	22 (73.33%)	25(83.33%)
4.	Give timely episiotomy in correct manner (n=12)	09 (75%)	11(91.66%)
5.	Make a single cut 3-4 cm long in a medio – lateral direction	09(75%)	12(100%)
6.	If delivery of the head does not follow immediately, apply pressure to the episiotomy site between contraction, using a piece of gauze, to minimize bleeding.	09 (75%)	11(91.66%)
.	Control delivery of the head to avoid extension of the episiotomy (n=12)	09 (75%)	11(91.66%)
8.	Fundal pressure is not given.(n=30)	13 (43.3%)	14(46.66%)
9.	If yes,Tear occur after fundal pressure. (n=17*,16**)	12 (70.5%)	8(50%)
10	Episiotomy is not extended (n=12)	5(41.66%)	7(58.33%)
11	If yes, tear occur after episiotomy. (n=7*,5**)	5(71.4%)	4 (80%)

\* Before administration of protocol \*\*after administration of protocol

Before administration of protocol three fourth (75%) of the staff nurses had given timely episiotomy in correct manner during delivery whereas after administration of protocol most (91.66%) of the staff nurses had given timely episiotomy in correct manner during delivery. Before administration of protocol three fourth (75%) of the staff nurses had made a single cut 3-4 cm long in a mediolateral direction during episiotomy whereas after administration of protocol all (100%) of the staff nurses tells had made a single cut 3-4 cm long in a mediolateral direction during episiotomy. Before administration of protocol, nearly half (43.3%) of cases fundal pressure was not given and in 70.5% cases tear occurred after fundal pressure, whereas after administration of protocol fundal pressure was not given in 46.6% cases during delivery and in 50% cases tear occurred after fundal pressure.

#### 4. Discussion

The finding of study further revealed that, one third (33.3%) of staff nurses were between the age group of 26-30 years. The study finding were consistent with the study conducted by Philomena Fernandes *et al.* [8] to assess the knowledge and practices on prevention of perineal tear amnog staff nurses showed that 32.5% staff nurses were in the age group of 26-30years.

The finding of study further revealed that, less than third fourth of staff nurses (73.3%) had knowledge level below average, (23.3%) staff nurses had knowledge level average. These findings were inconsistent with the study conducted by Philomena Fernandes *et al.* [8] to assess the knowledge of staff nurses on prevention of perineal tear in which staff nurses (37.5%). had knowledge level below average, (60%) staff nurses had knowledge level average on prevention of perineal tear.

The finding of study further revealed that, that more than half (60%) of the staff nurses had third degree tear occurred after extension of the episiotomy. These findings were inconsistent

with the study conducted by Ann Morris *et al.* [9] to investigate healthcare professionals' clinical knowledge in assessment and classification of perineal tears in connection with childbirth. The findings showed that 15% of staff nurses had third degree tear occurred after extension of the episiotomy.

The finding of study further revealed that, three fourth (75%) of staff nurses had performed mediolateral episiotomy during delivery. These findings were inconsistent with the study conducted by Anh T Trinh1 *et al.* [10] to determine the knowledge, attitudes and experience of episiotomy use among obstetricians and midwives. The finding revealed that (100%) midwives had performed mediolateral episiotomy during delivery. Similarly findings were inconsistent with the study conducted by Kaled Zimmo *et al.* [11] to determine the diagnosis and repair of perineal injuries: knowledge before and after expert training-a multicentre observational study among Palestinian physicians and midwives. The findings revealed that (23.3%) midwives had performed mediolateral episiotomy.

According to findings of the study, it was found that 20% of staff nurses had second degree tear occurred after extension of the episiotomy. These findings were consistent with the study conducted by K. Brandie *et al.* [12] investigated the incidence and extent of perineal trauma with respect to a variety of risk factors. The findings showed that 18% of staff nurses second degree tear occurred after extension of the episiotomy.

There is some limitation of the study. Small sample size can hinder the generalization of the findings.

#### 5. Conclusion

The study was conducted to Base on the findings of the study it can be concluded that protocol was significantly effective for enhancing knowledge and improving practices of staff nurses on prevention of perineal tear in selected hospitals of Haryana.

## 6. Recommendation

The researcher further recommended that the study can be replicated on larger sample to validate the findings and make generalizations and more publication and follow up for nursing protocol for the prevention of perineal tear should be adopted based on the identified risk factors and taking into consideration the importance of perineal management techniques and avoidance of unnecessary vaginal examination and fundal pressure during the second stage of labor.

## 7. Conflict of interests

The researchers declare that there is no conflict of interests regarding the publication of this paper.

## 8. Acknowledgement

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