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EFFECTIVENESS OF THE DEMONSTRATION METHOD REGARDING PLACENTAL EXAMINATION AMONG STAFF NURSES

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ABSTRACT

Background: The placenta is fundamentally a foetal organ with a limited life span. By virtue of its structure, maturational features, and interface with maternal circulation and inner uterus, it can provide valuable diagnostic information about the existence of adverse uterine condition. The examination of placenta hold information related to fetal and maternal morbidity. The nurse must carefully examine the placenta and its membranes as soon as possible.

Aim: The aim of present study was to assess the effectiveness of demonstration method regarding placental examination among staff nurses in order to improve their practice and skills regarding placental examination to prevent maternal and neonatal complications.

Methodology: Pre experimental research design was selected for the study and the study was conducted on 40 staff nurses who are working in selected maternity hospitals of Amritsar, Punjab. Purposive sampling technique was used to select the sample. Tool used in this study was socio demographic profile to assess the personal information of the subjects and observational checklist to assess the practice regarding placental Examination among staff nurses.

Result: Major findings of the study reveals that on comparing mean difference between pre demonstration and post demonstration practice regarding placental examination was calculated by t-test and the value was (15.194) which was found to be statistically highly significant at $p<0.001$. Association of post demonstration practice regarding placental examination among staff nurses with selected demographic variables found to be statistically non significant at $p<0.05$ level of significance.

Key words: placental examination, demonstration practice, staff nurses.

INTRODUCTION

A healthy placenta is the single most important factor in producing a healthy baby. The placenta, which is in fact part of the fetus, is critical for all aspects of pregnancy from implantation to delivery.(1) The human placenta is a transitional organ, a mediator between the mother and the fetus for physiologic exchange processes. It is genetically programmed to last for 9 months. Since it consists of maternal and fetal parts, its cells are of two different genotypes. This biologic situation has important immunologic consequences, since the feto-placental complex can be seen as a natural, allergenic transplant that is resistant to rejection.(2)

In humans, the placenta usually has a disc shape, but size varies vastly between different mammalian species. The placenta averages 22 cm (9 inch) in length and 2–2.5 cm (0.8–1 inch) in thickness, with the center being the thickest, and the edges being the thinnest. It typically weighs approximately 500 grams (just over 1 lb). It has a dark reddish-blue or crimson color. It connects to the fetus by an umbilical cord of approximately 55–60 cm (22–24 inch) in length, which contains two umbilical arteries and one umbilical vein. The umbilical cord inserts into the chorionic plate (has an eccentric attachment). Vessels branch out over the surface of the placenta and further divide to form a network covered by a thin layer of cells. This results in the formation of villous tree structures. On the maternal side, these villous tree structures are grouped into lobules called cotyledons. The maternal surface is dark red in color and is made up of 15 to 20 cotyledons, which are divided by septa. The outer appearance is shiny and white in nature due to the chorionic plate and the amnion covering. Insignificant changes can occur, like infarctions related to the depositing of fibrin, and also the surface can seem gritty due to lime salt deposits.(3)

The placenta forms a functional unit between the mother and the fetus. Therefore, any pathological event that concerns the mother or the fetus will influence the normal function of the placenta, occasionally resulting in morphological change. Severe abnormalities of the placenta may lead to adverse fetal outcome. However, placental lesions are not necessarily the cause of unfavourable outcome, and some structural changes may be the consequences of poor fetal condition. The placenta is an easily available specimen and the costs of a routine pathological examination are moderate.(4)

A one-minute examination of the placenta performed in the delivery room provides information that may be important to the care of both mother and infant. The findings of this assessment should be documented in the delivery records. During the examination, the size, shape, consistency and completeness of the placenta should be determined, and the presence of accessory lobes, placental infarcts, hemorrhage, tumors and nodules should be noted. The umbilical cord should be assessed for length, insertion, number of vessels, thromboses, knots and the presence of Wharton's jelly. The color, luster and odor of the fetal membranes should be

evaluated, and the membranes should be examined for the presence of large (velamentous) vessels. Tissue may be retained because of abnormal lobation of the placenta or because of placenta accreta, placenta increta or placenta percreta. Numerous common and uncommon findings of the placenta, umbilical cord and membranes are associated with abnormal fetal development and perinatal morbidity. The placenta should be submitted for pathologic evaluation if an abnormality is detected or certain indications are present.(5)

Pregnancy and childbirth remain major causes of female mortality, and over half a million women die each year as a direct consequence. Hence, improving maternal health was designated the 5th of the Millennium Development Goals, with the aim of reducing maternal mortality between 1990 and 2015 by three quarters. The majority of these deaths occurs because of obstructed labour, infection and haemorrhage, and should be preventable by improved obstetric care. Elective preterm delivery is also frequently related to abnormal placentation, and accounts for approximately 60% of babies weighing less than 1000g. Hence, the consequences of defective placentation include mortality and severe morbidity, and associated health care costs both in the short and long term. There is thus an urgent and persuasive need for more research into the development and function of the placenta.(6)

Around the world, approximately 830 women die daily from pregnancy or childbirth-related complications. Almost all (99%) of these maternal deaths occur in developing nations. One of the targets under Sustainable Development Goal III is: “to reduce the global maternal mortality ratio to less than 70 per 100 000 births between 2016 and 2030”. The primary causes of maternal deaths are, namely: hemorrhage (mostly bleeding after childbirth), sepsis, and pre-eclampsia.(7)

Based on the review of literature and her clinical experience of the investigator came across that most of fetal and maternal morbidity and mortality are related to placental health. Many neonatal complication like still born, cerebral palsy, IUGR, hypospadiasis, neurological deficit, fetal death and maternal complication such as puerperal sepsis, post partum hemorrhage etc, this is indirectly related to placental health. So the examination of placenta can provide the evidence needed to determine the biological and morphological cause of prenatal or developmental abnormality. Hence the investigator determined to explore the practice level of staff nurses at selected hospital regarding placental examination, so as to prevent further maternal and neonatal complication.

OBJECTIVES

1. To assess the pre demonstration practice regarding placental examination among staff nurses.
2. To assess the post demonstration practice regarding placental examination among staff nurses.

3. To compare pre and post demonstration practice regarding placental examination among staff nurses.
4. To determine the association of post demonstration practice regarding placental examination among staff nurses with selected demographic variables.

MATERIAL AND METHODOLOGY

Research Approach: Quantitative research approach

Research Design: Pre-Experimental research design

Research setting: . Aggarwal nursing home, Amritsar, Punjab.
- Dhingra maternity hospital, Amritsar, Punjab
- Beri maternity hospital, Amritsar , Punjab

Target population: Staff nurses

Accessible population: Staff nurses who are working in maternity hospitals of Amritsar, Punjab.

Exclusion criteria: Unregistered nurses**,** male staff nurses

Inclusion criteria

- Staff nurses who are working in maternity hospitals
- Qualified and registered as ANM, GNM, B.Sc. Nursing, M. Sc Nursing

Sample and sampling technique

- Staff nurses who are working in (labour room) of selected maternity hospitals.
- Purposive sampling technique (N=40)

Selection and development of tools

Part 1- Socio-demographic profile.

This part includes five items for obtaining personal information of staff nurses such as: age, education, and experience in maternity hospitals, attended inservice education program, nurse patient ratio.

Part 2- Observational checklist.

It was a observational checklist to assess the practice regarding placental examination among staff nurses. It consists of nineteen items. Each item is scored as 1 if YES and 0 if NO. Hence, minimum score was 0 and maximum score was 19.

Criterion measure

Level of skills	**Total scores**	**%**
Unsatisfactory	0-13	<70
Satisfactory	14-19	≥70

DATA ANALYSIS & INTERPRETATION

Table 1 depicts the frequency and percentage distribution of staff nurses according to pre demonstration practice regarding placental examination. It showed that majority (90%) of staff nurses had unsatisfactory skills and only one tenth (10%) of staff nurses had satisfactory skills regarding placental examination.

Therefore, it can be concluded that in pre demonstration practice, most of staff nurses had unsatisfactory skills regarding placental examination.

Table1: Pre-demonstration practice regarding placental examination among staff nurses.

N=40

Level of skills	**N**	**%**	**Mean**	**SD**
Unsatisfactory	28	90.0	6.18	2.262
Satisfactory	12	10.0	9.75	2.734

Maximum scores = 19
Minimum scores =0

Table 2 reveals the frequency and percentage distribution of staff nurses according to post demonstration practice regarding placental examination. It showed that majority two third (70%) of staff nurses had unsatisfactory skills and remaining (30.0%) has satisfactory skills regarding placental examination.

Hence,concluded that in post demonstration practice, majority of staff nurses shows unsatisfactory skills regarding placental examination.

Table-2: Post demonstration practice regarding placental examination among staff nurses.

N =40

Level of skills	n	%	Mean	SD
Unsatisfactory	28	70.0	10.75	1.602
Satisfactory	12	30.0	14.25	0.622

Maximum score =19
Minimum score =0

Table 3 depicts the comparison of pre demonstration and post demonstration practice regarding placental examination among staff nurses. It showed that the pre demonstration Mean and SD was 7.25 $\pm$ 2.898 and post demonstration mean score and SD was 11.80 $\pm$ 2.127. The mean difference between pre demonstration and post demonstration practice regarding placental examination was calculated by t-test and the value was (15.194) which was found to be statistically highly significant at $p<0.001$

Hence, null hypothesis was rejected. It can be concluded that demonstration on placental examination has significant effect in improving the skills of placental examination among staff nurses

Table-3: Comparison between pre and post demonstration practice regarding placental examination among staff nurses.

N =40

Level of skills	Mean	SD	df	t
Pre demonstration	7.25	2.898		
Post demonstration	11.80	2.127	39	**15.194*****

Maximum score =19
Minimum score = 0
*****significance level p=<0.001**

CONCLUSION

In the present study, analysis showed that majority (90%) of staff nurses had unsatisfactory skills and only one tenth (10%) had satisfactory skills regarding placental examination. In post demonstration practice majority (70%) of staff nurses had unsatisfactory skills and less than one third (30.0%) has satisfactory skills regarding placental examination. The mean score of day 7^{th} was 11.12, day 10^{th} was 11.65 and day

13th was 12.65. The mean difference between pre demonstration and post demonstration practice regarding placental examination was calculated by t-test (15.194) and the t value was found to be statistically highly significant at $p<0.001$. Hence, concluded that demonstration on placental examination has significant effect in improving the skills of placental examination among staff nurses. So, it is the responsibility of the hospital administrators to organize continuing education and training programme for nurses regarding placental examination and also aware them regarding new guidelines on placental examination so as to maintain high level of health care in maternity hospitals and also encourage nurses to carry more and more researches on placental examination.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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