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## Assess the characteristics of placenta and neonatal outcome among mothers

**Kumari Mamta and Memchoubi K**

### Abstract

**Introduction:** Beating of life inside the womb make a women life glorious and that beating is protected by the placenta. Generation of life ends with that role of father's contribution, but that moment onwards the role of the mother begins. The 9 month journey of the fetus inside the womb protected and supported by the placenta. Placenta is very essential and highly feto-material organ which maintain the normal pregnancy and fetus development. The present study was conducted to assess the characteristics of placenta and neonatal outcome.

**Purpose:** The purpose of the study was to assess the Neonatal outcome, to associate the characteristics of Placenta with neonatal outcome. To associate the characteristics of Placenta with selected demographical variables, To associate Neonatal outcome with selected demographical variables.

**Material and methods:** The research approach adopted for this study quantitative approach and research design adopted for the study Descriptive design. Using non probability purposive sampling technique 100 mothers were enrolled for the study during their intra-natal period and monitored throughout.

**Results:** Observable and measurable placental outcome is significantly associated with APGAR score at 1 minute and APGAR score at 5 minute (p-value <0.05). Placental weight, and observable placental outcome and measurable placental outcome is associated with past medical history and history of minor ailments of pregnancy (p-value <0.05). Significant association is found between APGAR 5 minute and type of diet, neonate weight and chest circumference is associated with type of diet and past medical history, chest circumference and head circumference are associated with age, type of diet and past medical history, and history of minor ailments; reflexes are associated with BMI.

Keeping in view the research findings the same kind of research can be replicated in large setting. Placental examination and neonatal outcome should be checked to understand the co-relation between both.

**Keywords:** Placenta, neonatal outcome, mothers

### Introduction

Generation of life ends with that role of father's contribution, but that moment onwards the role of the mother begins. The 9 month journey of the fetus inside the womb protected and supported by the placenta. "Placenta" the word came from Latin word for cake, in Greek plakóenta/plakoúnta "flat, slab-like" structure <sup>[1]</sup>. Colostrum contains a large quantity of maternal antibodies that helps in the strengthening of baby's immune system. It also acts as a laxative, removes fetal wastes, called as meconium that is retained in the intestine <sup>[2]</sup>. The study found that there is a relation between birth weight and of the neonate as shown by Abubakar *et al.* <sup>[6]</sup> The placental weight is found to be "functionally significant" as it is related to villous surface area and to fetal metabolism <sup>[3]</sup> Neonatal mortality rate is 25.4 /1000 live birth in our country and 17/1000 live births in Maharashtra in the year 2018. The major causes of newborn deaths in India are as follows: birth asphyxia (20 per cent); pre-maturity/preterm (35 per cent); neonatal infections (33 per cent); and congenital malformations (9 per cent). In the United States, the ten most important reasons of infant mortality in 2012 responsible for 69.8% of all infant mortality. By birth, deformations and chromosomes abnormality, low birth weight, sudden infant death syndrome, maternal complications, in pregnancy, accidents, respiratory complications, bleeding disorder in newborn etc are some of the reasons of infant deaths. Blood supply towards the villi becomes attenuated. The embryonic villi atrophy, results in bald chorion. The opposite uterine wall provides blood supply to the villi from where they continue to grow, budding to form a accessory lobe.

### Aim:

To study assess the characteristics of placenta and neonatal outcome among mothers.

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**Objective of Study**

1. To assess the characteristics of Placenta.
2. To assess the Neonatal outcome.
3. To associate the characteristics of Placenta with neonatal outcome.
4. To associate the characteristics of Placenta with selected demographical variables
5. To associate Neonatal outcome with selected demographical variables

**Materials and Methods**

**Study Design:** Non Experimental Descriptive design

**Study Area:** selected hospital of Pune city.

**Sample Size:** 100

**Selection Criteria of Sample:** mothers from selected hospital of Pune city.

**Sampling Technique:** Non-probability Purposive sampling technique

**Study Population:** mothers from selected hospital of Pune city who meets the inclusion criteria.

**Inclusion Criteria**

- Mothers who have full term baby delivered vaginally.

**Exclusion Criteria**

Mothers with complications (intra natal and post natal)

**H0<sub>1</sub>:** There is no significant association between the characteristics (Observable and Measurable) of placenta with neonatal outcome at 0.05 level of significance.

**H0<sub>2</sub>:** There is no significant association between characteristics (Observable and Measurable) of placenta with selected demographical variables at 0.05 level of significance.

**H0<sub>3</sub>:** There is no significant association between neonatal outcomes (Observable and Measurable) with selected demographical variables at 0.05 level of significance.

**Description of the tool**

**Section 1 A:** Demographic Data

**Section I B:** Clinical History antenatal history

**Section 2 A:** A Perform to assess the observable characteristics of placenta

**Section 2 B:** Tool for the assessment of measurable characteristics of placenta

**Section 3 A:** APGAR Score

**Section 3-B a:** Performa to assess the neonatal outcome

**Section 3-C a:** Perform to assess the reflexes of neonates

**Method of data collection**

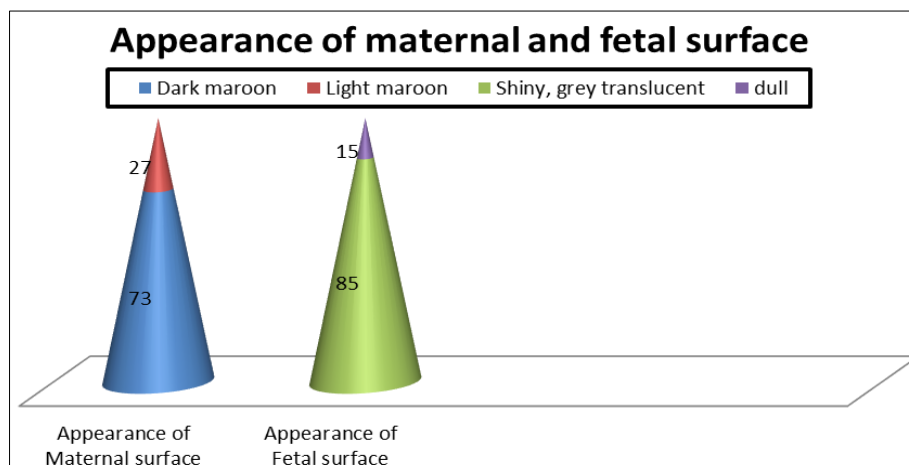
- Rationale of the study explained to the participants.
- Assurance will be given for maintaining confidentiality.
- Permission taken from the hospital authorities and samples.
- Test conducted using tool for data collection.

**Results, Discussion and Conclusion**

**Section 1. Description of Socio demographic Variables**

Demographic profile of students shows Maximum of the study population (i.e 51%) belongs to the age group of 25 to 30 years, 45% study population were Non-Vegetarian, 67% were found in normal BMI range of 18 to 25, Hemoglobin status of the study population reveals that maximum population (i.e 75%) were having moderate Anemia (Hb level <10 gm /dl), Most of The participants i.e 90% reported to have some past medical and/or surgical illness, Most of the study participants (i.e 70% ) have reported as primi and/or with second pregnancy, Maximum of the mothers (i.e 95%) understudy had gained normal weight as 6 to 10 kg throughout their pregnancy and Most of the study participants (i.e 89%) were reported of suffering from minor ailments.

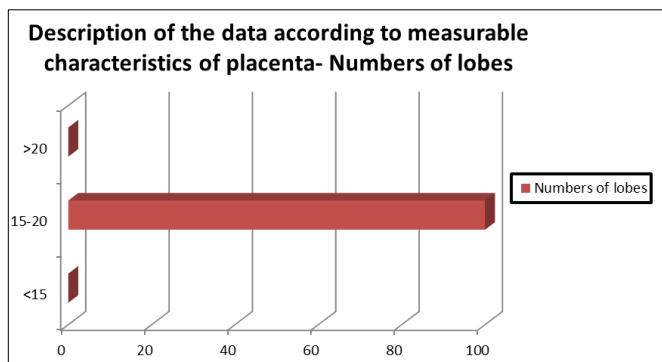
**Section 2.1:** Frequency and percentage distribution of the data according to observable characteristics of placenta shows that complete membrane were found in maximum (i.e 80%) of the placenta, maximum of the placenta (i.e 95%) the chorionic surface was present, 73% appearance of maternal surface was found as dark maroon, there was no calcium deposition in maximum of the placenta is 70%, 85% placenta there was no infraction present and 85% placenta there was no infraction present.



**Fig 1:** Bar diagram showing percentage distribution of the samples according to observable characteristics of placenta depending on appearance of maternal and fetal surface.

**Section 2.2:** Description of the data according to measurable characteristics of placenta.

It reveals that placenta under study were found as Discoid and oval in shape among 82%, maximum 92% of the placenta was found to have a diameter of 15 to 20 cm, central thickness of the placenta under study were found 2-2.5 cm is 95%, although the marginal thickness of the placenta under study were found 1-1.5 cm in 95%, maximum of the placenta 62% weighed < 500 gm, placenta under study were consist of 15 to 20 lobes, 2 arteries and 1 vein with umbilical cord length ranging from 40 to 50 cm AND all placenta under study were consist of 15 to 20 lobes, 2 arteries and 1 vein with umbilical cord length ranging from 40 to 50 cm.



**Fig 2:** Pie diagram showing percentage distribution of the samples according to measurable characteristics of placenta depends on the total number of lobes shows in the placenta.

**Section 3:** Frequency and percentage distribution of the data according to neonatal outcome.

**Section 3.1:** Frequency and percentage distribution of the data as per observable neonatal outcome.

**Table 1:** A Table describing frequency and percentage distribution of the data as per observable neonatal outcome. n=100

S. No	Observable Variables	f	%
1	<b>Reflexes</b>		
	Present	100	100
	Absent	0	0
2	<b>APGAR Scores at 1 minute</b>		
	7-10	90	90
	4-6	10	10
	0-3	0	0
3	<b>APGAR Scores at 5 minute</b>		
	7-10	94	94
	4-6	6	6
	0-3	0	0

Table depicts that data that newborn reflexes were present in 100% newborns under study. Observation (Fig 13) of APGAR at 1-minute of newborn shows that 90 % newborns had APGAR scores in the range of 7 to 10, 94%, newborns were found to have APGAR scores in the range of 7 to 10 in 5 min assessment.

**Section 3.2 Frequency and percentage distribution of the data as per measurable neonatal outcome.**

Section shows that maximum of the samples i.e 84% of the newborns under study were with birth weight between 2.5 Kg. to 3Kg

**Section 4:** This section deals with the association between study variables for this purpose the researcher have used inferential statistics.

**Section 4.1:** Association between the characteristics of placenta with neonatal outcome.

Association between two variables shape of placenta with head circumference, shape of placenta with reflexes, placenta diameter with chest and head circumference; center thickness of placenta with head circumference; marginal thickness of placenta with chest and head circumference; is significant. Observable placental outcome is significantly associated with APGAR score at 1 minute and APGAR score at 5 minute. Measurable placental outcome is also seen significantly associated with APGAR score at 1 minute, APGAR score at 5 minute and reflexes.

**Discussion**

The present study found that there is significant association between two variables shape of placenta with head circumference, shape of placenta with reflexes, placenta diameter with chest and head circumference; center thickness of placenta with head circumference; marginal thickness of placenta with chest and head circumference; is significant at 0.05 level of significance.

Observable placental outcome is significantly associated with APGAR score at 1 minute and APGAR score at 5 minute at 0.05 level of significance. Measurable placental outcome is also seen significantly associated with APGAR score at 1 minute, APGAR score at 5 minute and reflexes at 0.05 level of significance.

This study also shows significant association between APGAR 5 minute and type of diet, neonate weight and chest circumference is associated with type of diet and past medical history, chest circumference and head circumference are associated with age, type of diet and past medical history, and history of minor ailments; reflexes are associated with BMI.

**Recommendations**

1. A similar study can be replicated in different settings to strengthen the study findings.
2. A similar study can be replicated on large samples. This would provide invaluable evidence in the area of practice.
3. A similar study can be conducted with the placenta of mothers suffering from specific medical condition (like anemia, hypertensive disorder etc) with the newborn outcome.
4. A comparative study can be done on normal mothers placenta along with the placenta of mothers suffering from specific medical condition (like anaemia, hypertensive disorder etc) with the newborn outcome.

**Conclusion**

This study concluded that the Purpose of study was to assess the Characteristics of Placenta and Neonatal Outcome among Mothers. Examination of the placenta should be performed routinely and should be followed guidelines for placental examination in the delivery rooms to provide valuable information that are important to the care of both mother and new born. It is very easy and possible for the nurses to perform the assessment of placenta as well as the neonatal assessment to plan for a better care for the newborn and help to reduce maternal and fetal mortality.

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