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A PROSPECTIVE STUDY OF NEONATAL COMPLICATIONS AND BIRTH DEFECTS IN PAKISTAN

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ABSTRACT

Worldwide 7.6 million children died in 2010 before reaching their 5th birthday. Pakistan has the 3rdhighest rate of neonatal mortality. There are several reasons for neonatal death so it is important to investigate the factors and causes behind this tragedy. The aim of current study was to determine the most commonly occurring diseases in neonates and causes behind them. Data was collected from different hospitals and about 150 neonates were selected for analysis. The analysis shows that female babies correspond to 56% as compared to male that is 44%. The premature cases reported were 24% while the rest were mature/ normal. At delivery time, 48% infants were under-weight.66% of the babies were delivered via C-Sections while 26% by Episiotomy and remaining case were of Normal Vaginal Delivery (NVD).According to this study 46% of babies were normal and 42% were present with some complication whereas12% of infants were born with several birth defects. The most prevailing conditions in neonates were birth asphyxia, hypothermia, sepsis respiratory arrest, moaning ultimately death. So it is important to focus on antenatal care, effective referral system, increasing the literacy rate to minimize such complications can be avoided.

Key words: Neonates complications, Birth asphyxia, Low body weight, Birth defects.

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INTRODUCTION

Of the estimated 130 million infants born each year worldwide, 4 million die in the first 28 days of life **[1]**. Three-quarters of neonatal deaths occur in the first week, and more than one-quarter occur in the first 24 hours. Neonatal deaths account for 40% of deaths under the age of 5 years worldwide **[2, 3]**. Pakistan is a developing country with a population of 150 million. As there are two types of areas in Pakistan urban and rural. The health condition in Pakistan is generally very poor especially in rural areas due to lack of basic health facilities. Low literacy and high fertility coupled with poor economy translates into high morbidity and mortality. Women and children are the most vulnerable segments in terms of health. According to different surveys and research it is believed that about 99% females of Pakistan are ignored and one of fundamental reason behind that is the low literacy rate, poor economic conditions and lack of basic health needs. This results in the increase the maternal and infant mortality rate. Many babies appeared with several birth defects and other complaints. These statistics are among the worst in the world.

A life time risk of dying due to pregnancy related causes for a Pakistani woman is 1 in 80 compared to 1 in 4,085 in industrialized countries **[4]**. High

maternal mortality in Pakistan is indicative of neglect of women's health. The increased risk of complications for the mother and child is due to lack of education, early marriages, lack of health facilities. Pregnant women suffering from any illness are more prone to adverse consequences of childbirth. 40% women suffer from anemia, which when coupled with hemorrhagic complications of pregnancy and childbirth increases risk of fatal outcome for the mother **[5]**. Any delays in seeking care for obstetric complications can endanger maternal life. Due to such conditions chances of premature birth and neonatal death increases. Furthermore several birth defects appeared along with severe medical complications.

The current study was focused to identify the common complication in newly born babies and to explore their reasons. These findings may be productive for health care providers and Government to cope with birth complication and reduce mortality rate.

MATERIAL AND METHOD

Ethical approval for study was obtained from Institutional Review Board, Government College University Faisalabad. A detailed survey was conducted to evaluate neonatal health condition in Pakistan and the common complications were investigated. For this purpose Neonatal Intensive Care Unit (NICU)in different hospitals were visited and data of 150 new born babies was collected along with the consultation of experienced and trained pediatricians and other Para medical staff. After the careful examination of infants condition and by taking proper history of mother and child health status data was collected. The age of infants was from few hours of birth to about one or two days. All the medical conditions and complications regarding neonates and their related birth defects, necessary for the project objective, were thoroughly, noted and discussed with the pediatricians of concerned hospital. Different mathematical techniques were employed to determine the frequency and percentage of occurrence of neonatal complications and birth defects in new born babies.

RESULTS

As study was conducted on general population and according to the study the ratio of female baby was higher than male (**Table 1**). The premature cases reported were low compared to full term babies (**Table 1**).

Table 1: Sex ratio and maturity percentage.

Sex ratio	Males	44 %
	Females	56 %
Maturity Percentage	Normal	76 %
	Premature	24 %

The body weights of 48% babies were under the normal range (2.7-4.6 Kg) and more the half were of normal weight. In 2/3 cases, C-section was performed for delivery followed by Episiotomy and then NVD (**Fig. 1**).

According to this study 46% of infants were normal without any complication and 42% were present with some complaints due to various physiological and pathological reasons (**Fig. 2**). 12% of infants were born with several birth defects like kernicterus, anacephaly, hydrocephalus, and down syndrome.

DISCUSSION

Pakistan is classified as a low-income country and according to the Human Poverty Index (HPI), it ranks 65th among 102 developing countries **[6]**. The health profile of Pakistan is characterized by high population growth rate, high infant and child mortality rate, high maternal mortality ratio, and a

dual burden of communicable and non-communicable diseases. High maternal mortality is mostly attributed to a high fertility rate, low skilled birth attendance rate, illiteracy, malnutrition and insufficient access to emergency obstetric care services.

The majority (57%) of ever-married Pakistani women and 29% of ever-married men age 15-49 have no education **[7]**. Neonatal mortality rate in Pakistan is 44 per 1000 live births and infant mortality ratio is 95% per 1000 live births.

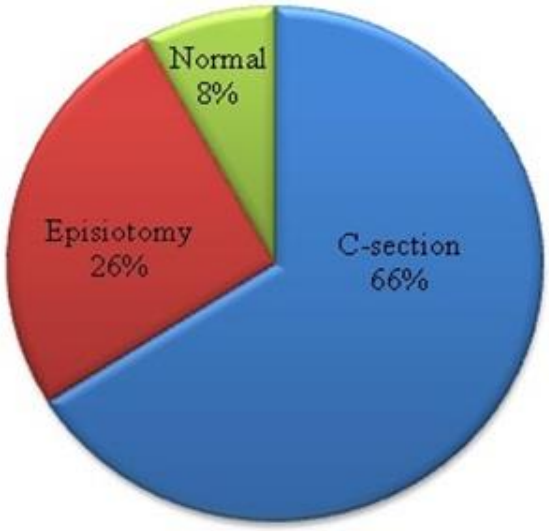

Figure 1: Delivery mode of newly born babies.

There is not any specific reason for the high birth rate of female babies. As in the absence of manipulation both the sex ratio at birth and the population sex ratio are remarkably constant in human populations. Small alterations do occur naturally as gender is controlled by "y" chromosome of male so it is genetically controlled **[8]**.

Birth is considered premature, or preterm, when it occurs before the 37thweek of pregnancy. A normal pregnancy lasts about 40 weeks. The cause of premature birth often can't be identified. However, certain factors are known to increase a woman's risk of going into labor early. A pregnant woman, with heart disease, diabetes, kidney disease or high blood pressure, is more likely to have a premature birth.

Pregnancy related factors that contribute to the prematurity are: Poor nutrition before and during pregnancy; Premature birth in a previous pregnancy; An abnormal uterus; A weakened cervix opening early; Smoking, using illegal drugs, or drinking too much alcohol during pregnancy; Certain infections, such as urinary tract and amniotic membrane infections; and If pregnant woman is younger than 17 and older than 35 **[9]**.

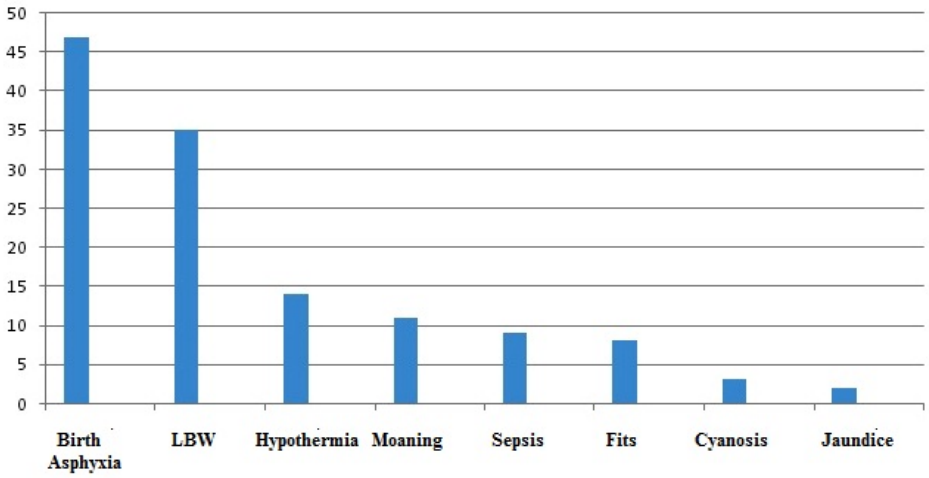

Figure 2: Complications and their frequency in neonates.

The primary cause of low Body weight of Neonates is premature birth, being born before 37 weeks gestation; a baby born early has less time in the mother's uterus to grow and gain weight, and much of a fetus's weight is gained during the latter part of the mother's pregnancy. Another cause of low body weight is intrauterine growth restriction. This occurs when a baby does not grow well in uterus because of problems with the placenta, the mother's health or birth defects. Babies with intrauterine growth restriction (IUGR) may be born early or full-term but they may be physically weak or small or immature. A premature baby is more likely to be small and size depends upon the trimester of pregnancy at which delivery occurs. Some other factors that may contribute to low body weight include: teen mothers especially younger than fifteen; multiple birth; and poorer pregnancy nutrition **[10]**.

The proposed factors that may be the reason for increased cesarean births are; Maternal age particularly with first birth; multiple pregnancy; breech presentation; suspected low infant birth weight; private hospital status; increasing maternal BMI; large infants, twin pregnancies; and Preeclampsia [**11, 12**].

Birth defects are the leading cause of infant death in the first year of life, accounting for about 20% of infant deaths in 2005.Birth defects can be a result of genetics, exposure to certain medications and chemicals, infections during pregnancy, smoking or drinking alcohol, having certain medical conditions (obese or diabetes), and being an older mother **[13, 14]**.

CONCLUSION

It was concluded that parent counseling is required to reduce birth defects and preterm delivery caused by the use of alcohol, illicit drugs, and poor nutrition. Teen-age marriage is a leading cause of low body weight and it should be discouraged.42% of neonates ware reported with certain complications and most common of them was Birth asphyxia. Hospitals must enhance their mechanical ventilation and respiratory therapy to control this complication. Regular check-up during pregnancy for the management of blood pressure, hormonal levels, diabetes, and infection can also minimized complications in neonates.

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