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ORIGINAL RESEARCH

Prevalence and risk factors of low- birth weight babies- Hospital based cross sectional study in Bihar

[1]Dr. Rehana Anjum,[2]Dr. Shiv Shankar Kumar, [3]Dr. Seema Kumari, [4]Dr. Ajay Krishna

[1]Tutor, [3]Assistant Professor, [4]Professor& HOD, Department of Community Medicine, Patna Medical College, Patna, Bihar, India
[2]Tutor, Department of Community Medicine, Nalanda Medical College, Patna, Bihar, India

Corresponding author
Dr. Seema Kumari
Assistant Professor, Department of Community Medicine, Patna Medical College, Patna, Bihar, India

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ABSTRACT
Background: The primary cause of LBW is premature birth. Babies born before 37 weeks do not have enough time to grow adequately. The present study was conducted to assess prevalence and risk factors of low- birth weight babies.**Materials & Methods:**186 babies of both genders were enrolled. Parameters such as feeding habits, birth weight, family type, mother's anemia, ANC, gestational period, and anthropometric measurementswere noted.**Results:** Out of 186 babies, 102 were males and 84 were females. Age group <1 month had 58, 1-6 months had 42 and 6-12 months had 86 babies. The difference was non- significant (P> 0.05). Out of 186 babies, 94 (50.5%) were LBW. Mothers were anaemic in 52 and normal in 42, ANC visit was adequate in 22 and inadequate in 72. Family was nuclear in 66 and joint in 28. 26 mothers had iron and folic acid tablet consumption. Period of gestation was term in 40 and preterm in 54. The difference was significant (P< 0.05).**Conclusion:** The prevalence of LBW babies was 50.5%. Preterm birth, a nuclear family, low ANC visits, anemic women, and poor iron and folic acid pill usage were common risk factors for low- birth weight babies.
Keywords: low birth weight, Anemic, Folic acid

INTRODUCTION
Low birth weight is defined as weighing less than 2,500 grams (5.5 pounds) at birth.[1]The primary cause of LBW is premature birth. Babies born before 37 weeks do not have enough time to grow adequately.Intrauterine growth restriction (IUGR) is limiting fetal growth include placental issues, maternal health problems, or genetic factors.Maternal factors include poor nutrition during pregnancy, inadequate prenatal care, smoking, alcohol, or drug use and chronic health conditions (e.g., hypertension, diabetes).[2]

Maternal factors associated with LBW include age (less than 16 or older than 40), number of pregnancies, obstetric issues, trauma, pre-eclampsia or eclampsia, specific infections, chronic diseases (hypertension, diabetes), nutritional status, and drug abuse (alcohol, smoking).[3,4]Fetal characteristics that have been linked to low birth weight (LBW) include intrauterine growth retardation, fetal infection and abnormalities, and some placental problems.[5]Newborns with LBW have a lifelong propensity to long-term neurological and language impairments; they also have a higher risk of hypothermia, hypoglycemia, and premature death. Moreover, LBW raises the risk of both the early onset and later development of chronic illnesses such diabetes, dyslipidemia, and cardiovascular ailments.[6]The present study was conducted to assess prevalence and risk factors of low- birth weight babies.

MATERIALS & METHODS
This hospital based cross-sectional study was conducted during October to December 2023 among postnatal mothers in the Patna Medical College & Hospital, Bihar, India.

INCLUSION CRITERIA:
It included mothers who had singleton pregnancy and recently delivered liv- birth baby admitted in the postnatal ward of PMCH Hospital.

EXCLUSION CRITERIA:
Present study excluded the mothers with any serious obstetric or medical conditions, mothers who did not

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have ANC cards, who had multiple pregnancies, whose last menstrual period was not exactly known, who had a history of some complications like antepartum hemorrhage and neonates with congenital malformations, had medical conditions like Diabetes, Hypertension, cardiac diseases or chronic infections and who required constant medical support and monitoring.

The present study comprised of 186 babies of both genders in a tertiary hospital of Bihar. Parental consent was obtained before starting the study. A newborn weighing less than 2,500 grams was classified as low birth weight.

Data such as name, age, etc. was recorded. A thorough clinical evaluation was carried out. Several factors were recorded, such as the mother's anemia, ANC, birth weight, family type, feeding patterns, gestational period, and anthropometric measurements. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I:Distribution of patients

Total- 186		
Gender	**Male**	**Female**
Number	102	84

Table I shows that out of 186 babies, 102 were males and 84 were females.

Table II: Age wise distribution

Age group	Number	P value
<1 month	58	0.61
1-6 months	42	
6-12 months	86	

Table II shows that age group <1 month had 58, 1-6 months had 42 and 6-12 months had 86 babies. The difference was non- significant (P> 0.05).

Table III: Prevalence of low birth babies

Total	Prevalence	Percentage
186	94	50.5%

Table III shows that out of 186 babies, 94 (50.5%) were LBW.

Table IV:Assessment of risk factors

Parameters	Variables	Number	P value
Anaemia	Anaemic	52	0.05
	Normal	42	
ANC visit	Adequate	22	0.01
	Inadequate	72	
Family	Nuclear	66	0.01
	Joint	28	
Iron and folic acid tablet consumption	Yes	26	0.01
	No	68	
Period of gestation	Term	40	0.05
	Preterm	54	

Table IV, graph I shows thatmothers were anaemic in 52 and normal in 42, ANC visit was adequate in 22 and inadequate in 72. Family was nuclear in 66 and joint in 28. 26 mothers had iron and folic acid tablet consumption. Period of gestation was term in 40 and preterm in 54. The difference was significant (P< 0.05).

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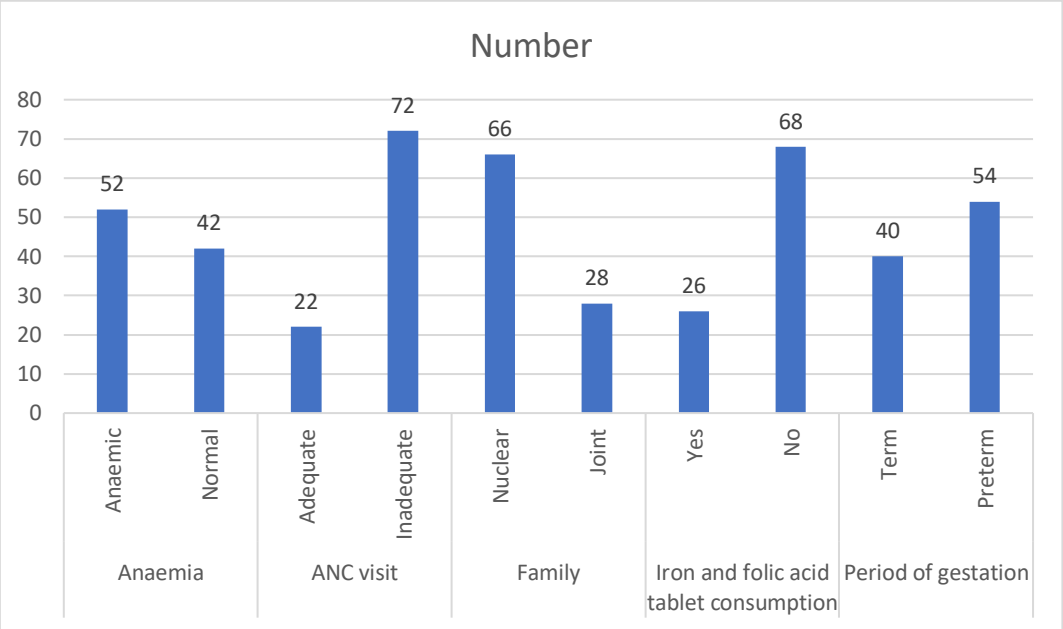
Graph I Assessment of risk factors



DISCUSSION

Low Birth Weight (LBW) is still a major public health issue, with an estimated 15-20% of all births worldwide being LBW representing more than 20 million births per year.[7,8] Although there are variations in the prevalence of LBW in each country, almost 95.6% of them are in developing or low-socioeconomic countries.[9]The World Health Assembly has targeted a 30% reduction in the incidence of LBW by 2025. This means that there is a relative decline of 3.9% per year between 2012-2025.[10,11] It is therefore important to have accurate prevalence data on the LBW population and risk factors, so as to plan specific care patterns for the prevention and management of LBW infants in the maternity unit so that neonatal and perinatal morbidity and mortality rates can be significantly reduced.[12,13]The present study was conducted to assess prevalence and risk factors of low- birth weight babies.

We observed that out of 186 babies, 102 were males and 84 were females. Herawati et al[14] found that most pregnant women did not give birth to low- birth weight babies (69.5%), aged 20-35 years (89.5%), did not have preeclampsia (94.7%), gestational age 37-42 weeks (76.8%), and did not KPD (84.2%). There is a relationship between maternal age, pre-eclampsia, gestational age and KPD with the incidence of LBW.

We found that age group <1 month had 58, 1-6 months had 42 and 6-12 months had 86 babies. Out of 186 babies, 94 (50.5%) were LBW. Anil et al[15]identified associated risk factors of low birth weight.Multivariate logistic regression found that having the kitchen in the same living house, iron intake less than 180 tablets, maternal weight gain during second and third trimester less than 6.53 kg, co-morbidity during pregnancy, preterm birth were the risk factors associated with low birth weight.

We found that mothers were anaemic in 52 and normal in 42, ANC visit was adequate in 22 and inadequate in 72. Family was nuclear in 66 and joint in 28. 26 mothers had iron and folic acid tablet consumption. Period of gestation was term in 40 and preterm in 54. Girotraet al[16]examined the prevalence and determinants of LBW in India. A total of 175,240 mothers were included in the present study. The proportion of newborns with LBW was 17.29% (n=26366, 95% confidence interval [CI] 17.01, 17.57), of which 6% (n=1450, 95% CI 5.61, 6.41) had very low birth weight (less than 1500 g). An increase in the education level of women or wealth index also resulted in significantly reduced odds of LBW in the newborn. However, the number of antenatal care (ANC) visits lacked any statistically significant association with the odds of having a newborn with LBW.

The shortcoming of the study is small sample size.

CONCLUSION

Authors found that the prevalence of LBW babies was 50.5%. Preterm birth, a nuclear family, low ANC visits, anemic women, and poor iron and folic acid pill usage were common risk factors for low- birth weight babies.

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