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Original Research

Prevalence and risk factors of low- birth weight babies

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ABSTRACT:
Background: The World Health Organization (WHO) defines low birth weight as weighing less than 2,500 grams (5.5 pounds) at birth. The present study was conducted to assess prevalence and risk factors of low- birth weight babies. **Materials & Methods:** 105 babies of both genders were selected. Parameters such as feeding habits, birth weight, family type, mother's anemia, ANC, gestational period, and anthropometric measurements were noted. **Results:** Age group <1 month had 13, 1-6 months had 62 and 6-12 months had 15 babies. Out of 90 babies, 48 were normal and 42 were LBW babies. The difference was non- significant (P> 0.05). Period of gestation was term in 10 and preterm in 32. Mothers were anaemic in 28 and normal in 14. Family was nuclear in 26 and joint in 16. ANC visit was adequate in 15 and inadequate in 27. 11 mothers had iron and folic acid tablet consumption whereas 31 had not. The difference was significant (P< 0.05). **Conclusion:** Preterm birth, nuclear families, inadequate ANC visits, maternal anemia, and poor iron and folic acid pill usage were common risk factors for low birth weight newborns.
Keywords: anemia, folic acid, iron

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INTRODUCTION

Low birth weight is defined by the World Health Organization (WHO) as weighing less than 2,500 grams (5.5 pounds) at birth.[1] Epidemiological evidence suggests that neonates weighing less than 2,500 g have a roughly 20-fold higher chance of dying than their heavier counterparts, which serves as the basis for this helpful threshold for cross-national comparison. Birth weights under 2,500 grams are more prevalent in underdeveloped countries than in developed ones, and they can have a variety of detrimental health effects.[2] More than 40% of low birth weight babies worldwide are born in India, where 7.5 million babies, or 30% of all live births in the country each year, weigh less than 2,500 grams.Out of these 7.5 million kids, 40% are born prematurely, accounting for 25% of all preterm births worldwide. The remaining 60% are born at term following fetal growth restriction.[3]

Low birth weight (LBW) is complicated because it has several known risk factors for both the mother and the fetus. Maternal factors associated with LBW include maternal age (less than 16 or older than 40), the number of pregnancies, obstetric issues, trauma, pre-eclampsia or eclampsia, specific infections, chronic conditions (diabetes, hypertension), nutritional status, and drug abuse (alcohol, smoking).[4] Fetal factors 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 share a lifetime risk of long-term neurological and language impairments, as well as an increased risk of hypothermia, hypoglycemia, and premature death.Moreover, LBW raises the risk of both the early onset and later development of chronic diseases such diabetes, dyslipidemia, and cardiovascular disorders.[6]The present study was conducted to assess prevalence and risk factors of low- birth weight babies.

MATERIALS & METHODS

The present study was conducted on90 babies of both genders. Their parents gave written consent for the participation in the study.

Data such as name, age, etc. was recorded. A thorough clinical evaluation was carried out.

Numerous factors were recorded, such as anthropometric measurements, gestational period, mother's anemia, ANC, birth weight, feeding practices, and family type. Low birth weight was defined as a newborn weighing less than 2,500 grams.Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Assessment of parameters

Parameters	Variables	Number	P value
Age group (months)	<1	13	0.44
	1-6	62	
	6-12	15	
Prevalence of LBW	Normal	48	0.95
	LBW	42	

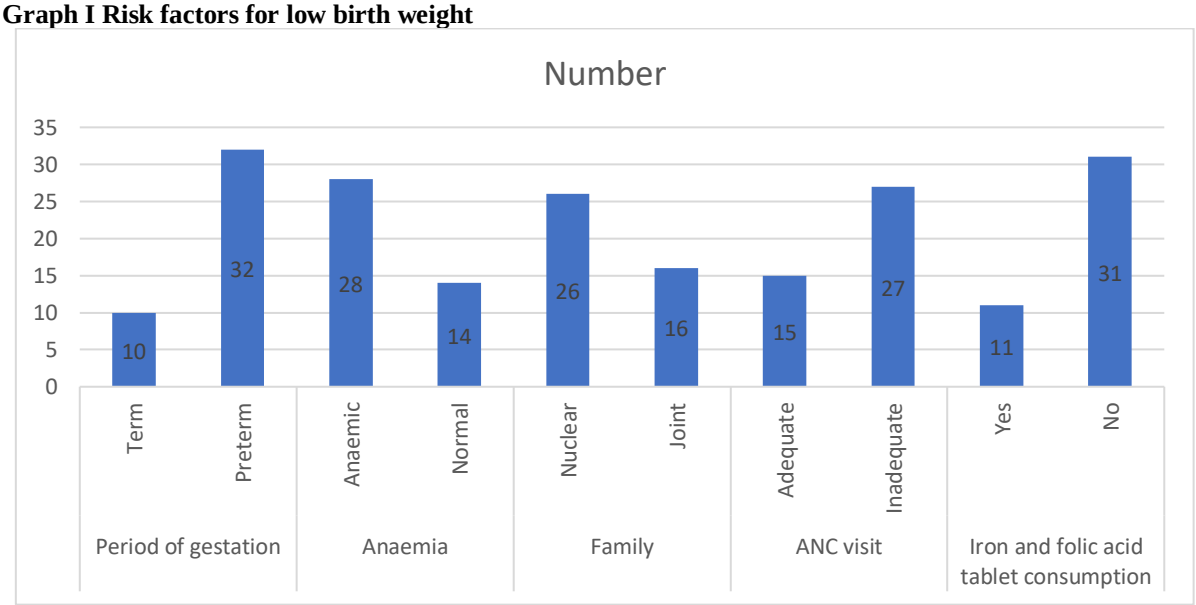
Table I shows that age group <1 month had 13, 1-6 months had 62 and 6-12 months had 15 babies. Out of 90 babies, 48 were normal and 42 were LBW babies. The difference was non- significant (P> 0.05).

Table II Risk factors for low birth weight

Parameters	Variables	Number	P value
Period of gestation	Term	10	0.01
	Preterm	32	
Anaemia	Anaemic	28	0.05
	Normal	14	
Family	Nuclear	26	0.05
	Joint	16	
ANC visit	Adequate	15	0.01
	Inadequate	27	
Iron and folic acid tablet consumption	Yes	11	0.01
	No	31	

Table II, graph Ishows that period of gestation was term in 10 and preterm in 32. Mothers were anaemic in 28 and normal in 14. Family was nuclear in 26 and joint in 16. ANC visit was adequate in 15 and inadequate in 27. 11 mothers had iron and folic acid tablet consumption whereas 31 had not. The difference was significant (P< 0.05).

Graph I Risk factors for low birth weight



DISCUSSION

The birth weight of a kid is a strong indicator of the general health and reproductive health of the population. Low birth weight (LBW) is thought to be the most accurate measure of infant mortality, especially when it comes to deaths that take place during the first month of life.[7] LBW babies are more likely to die as infants, and they also often suffer from lifelong cognitive impairments and are more likely to develop noncommunicable diseases as adults.[8] Inadequate nutrition during crucial fetal growth phases can increase the likelihood of adult

degenerative disorders such syndrome X, hypertension, diabetes mellitus, and hyperlipidemia, according to the prenatal origin of disease idea, also known as Barker's hypothesis.[9]The present study was conducted to assess prevalence and risk factors of low- birth weight babies.

In our study,age group <1 month had 13, 1-6 months had 62 and 6-12 months had 15 babies. Out of 90 babies, 48 were normal and 42 were LBW babies. Joshi et al[10]found out the effect of various socio-economicand maternal factors on the birth weight of institutionallydelivered newborns. Overall mean birth weight was found to be 2.64 + 0.444 kg. Out of total 34.37% newborns wereweighing less than 2.50 kg. Among these, LBW babies majority (27.73%) were in the weight group of2.00-2.50 kg. Proportion of LBW was 32.59% in males and36.37% in females, however this difference was not found tobe statistically significant.Maternal education, occupation and per capita income of the family per monthwere found to be significantly associatedwith birth weight of the newborn. 45.45% of the babies born toilliterate mothers and 43.94% of babies born to mothers whowere labourers by occupation were of LBW. Proportion of LBWbabies was maximum (52.56%) in mothers of low- incomegroup (percapita income less than Rs. 150 per month).Association between religion and birth weight was found tobe insignificant.

We found that period of gestation was term in 10 and preterm in 32. Mothers were anaemic in 28 and normal in 14. Family was nuclear in 26 and joint in 16. ANC visit was adequate in 15 and inadequate in 27. 11 mothers had iron and folic acid tablet consumption whereas 31 had not. In their study, Raman et al[11] examined the incidence of low-birth-weight neonates and the risk variables that are linked to it in 3100 consecutively delivered live newborns. A total of 1,1414 newborns were categorized as low birth weight. The incidence was 327 (32.7%) per 1000 live births. Of these, 199 (19.6%) were preterm infants, and 815 (80.4%) were small for gestational age neonates. Seventy percent of the 570 neonates were tiny for gestational age and weighed between 2001 and 2500 grams. The greatest number of low-birth-weight newborns (618/1014) were born to mothers between the ages of 19 and 25, and 82.8% of these neonates were tiny for gestational age.Forty-eight low birth weight neonates were born to women under the age of eighteen. It was discovered that primiparous moms contributed more low-birth-weight neonates (414/1014). As a factor, spacing did not significantly alter anything. Mothers with serious obstetrical issues, including pregnancy-induced hypertension, a poor obstetrical history, and early membrane rupture, gave birth to 262 low-birth-weight babies. The prevalence of low- birth weight newborns is significant enough to raise concerns (32.7%).

Metgud et al[12] evaluated the factors affecting the birth weight of a newborn and to estimate the prevalence of LBW.The mean birth weight of newborns was 2.6 kg with a range of 1.2 to 3.8 kg. The prevalence of LBW was 22.9%. Among the studied risk factors, 25 of them were significantly associated with the birth weight of a newborn on univariate logistic regression analysis. Maternal education [Odds Ratio (OR) 3.2], exposure to passive smoking [OR 2.3], age at first pregnancy ≥25 years [OR 3.6], birth interval <2 years [OR 2.4], previous history of LBW baby [OR 3.3], weight gain ≤4 kg during pregnancy [OR 7.0], maternal weight at last week of gestation ≤45 kg [OR 2.3], pregnancy induced hypertension [OR 3.3], high risk pregnancy [OR 3.6] and late antenatal registration [OR 3.6] emerged as significant risk factors on multivariate analysis.

The study's small sample size is one of its shortcomings.

CONCLUSION

Authors found that preterm birth, nuclear families, inadequate ANC visits, maternal anemia, and poor iron and folic acid pill usage were common risk factors for low birth weight newborns.

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