ORIGINAL RESEARCH

Assessment of associated factors of low birth- weight babies

Dr. Alok Kumar

Associate Professor, Department of Community Medicine, NCR Institute of Medical Sciences, Meerut , U.P., India

Correspondence:
Dr. Alok Kumar
Associate Professor, Department of Community Medicine, NCR Institute of Medical Sciences, Meerut , U.P., India

ABSTRACT
Background: Low birth weight is one of the most serious challenges in maternal and child health in both developed and developing countries. The present study was conducted to assess prevalence of low- birth weight babies.
Materials & Methods:120 babies of both genders were included. Parameters such as feeding practices, birth weight, family type, anaemic status of mother, ANC, period of gestation and anthropometric measurement was recorded. Infant with a birth weight < 2500 grams were considered low birth weight.
Results: Age group <1 month had 28, 1-6 months had 72 and 6-12 months had 20 babies. The difference was significant (P< 0.05). There were 80 low birth weight and 40 normal birth weight babies. Among low birth weight, 5 were normal, 28 had grade 1, 22 had grade 2, 15 had grade 3 and 10 had grade 4. Among normal birth weight, 17 were normal, 7 had grade 1, 6 had grade 2, 8 had grade 3 and 12 had grade 4. The difference was significant (P< 0.05). Family was nuclear in 50 and joint in 30. ANC visit was adequate in 35 and inadequate in 45. Period of gestation was term in 32 and preterm in 48. Mothers were anaemic in 55 and normal in 25, 28 mothers had iron and folic acid tablet consumption. The difference was significant (P< 0.05).
Conclusion: Authors found that low birth babies had low nutrition status. An association of nuclear family, inadequateANC visit, preterm, anaemicstatus of mothers and inadequate iron and folic acid tablet consumption by mothers was found with low- birth weight babies.
Key words:Anaemic, nutrition status, low birth babies

INTRODUCTION

Low birth weight is one of the most serious challenges in maternal and child health in both developed and developing countries.[1] It is an essential determinant of mortality, morbidity and disability in infancy and childhood and also has a long-term impact on health outcomes in adult life. It is a reliable indicator in monitoring and evaluating the success of maternal and child health programmes. The low birth weight is considered as sensitive index of nation's health and development.[2]
Neonates with weight less than 10th percentile or more than 2 SD below the mean for the gestation age are classified as small for gestational age. This group of neonates with poor intra uterine growth remains the cause of concern in developing countries including India.[3]
The incidence of low birth weight (LBW) in India varies between 25-30% and of which 60-65% are because of intra uterine growth retardation (lUGR). Evidence from developing countries over time also demonstrates that the incidence of IUGR decreases as a country becomes more developed.[4] Some ofthe adverse factors responsible are maternal malnutrition,

anemia, inadequate prenatal care, drug abuse, birth order, maternal medical problem, e.g., pregnancy induced hypertension, diabetes mellitus, cardiac diseases and chronic infections.[5]A high percentage of LBW, therefore, points to the nutrition deficient health status of pregnant women, inadequate prenatal care and the need for improved care of the newborn.[6]The present study was conducted to assess prevalence of low- birth weight babies in known population.

MATERIALS & METHODS

The present study was conducted at NCR Institute of Medical Sciences, Meerut , U.P., Indiabetween April and October, 2021. It consisted of 120 babies of both genders. The consent was obtained from their parents.

Data such as name, age, gender etc. was recorded. A thorough clinical examination was carried out. Parameters such as feeding practices, birth weight, family type, anaemic status of mother, ANC, period of gestation and anthropometric measurement was recorded. Infant with a birth weight < 2500 grams were considered low birth weight. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS
Table I Distribution of babies

Age group	Number	P value
<1 month	28	0.02
1-6 months	72	
6-12 months	20	

Table I, graph I shows that age group <1 month had 28, 1-6 months had 72 and 6-12 months had 20babies. The difference was significant (P< 0.05).
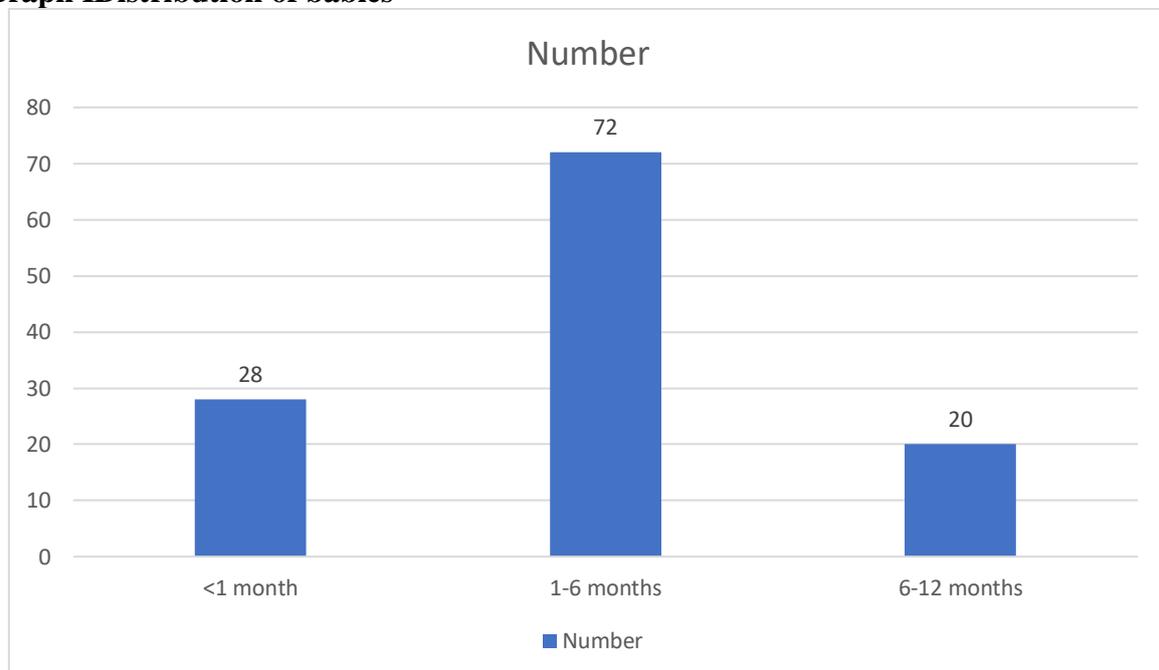
Graph IDistribution of babies

Table II Assessment of birth weight and malnutrition during infancy

Malnutrition	LBW (80)	NBW (40)	P value
Normal	5	17	0.02
Grade 1	28	7	

Grade 2	22	6
Grade 3	15	8
Grade 4	10	12

Table II, graph II shows that there were 80 low birth weight and 40 normal birth weight babies. Among low birth weight, 5 were normal, 28 had grade 1, 22 had grade 2, 15 had grade 3 and 10 had grade 4. Among normal birth weight, 17 were normal, 7 had grade 1, 6 had grade 2, 8 had grade 3 and 12 had grade 4. The difference was significant (P< 0.05).

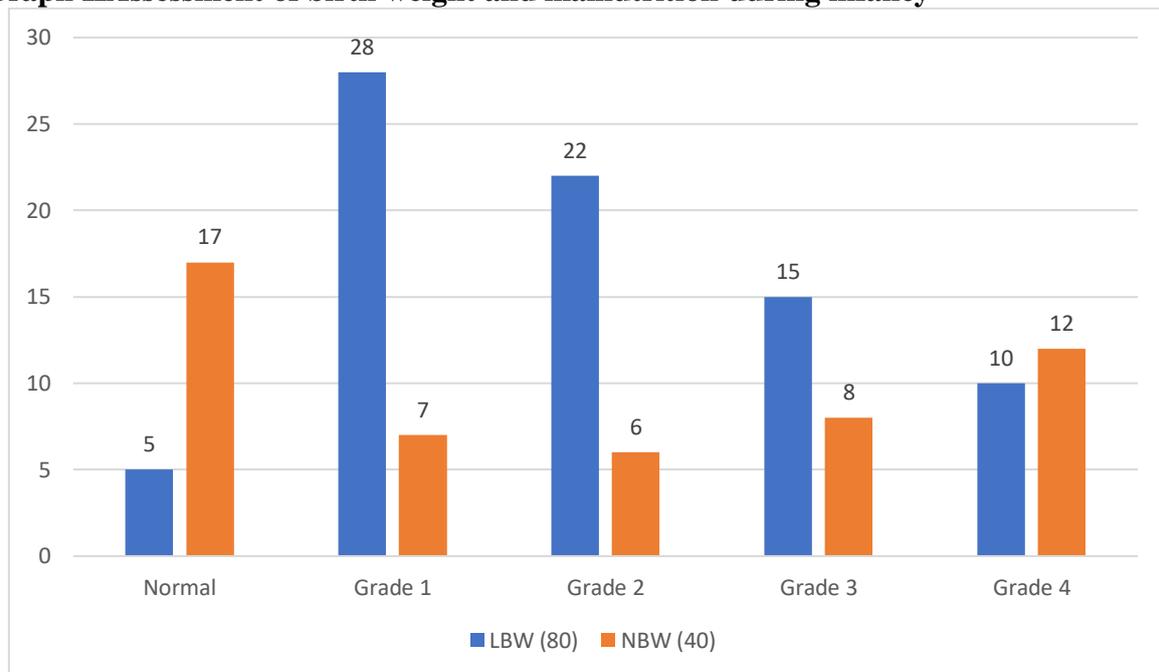**Graph IIAssessment of birth weight and malnutrition during infancy**

Table III Association between low birth weight and different variables

Parameters	Variables	Number	P value
Family	Nuclear	50	0.01
	Joint	30	
ANC visit	Adequate	35	0.05
	Inadequate	45	
Period of gestation	Term	32	0.05
	Preterm	48	
Anaemia	Anaemic	55	0.02
	Normal	25	
Iron and Folic acid tablet consumption	Yes	28	0.01
	No	52	

Table III, graph III shows that family was nuclear in 50 and joint in 30. ANC visit was adequate in 35 and inadequate in 45. Period of gestation was term in 32 and preterm in 48. Mothers were anaemic in 55 and normal in 25, 28 mothers had iron and folic acid tablet consumption. The difference was significant (P< 0.05).

Graph IIIAssociation between low birth weight and different variables
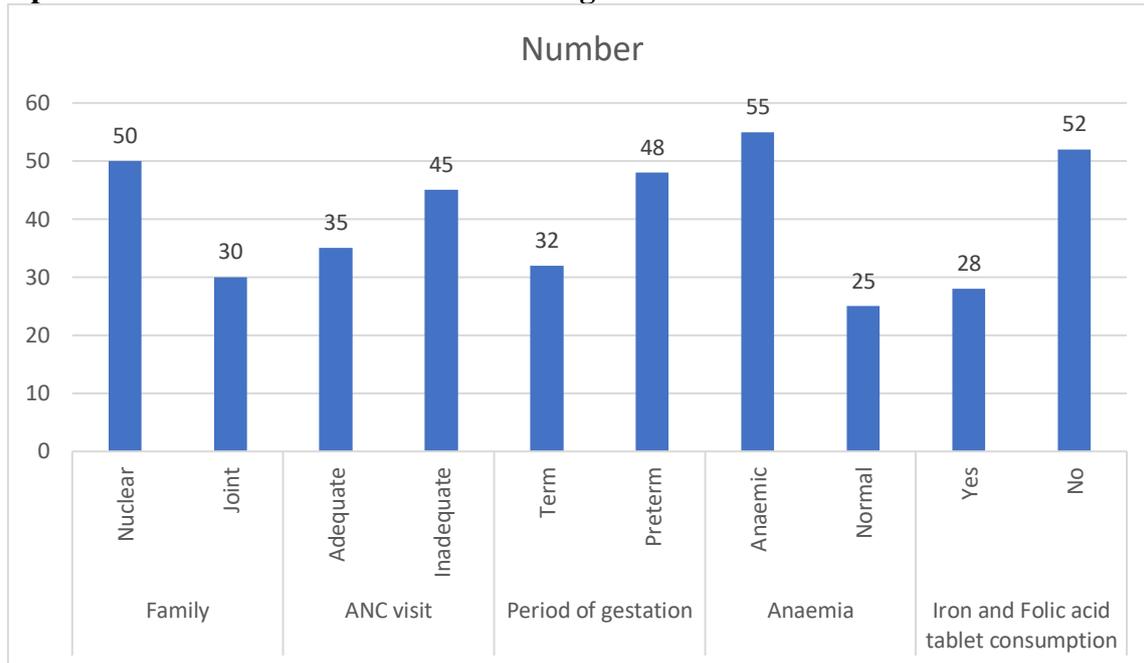
DISCUSSION

Health is to be "a state of complete physical, mental and social well- being and not merely the absence of diseases or infinity".[7] This is the main objective of health services including maternal and child health of our nation.[8] Birth weight is a good reflector of the status of maternal health. It is also true that birth weight is the single most important factor that affects neonatal mortality and morbidity, infant and childhood morbidity.Low birth weight (LBW) as the birth weight less than 2500 grams irrespective of gestational age.[9] World health organisation estimate that each year around 25 million babies born with low birth weight globally, among these 95% are from developing countries. Lack of adequate maternal and child health services in such countries augment the problem.[10] Southern Asia is the region with the highest incidence of low birth weight followed by Africa, Latin America and eastern Asia.[11]The present study was conducted to assess prevalence of low- birth weight babies.

We found thatage group <1 month had 28, 1-6 months had 72 and 6-12 months had 20 babies. Raman et al[12] in their study 3100 consecutively delivered live new-borns were studied for the incidence of low- birth weight neonates and to evaluate the associated risk factors. One thousand fourteen new-borns were classified as low birth weight babies. The incidence expressed per 1000 live births was 327 (32.7%). Ofthese, 815 (80.4%) were small for gestational age neonates and 199 (19.6%) were preterm neonates. Five hundred seventy small for gestational age neonates (70%) were weighing between 2001 to 2500 grams. Mothers belonging to the age group of 19-25 years delivered the maximum number of low- birth weight babies (618/1014) and ofthese 82.8% were small for gestational age neonates. There were 48 neonates with low birth weight born to mothers below the age of 18 years. Primiparous mothers were found to contribute higher number of low- birth weight neonates (414/1014). Spacing as a factor did not show any major difference. Two hundred sixty- two low birth weight neonates were born to mothers with significant obstetrical problems such as pregnancy induced hypertension, bad obstetrical history and premature rupture of membranes. The incidence of 32.7 % of low- birth weight babies is high enough to ring alarm bells.

We found that There were 80 low birth weight and 40 normal birth weight babies. Among low birth weight, 5 were normal, 28 had grade 1, 22 had grade 2, 15 had grade 3 and 10 had

grade 4. Among normal birth weight, 17 were normal, 7 had grade 1, 6 had grade 2, 8 had grade 3 and 12 had grade 4. Roudbari et al[13] found significant association between antenatal care and birth weight of baby. They observed that with fewer number of ANC visits or no any visit at all increased the proportion of low birth weight among them.

We observed thatfamily was nuclear in 50 and joint in 30. ANC visit was adequate in 35 and inadequate in 45. Period of gestation was term in 32 and preterm in 48. Mothers were anaemic in 55 and normal in 25, 28 mothers had iron and folic acid tablet consumption.Patel et al[14]estimated the prevalence of low- birth weight babies and studied the association of maternal factors with birth weight. The prevalence of low birth was found 19.6. The factors like sex of the baby, birth order, birth spacing, maternal age, maternal education, regular antenatal check-up and mother's weight gain during pregnancy were found significant determinants of LBW. The prevalence of low birth was high in urban area require multipronged strategy. The primary health care can diminish the determinant of the low birth weight by adequate birth interval, two-child norms, regular antenatal check-up, supplementary nutrition to mother, female literacy etc.

CONCLUSION

Authors found that low birth babies had low nutrition status. An association of nuclear family, inadequateANC visit, preterm, anaemic status of mothers and inadequate iron and folic acid tablet consumption by mothers was found with low- birth weight babies.

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