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Original Research Article

Low birth weight and premature births and their associated maternal factors

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ABSTRACT

Background: LBW is a significant public health problem globally. In India every 3rd newborn is a LBW contributing to about 40% of the global burden. The objective of the study was to determine the prevalence of LBW and premature births and their associated maternal factors.
Methods: A cross sectional study was done in antenatal women attending Rama Medical College Hospital& Research Centre, Hapur. Maternal factors and socioeconomic factors collected from 406 mothers were coded and analyzed using the SPSS 16. Chi square test was applied and p value less than 0.5 was considered as statistically significant.
Results: Prevalence of LBW was 31.8% and prematurity was 25.6% in the study. LBW and premature babies were more associated with joint families, ≤Rs. 2999/- monthly income, maternal illiteracy and house wives. LBW and Premature babies decreased with increase in income, Hb >11.1 gms and ≥ 100 IFA tablets intake. The rates of LBW were the same whether mothers had no ANC or full ANC. This raises doubts about the content of the ANC.
Conclusions: A good quality dedicated and sincere comprehensive ANC package including 4 ANCs, 100 IFA, 2TT/Booster, simple serial measurement of BP, weight, haemoglobin, fundal height and abdominal girth during each visit and screening for complications, counselling for birth and emergency preparedness, newborn care, breast feeding would help avert LBW and premature birth.

Keywords: Low birth weight, Premature births, Maternal and paternal factors, Quality ANC

INTRODUCTION

Low birth weight (LBW) is defined by the WHO as weight at birth less than 2500 g (5.5 lb).[1] This is birth weight up to and including 2,499 gm.[2] LBW is complex and includes preterm neonates (born before 37 weeks of gestation), small for gestational age at term and the overlap between these two situations – preterm, small for gestational age.[1]

Preterm birth is the most common direct cause of neonatal mortality. Every year, 1.1 million babies die from complications of preterm birth. LBW is not only a major predictor of prenatal mortality and morbidity, but it is found to also increase the risk for non-communicable diseases such as diabetes and cardiovascular disease later in life.[1]

LBW continues to be a significant public health problem globally and is associated with a range of both short- and long term consequences. Overall, about 15% to 20% of all births worldwide are LBW, representing more than 20 million births a year. Regional estimates of LBW include

28% in south Asia, 13% in sub-Saharan Africa and 9% in Latin America.[1]

In India, of the 26 million born every year, 8 million are LBW infants i.e. around 40% of the global burden of LBW infants. Nearly three fourth of all neonatal deaths and half of infant deaths occur among LBW infants. A LBW baby is at higher risk of both mortality and morbidity compared to the normal birth weight infants.[3]

The causes of LBW are multifactorial. Kramer mentioned 43 factors influencing intrauterine growth and gestational duration: genetic, constitution, demographic & psychosocial, obstetric, nutritional, morbidity during pregnancy, toxic exposure and prenatal care etc.[4] There are multiple causes of LBW, including early induction of labour or caesarean birth (for medical or non-medical reasons), multiple pregnancies, infections and chronic conditions such as diabetes and high blood pressure[1].

In the Indian context; age, height, weight (pre-pregnancy and pregnancy weight gain), nutritional anemia, socio-economic status, ANC checkup, education (maternal and family), parity, maternal morbidity, bad obstetric history, physical labour, tobacco exposure, infections all influence the new born weight. In addition fetal defects due to genetic conditions or environmental factors limit the normal development of the fetus.[3,5-9]

In the past from 1962's to 2004 LBW varied from 20% to 40% based on Institutional deliveries and some community based studies.[3,10-12] Almost every third newborn in India (30%) is a LBW baby.[1] The consequences of LBW include fetal and neonatal mortality and morbidity, poor cognitive development and an increased risk of chronic diseases later in life.[1]

In 2012, the WHA endorsed a comprehensive implementation plan on maternal, infant and young child nutrition, which specified 6 global nutrition targets for 2025, which covered the third target: a 30% reduction in low birth weight.[1] A study was conducted to determine the prevalence of low birth weight and premature births and their associated maternal factors.

METHODS

A cross sectional study was done in the antenatal women attending Rama Medical College Hospital & Research Centre, Hapur, Uttar Pradesh to determine the prevalence of low birth weight and preterm births and their associated maternal factors.

Data was collected from 406 antenatal mothers who attended the hospital from 1st April 2016 to 31st March 2017. Inclusion criteria were all mothers who came for delivery to the hospital during this period. Exclusion criteria were any twin pregnancies, thus 3 twin pregnancies were excluded i.e. 6 babies excluded from 412 babies. Details were collected through a semi-structured questionnaire, noted possible details from mother and baby's case sheet. Variables for the study were maternal factors and social factors seen in Table 2 to 4. Maternal height was taken for all mother's even if not available in the case sheet. Data collected were coded and analyzed using the SPSS 16. Chi square test was applied to test the relationship between birth weight and premature births with different variables. P value less than 0.5 was considered as statistically significant in the study.

RESULTS

The mean birth weight was 2606 gms and mean gestational age was 38.3weeks in the study. Among 406 babies, 52%, 211 were baby boys and 48%, 195 were baby girls. Prevalence of LBW was 31.8%, 129 and prematurity was 25.6%, 104. Out of LBW babies, 52.7%,68 were premature (<37 weeks) and 47.3%,61 were ≥37 weeks. Among the 277 normal weight babies 13%, 36 were premature and 87%,241 were normal babies, Table 1.

Table 1: Percentage of LBW and premature births.

Gestational age	Birth weight (in grams)				Total (%)
	<2500 gms (%)	%	≥ 2500 gms (%)	%	
<37 weeks	68 (52.7)	65.4	36 (13)	34.6	104 (100)
≥ 37 weeks	61 (47.3)	20.2	241 (87)	79.2	302 (100)
Total	129 (100)	31.8	277(100)	68.2	406 (100)

Variables analyzed in the study are in Table 2. Majority of mothers, 85.5%, 347 had registered in a health facility, 56.4%, 229 were Gravida 1-4 and 2.2%, 9 were ≥5 Gravida, 47.3%, 192 were Para 0 and 52.7%,214 were Para 1-4. Only 41.6%, 169 had full ANC, 90.6%. 368 were Hindus, 57%, 232 lived in joint families and 51.3%.208 lived with 3 to 5 family members.

There were 96.6%, 392, housewives, 43.1%, 175 husbands were skilled labourers. 39.7%, 161 mother and 45%, 181 were educated till secondary school, 40.9%, 166 had an income of < Rs. 2999/ per month.

Table 2: Variables in the study.

	Variables	No	Percentage (%)		Variables	No	Percentage (%)
Registration	Registered	347	85.5	**ANC**	No ANC	108	26.6
	Not Registered	59	14.5		Partial ANC	129	31.8
					Full ANC	169	41.6
Gravida	Primigravida	168	41.4	**Parity**	Para 0	192	47.3
	Gravida 1-4	229	56.4		Para 1-4	214	52.7
	Gravida ≥5	9	2.2				
Religion	Hindu	368	90.6	**Type of family**	Nuclear family	174	42.9
	Muslim	30	7.4		Joint family	232	57.1
	Others	8	2				
No. of family members	2	76	18.7	**Parental income per month**	≤ Rs 2999	166	40.9
	3 to 5	208	51.3		Rs 3000-4999	139	34.2
	6 to 8	80	19.7		Rs 5000-6999	63	15.5
	≥9	42	10.3		≥ Rs7000	38	9.4
Maternal occupation	House wife	392	96.6	**Paternal occupation**	Unskilled Worker	111	27.3
	Unskilled Worker	13	3.2		Skilled worker	175	43.1
	Skilled worker	1	0.2		Professionals	120	29.6
Maternal education	Illiterate	119	29.3	**Paternal education**	Illiterate	36	8.9
	Primary School	41	10.1		Primary School	34	8.4
	6^{th} to 10^{th} Std	161	39.7		6^{th} to 10^{th} Std	181	44.6
	Higher Secondary School & Above	85	20.9		Higher Secondary School & Above	155	38.2
Maternal age	≤ 20years	86	21.2	**Paternal age**	≤ 20years	0	0.0
	21-34 years	316	77.8		21- 34 years	368	90.6
	≥ 35 years	4	1.0		≥ 35+ years	34	8.4

Table 3: Socioeconomic factors with birth weight and gestational age.

Variables		Birth weight				Gestational Weeks			
		<2500 gms (%) 129 (31.8)	**≥ 2500 gms (%)** 277 (68.2)	**Total (%)** 406 (100)	**P value**	**< 37 weeks (%)** 104 (25.6)	**≥ 37 weeks (%)** 302 (74.4)	**Total (%)** 406 (100)	**P value**
Type of family	Nuclear	46 (26.4)	128 (73.6)	174 (100)	0.07	39 (22.4)	135 (77.6)	174 (100)	0.201
	Joint	83 (35.8)	149 (64.2)	232 (100)		65 (28.0)	167 (72.0)	232 (100)	
No. of family members	2	26 (34.2)	50 (65.8)	76 (100)	0.053	26 (34.2)	50 (65.8)	76 (100)	0.041
	3 to 5	53 (25.5)	155 (74.5)	208 (100)		41 (19.7)	167 (80.3)	208 (100)	
	6 to 8	34 (42.5)	46 (57.5)	80 (100)		25 (31.3)	55 (68.8))	80 (100)	
	≥ 9	16 (38.1)	26 (61.9)	42 (100)		12 (28.6)	30 (71.4)	42 (100)	
Religion	Hindu	115 (31.3)	253 (68.8	368 (100)	0.593	94 (25.5)	274 (74.5)	368 (100)	0.661
	Muslim	10 (33.3)	20 (66.7)	30 (100)		8 (26.7)	22 (73.3)	30 (100)	
	Christian	2 (40.0)	3 (60.0)	5 (100)		2 (40.0)	3 (60.0)	5 (100)	
	Sikh	2 (66.7)	1 (33.3)	3 (100)			3 (100.0)	3 (100)	
Parental income in Rs	≤ 2999	56 (33.7)	110 (66.3)	166 (100)	0.847	42 (25.3)	124 (74.7)	166 (100)	0.565
	3000-4999	42 (30.2)	97 (69.8)	139 (100)		32 (23.0)	107 (77.0)	139 (100)	
	5000-6999	21 (33.3)	42 (66.7)	63 (100)		17 (27.0)	46 (73.0)	63 (100)	
	≥ 7000	10 (26.3)	28 (73.7)	38 (100)		13 (34.2)	25 (65.8)	38 (100)	
Maternal age (years)	≤ 20	28 (32.6)	58 (52.2)	86 (100)	0.371	4 (17.4)	19 (82.6)	23 ((100)	0.894
	21-34	98 (31.0)	218 (69.0)	316 (100)		99 (26.1)	280 (73.9)	379 (100)	
	≥ 35	3 (75.0)	1 (25.0	4 (100)		1 (25)	3 (75)	4 (100)	
Paternal age (years)	≤ 20	0	0	0	0.823	0 (0	0 (0)	0 (0)	0.206
	21 to 34	118 (32.1)	250 (67.9)	368 (100)		94 (25.3)	278 (74.7)	372 (100)	
	≥ 35	11 (32.4)	23 (67.6)	34 (100)		10 (29.4)	24 (70.6)	34 (100)	
	Total	129 (31.8)	277 (68.2)	406 (100)		104 (25.6)	302 (74.4)	406 (100)	

Table 4: Socioeconomic factors with birth weight and gestational age.

Variables		Birth weight				Gestational Weeks			
		<2500 gms (%) 129 (31.8)	**≥ 2500 gms (%)** 277 (68.2)	**Total (%)** 406 (100)	**P Value**	**< 37 weeks (%)** 104 (25.6)	**≥ 37 weeks (%)** 302 (74.4)	**Total (%)** 406 (100)	**P Value**
Maternal education	Illiterate	38 (31.9)	81 (68.1)	119 (100)	0.209	33 (27.7)	86 (72.3)	119 (100)	0.192
	1-5th std	15 (36.6)	26 (63.4)	41 (100)		5 (12.2)	36 (87.8)	41 (100)	
	6-8th std	28 (32.9)	57 (67.1)	85 (100.0)		22 (25.9)	63 (74.1)	85 (100)	
	9-10th std	25 (32.9)	51 (67.1)	76 (100)		18 (23.7)	58 (76.3))	76 (100)	
	11-12thstd	7 (16.7)	3583.3)	42 (100)		10 (23.8)	32 (76.2)	42 (100)	
	Graduate & Above	16 (37.2)	27 (62.8)	43 (100)		16 (37.2)	27 (62.8)	43 (100)	
Paternal education	Illiterate	13 (36.1)	23 (63.9)	36 (100)	0.097	13 (36.1)	23 (63.9))	36 (100)	0.117
	1-5th std	13 (38.2)	21 (61.8)	34 (100)		11 (32.4)	23 (67.6)	34 (100)	
	6-8th std	27 (43.5)	35 (56.5)	62 (100)		18 (29.0)	44 (71.0)	62 (100)	
	9-10th std	40 (33.6)	79 (66.4)	119 (100)		24 (20.2)	95 (79.8)	119 (100)	
	11-12thstd	16 (21.6)	58 (78.4)	74 (100)		13 (17.6)	61 (82.4)	74 (100)	
	Graduate & Above	20 (24.7)	61 (75.3)	81 (100)		25 (30.9)	56 (69.1)	81 (100)	
Maternal occupation	House wife	126 (32.1)	266 (67.9)	392 (100)	0.382	102 (26.0)	290 (74.0)	392100)	0.613
	Unskilled worker	2 (15.4)	11 (84.6)	13 (100)		2 (18.2)	11 (84.6)	13 (100)	
	Skilled worker	1 (100)	0	1 (100)		0 (0)	1 (100)	1 (100.0)	
Paternal occupation	Unskilled worker	39 (35.1)	72 (64.9)	111 (100)	0.07	29 (27.1)	78 (72.9)	107 (100)	0.092
	Skilled worker	47 (26.9)	128 (73.1)	175 (100)		36 (20.6)	139 (79.4)	175 (100)	
	Professionals	43 (25.9	77 (74.1)	120 (100)		39 (731.5)	85 (68.5)	124 (100)	
	Total	129 (31.8)	277 (68.2)	406 (100)		104 (25.6)	302 (74.4)	406 (100)	

Table 5: Maternal factors with birth weight and gestational age.

Variables		Birth Weight (in grams)				Gestational age (in weeks)			
		<2500 gms (%)	≥ 2500gms (%)	Total	P value	<37 weeks (%)	≥37 weeks (%)	Total	P value
ANC	No ANC	36 (33.3)	72 (66.7)	108	0.215	36 (33.3)	72 (66.7)	108	0.020
	Partial ANC	41 (31.8)	88 (68.2)	129		30 (23.3)	99 (76.7)	129	
	Full ANC	52 (30.8)	117 (69.2)	169		38 (22.5)	131 (77.5)	169	
Parity	Para 0	68 (35.4)	124 (64.6)	192	0.310	65 (33.9)	127 (66.1)	192	0.004
	Para 1-4	61 (28.5)	153 (71.5)	214		39 (18.2)	175 (81.8)	214	
Gravida	Primigravida	56 (33.3)	112 (66.7)	168	0.746	55 (32.7)	113 (67.3)	168	0.071
	Gravida 2-4	70 (30.6)	159 (69.4)	229		47 (20.5)	182 (79.5)	229	
	>Gravida 5	3 (33.3)	6 (66.7)	9		2 (22.2)	7 (77.8)	9	
Birth interval	≤ 12 months	19 (31.1)	42 (68.9)	61	0.574	14 (23.0)	47 (77.0)	61	0.986
	13-47 months	29 (30.2)	67 (69.8)	96		21 (21.9)	75 (78.1)	96	
	≥ 48 months	21 (35.6)	38 (68.1)	59		13 (22.0)	46 (78.0)	59	
IFA tablets	<100 Tablets	87 (34.8)	163 (65.2)	168	0.160	72 (28.8)	178 (71.2)	168	0.026
	≥ 100 Tablets	42 (26.9)	114 (73.1)	156		32 (20.5)	124 (79.5)	156	
Hemoglobin	≤ 5 gms	1 (33.3)	2 (66.7)	3	0.525	1 (33.3)	2 (66.7)	3	0.033
	5.1-11 gms	82 (32.9)	167 (67.1)	249		68 (27.3)	181 (72.7)	249	
	> 11.1 gms	12 (26.7)	33 (73.3)	45		8 (17.8)	37 (82.2)	45	
	Total	95 (32)	202 (68)	297		77 (25.9)	220 (74.1)	297	
Maternal height	≤ 145 cms	20 (38.5)	32 (61.5)	52	0.821	9 (17.3)	43 (82.7)	52	0.298
	> 145.1 cms	109 (30.8)	245 (69.2)	354		95 (26.8)	259 (73.2)	354	
Maternal weight	≤ 40 kgs	10 (45.5)	12 (54.5)	22	0.035	5 (22.7)	17 (77.3)	22	0.916
	> 40.1 kgs	77 (29.4)	185 (70.6)	262		61 (23.3)	201 (76.7)	262	
	Total	87 (30.6)	197 (69.4)	284		66 (23.2)	218 (76.8)	284	
Spontaneous abortions	0-1	123 (31.6)	266 (68.4)	389	0.013	97 (24.9)	292 (75.1)	389	0.031
	≥ 2	6 (35.3)	11 (64.7)	17		7 (41.2)	10 (58.8)	17	
	Total	129 (31.8)	277 (68.2)	406		104 (25.6)	302 (74.4)	406	
Perinatal deaths	Nil	119 (31)	265 (69.0)	384	0.046	97 (25.3)	287 (74.7)	384	0.704
	≥ 1	10 (45.5)	12 (54.5)	22		7 (31.8)	15 (68.2)	22	
Complications	Toxemia	11 (39.3)	17 (60.7)	28	0.654	9 (32.1)	19 (67.9)	28	0.037
	Cardiac disease	1 (50)	1 (50)	2		2 (100)	0	2	
	APH	6 (60)	4 (40)	10		8 (80)	2 (20)	10	
	Jaundice	2 (66.7)	1 (33.3)	3		2 (66.7)	1 (33.3)	3	
	None /Others	109 (30)	254 (70)	363		83 (22.9)	280 (77.1)	363	
	Total	129 (31.8)	277 (68.2)	406		104 (25.6)	302 (74.4)	406	

DISCUSSION

The past five year plans, NHM, MDG, NHM, India's Newborn Action Plan and now the recent SDG all have strategies to reduce the IMR, Perinatal mortality and LBW. NHP 2017 has a target to reduce Under Five Mortality to 23 by 2025 and MMR from current levels to 100 by 2020, reduce IMR to 28 by 2019, reduce NMR to 16 and SBR to "single digit" by 2025[14.]

In joint families prevalence of LBW was 35.8%, 83 and prematurity was 28%, 65. LBW who lived with 3 to 5 family members was 25.5%, 53 and prematurity was 39.4%, 41, Table 3. Prevalence of LBW and prematurity reduced drastically in nuclear family. Similarly Kumar M et al. found higher prevalence of LBW babies in joint families.[2] An ICMR study also revealed 45.5% LBW in joint family as compared to 39.1% LBW in nuclear families.[15] Hindu had 89.1%, 115 of LBW and 90.4%, 94 of premature babies. Krishna et al and an ICMR study had a similar finding.[15,16]

With parental income of <Rs. 2999/- LBW was 33.7%, 56, as income increased it reduced to 26.3%, 21. Within same income, prematurity was 25.3%, 42 and reduced with increase in income. Kumar et al and Ghosh et al found that with increase in income the LBW babies came down.[2,17]

In mothers 21 to 34 years LBW was 31%, 98 and prematurity 26.1%, 99. Maternal of ≤20 years and ≥ 35 years are known risk factors of having a LBW baby[5]. In ≤20 years LBW was 32.6%,28 had and prematurity 17.4%, 4. In Ghosh et al's study 34.3% of mothers ≤ 20 years, had LBW babies.[10] With only 3 mothers ≥35 years, it was hard to conclude. In fathers 21-34 years LBW was 32.1%, 118 and prematurity was 25.3%, 94, however with increase in age both LBW and prematurity did come down. There was no other study analyzing paternal age with LBW or prematurity.

Most mothers were illiterate, LBW was 31.9%, 38 and 27.7%, 33 prematurity, Table 4. With Primary School education, LBW was 36.6%, 15 and prematurity came down to 12.2%, 5. Similar influence of education on birth weight was seen in an ICMR study.[15] Fathers educated till high school had 33.6%, 40 LBW babies and 20.2%, 24 premature babies. With increase in education LBW & prematurity came down. With Graduate and above in either parents, LBW and prematurity increased.

In housewives, LBW was 32.1%, 126 and prematurity was 26%, 102. Ghosh et al's study had a similar finding.[17] The numbers in other groups were too small to conclude. LBW was higher in unskilled fathers at 35.1%, 39 and reduced thereafter. Prematurity was highest at 31.5% in professionals. Only association of birth weight and prematurity with number of family members was statistically significant, Table 4.

Full ANC (at least 4 ANC visits including registration, at least 1 Inj TT and ≥ 100 days of IFA tablets) was 41.6%, 169, of which LBW was 30.8%, 52 and prematurity was 22.5%, 38, Table 5. In the present study, LBW was around 30% whether the mother had no ANC, Partial ANC or full ANC. This may be due to poor content of ANC, there was no note of fundal height or abdominal girth in their case sheets during ANC visits.

With 0 Parity, both LBW and prematurity was high 35.4%, 68 and 33.9%, 65 respectively. Gravida 2-4 had 30.6%, 70 LBW and 20.5%, 47 prematurity, above Gravida 5, the numbers were too small to conclude. Majority mothers were with birth interval between 13 to 48 months, 30.2% had LBW babies and 21.2%, 21 had premature babies.

When mothers took <100 IFA tablets, LBW was 34.80%, 87 and prematurity was 28.8%,72 babies. Both LBW and prematurity reduced to almost half when ≥100 IFA tablets to 42 and prematurity reduced to 32. Only 297 mothers had haemoglobin noted in their case sheet out of which 95 were LBW babies, 32.9%, 82 with 5.1-11gms Hb, and 27.3%, 68 prematurity. With Hb >11.1gms both LBW and prematurity reduced, similar to the study of Kumar et al, Bhargava et al and Ghosh et al in which LBW came down with better Hb.[2,6,17]

Height was noted in the case sheet in only 53.2%, 216, irrespective of it, height was measured in all of them. In height >145.1 cm, LBW was 30.8%, 109 and prematurity was 26.8%, 95. In short stature (≤145 cm) LBW was high at 38.5%, 20 and prematurity was 17.3%, 9. Like in other studies maternal height did influence the birth weight.[6,17] In those with ≤40 kgs, LBW was at 45.5%, 10 than 29.4%, 77 with >40.1 kgs. However prematurity was the same around 23% in both the groups. The weight considered in the study was any maternal weight noted in the case sheet and not the exact maternal weight gain.

Previous fetal loss, Anemia, Toxemia, APH & Bleeding also contributed to LBW.[6] Bhargava et al in his study revealed that with a history of previous fetal loss LBW was17.4% in those <2000 gms and prematurity was 18.5%.[6] Though in the present study maternal complications all contributed to increase in LBW and prematurity, the numbers were too small to conclude. Prematurity was statistical significant with parity, IFA tablets intake, hemoglobin and spontaneous abortions. LBW was statistically significant with maternal weight, spontaneous abortions and perinatal deaths, Table 5.

Maternal care has improved over years: IFA consumption has increased to 30.3% (NFHS-4, 2015-16) from 15.2% (NFHS-3, 2005-06). During NFHS-4, Inj TT in antenatal was at 89% and institutional birth was at 78.9% as compared to 76.3% and 38.7% respectively during NFHS-3. However, there seems to no holistic improvement as full ANC is still at a low of 21% though improved from 11.6% during NFHS-3.[18]

Most of the preterm and LBW babies born do not need intensive care to survive. Essential New born Care of drying, warmth, immediate exclusive breast feeding and basic care for feeding, infections and breathing difficulty is all that is required for these small babies to survive. More effort is needed to identify women at risk of preterm labor through proper ANC and support them to give birth in a health facility that can offer extra care.[19]

WHO recommends minimum eight ANC visits with each ANC component having five interventions: Nutritional, Maternal and fetal assessment, preventive measures, Interventions for common physiological symptoms and health systems to improve the utilization and quality of ANC.[20]

NHM has been facilitating minimum 4 ANC's: Early registration and 1st visit within 12 weeks, 2nd visit between 14-26 weeks, 3rd visit between 28-34 weeks and 4th visit between 36 weeks and term.[21,22] During the first visit record LMP to calculate EDD, BP, Weight, Height, do blood group, Rh typing, blood sugar. Also check for VDRL, HIV, HBsAg and urine for protein & sugar and record all findings in the mother and child protection card (MCP). In all subsequent visits, note the serial measurements of BP, weight, Hb, fundal height and abdominal girth in the MCP card to monitor foetal growth. Also screen for high risk/ complications like pre-eclampsia, anaemia, etc., counsel for birth/emergency preparedness in institution, newborn care, breast feeding, nutrition, FP, including post-partum FP methods.[22] Provide supplements from 2nd Trimester: 100 tablets of IFA, 182 tablets Calcium Tablets and a single dose of Albendazole.[21] These simple and meticulous ANC package will ensure early and appropriate corrective measures whenever required.

CONCLUSION

Weight of the newborn is an important determinant of the newborn health and health of a nation. In the present study prevalence of LBW was 31.8% and prematurity was 25.6%. LBW and premature babies were more prevalent in joint families, with parental monthly income of ≤Rs. 2999, maternal illiteracy and house wives. With increase in income, both LBW and prematurity decreased reflecting a better distribution of nutrition and care for pregnant and the new born. Fathers educated till Primary School and unskilled workers had higher prevalence of LBW babies. However after graduation in both parents, the LBW and prematurity increased after showing reduction with Higher Secondary education. May be higher education is delaying the plan for a family. Socioeconomic factors reflected on maternal health. This was evident from the study when LBW babies became almost 7 times more with 5.1 -11gms Hb when compared to those with Hb >11.1gms. With IFA intake of ≥100 tablets both LBW and prematurity reduced to almost half as compared to those who took <100 IFA tablets.

Antenatal care being an essential element of maternal health gives us a window of opportunity to improve the birth weight and birth gestational age. A good quality, dedicated and sincere comprehensive ANC package will ensure prevention of babies being born too early and too small.

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