

Maternal Bio-social Factors Affecting Birth Weight in Ahoms of Assam

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INTRODUCTION

The study of low birth weight of new borns; a major factor determining child survival, future physical growth and mental development; is of crucial importance for establishing an effective maternal and child health programme. Low birth weight has been defined as birth weight of less than 2500 gm (WHO, 1984). Socio-biological factors like maternal age, maternal education, parity, sex of the baby, antenatal care, height, weight, gestation, socio-economic status, race etc., besides others have been postulated to determine the birth weight of the newborn. It is very difficult to single out any particular factor influencing the incidence of low birth weight. Over 50 per cent perinatal deaths and 30 per cent of infant deaths are due to low birth weight (Trivedi and Mavalankar, 1986).

Data on the socio-biological determinants of birth weight distribution in population groups from North East India in general and Assam in particular is conspicuous by their absence. Hence the present study was conducted among the Ahoms of Assam to determine the relationship between certain selected socio-biological variables and the birth weight distribution among the Ahom neonates of Assam.

The Ahoms belong to the Tai Mongoloid groups, who migrated to Assam from Myanmar (Burma) in the early part of the 13th century. The majority of them are concentrated mainly in the eastern districts of the States like Sibsagar, Jorhat, Lakhimpur, Dibrugarh and Tinsukia districts. Mostly they are agriculturists.

MATERIAL AND METHODS

The present prospective study includes 408 consecutive singleton live births from among the Ahom mothers, delivered at Assam Medical College, Dibrugarh over a stretched period of 12 months (from January to December, 1998). All relevant information regarding mothers and new borns was documented on a pre-structured proforma.

All the neonates were weighted on a lever type balance, within 30 minutes of the birth. Birth weights less than 2500 gms were taken as low birth weights (LBW). Since pre-pregnancy weight of mother was not available in most of the cases, post delivery weight was taken into consideration.

RESULTS AND DISCUSSION

The mean weight of the 408 newborn Ahom was 2.81 kgs. The Indian average birth weight value reported by Gopalan and Raghavan (1969) is 2.80 kgs. The prevalence of LBW in Ahom is 14.22 per cent as against 28.2 percent in Indian neonates (Gopalan, 1996) while it is 4–5 per cent in economically developed countries (Trivedi and Mavalankar, 1986). In Assam, 45.8 percent of babies are found with LBW among Assamese population (Barua, 1973).

Among the Ahom male infants accounted for 47.77 percent of the newborn while 51.23 percent were female (ratio 1 : 1.05). There are more LBW females (32 ; 15.31%) than LBW males (26; 13.07%), however the variation between them is statistically non-significant (Chi-square value= 0.42, d.f.=1).

It is observed that the age of the mother affected the rate of LBW considerably. The incidence of babies with LBW increases steadily as mothers age advances and mothers belonging to 31–35 years of age groups produce more (25.0%) lighter babies as compared to their younger counterparts.

Newborn of primipara were record higher LBW rate. The mean birth weight increased with parity in second and third, but later (4 and 4+ parity) incidence in LBW rate starts increasing again. Weight of the mother was another factor which had an adverse effect on the birth weight of the newborns. Increasing body weight of the mother is accompanied by a sharp decrease of LBW rate of the newborn. Further, with regard to maternal education, a significant effect on the weight of the newborn was observed. In the group of mothers who availed antenatal facilities,

Table 1: Univariate analysis of maternal factors affecting birth weight.

Factors	Birth Weight of Newborn		Chi-square (d.f.)
	< 2.5 kgs	≥ 2.5 kgs	
<i>Sex of the Baby</i>			
Male	26 (13.07)	173 (86.93)	0.42
Female	32 (15.31)	177 (84.69)	(d.f.=1)
<i>Age of Mother</i>			
16-20 yrs	11 (12.79)	75 (87.21)	2.74
21-25 yrs	27 (14.29)	162 (85.71)	(d.f.=4)
26-30 yrs	15 (13.76)	94 (86.24)	
31-35 yrs	5 (25.00)	15 (75.00)	
36+ yrs	-4 (100.00)		
<i>Parity</i>			
Primipara	39 (15.90)	213 (84.10)	
2-3	16 (11.30)	126 (88.70)	1.93
4 and 4+	3 (21.40)	11 (78.60)	(d.f.=2)
<i>Mothers Education</i>			
Illiterate	6 (28.60)	15 (71.40)	3.74*
Literate	52 (13.30)	335 (86.04)	(d.f.=1)
<i>Weight</i>			
<40.0 kgs	10 (24.40)	31 (75.60)	
40.0-49.9 kgs	40 (15.60)	217 (84.40)	
50.0-59.9 kgs	8 (7.77)	95 (92.20)	8.53*
60.0 kgs	7 (100.00)		(d.f.=3)
and above			
<i>ANC Visits</i>			
Unregistered	46 (16.55)	232 (83.45)	3.89*
Registered	12 (9.23)	118 (90.76)	(d.f.=1)

Figures within parentheses indicates percentages

* indicates statistically significant.

the chances of LBW were less (9.23%) in comparison to those who did not avail any such facility (16.55%).

The above results clearly indicates that there are several factors interplaying which lead to LBW babies ; of these in our study we found that three key factors , i.e., maternal education, body weight and ANC visits influenced the birth weight of the newborn significantly. Therefore, attention

needs to be paid to bio-social factors which are amenable to improvement for having better weight babies and to reduce the prevalence of LBW. This can effectively done by strengthening our maternal services during pregnancy; improvement of nutritional status of mothers, promotion of maternal education and better among the community members especially among the mothers.

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KEY WORDS Low Birth Weight. Maternal Age. Maternal Education. Weight. Parity. ANC Visits.

ABSTRACT Few selected maternal bio-social factors on the variance of birth weight among the Ahom neonates is reported here. Literacy level of mothers, mother's age, weight, parity and ANC visits were found to have marked influence on birth weight.

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