

Sir,

Low Birth Weight in Rural Bangladesh

The importance of low birth weight (LBW) in the perinatal and later mortality of infants, particularly in developing countries is well recognized,¹ and recent studies have suggested links between birth weight and adult disease, which may have important implications for developing countries as their populations age.² However, the incidence of LBW in the community in developing countries is often unknown or underestimated.

In Bangladesh, although over 90 per cent of births occur in the community,³ almost all studies of LBW have taken place in institutions and so are not representative of the situation in the general population. The few studies which have been undertaken in rural areas have small sample sizes and may present results in non-standard ways, so that international comparisons are difficult.^{4,5}

During the pilot phase of a prospective study of maternal morbidity being undertaken in a rural area of Bangladesh by the Bangladesh Rural Advancement Committee (BRAC) and the London School of Hygiene and Tropical Medicine (LSHTM), 255 mothers were visited within 7 days of giving birth. Two-hundred-and-four newborn babies were weighed with a Salter Infant Weighing Scale. Twenty-four babies had died before the visit and 30 mothers refused weighing. The majority, 83 per cent, of weighings took place within 72 h of the birth.

The mean birth weight was 2.42 kg (95 per cent CI, 2.37–2.47 kg), with 51 per cent (95 per cent CI 44–58 per cent) weighing less than 2.5 kg and 9 per cent (95 per cent CI 5–13 per cent) less than 2.0 kg. The mothers of the babies in the LBW group were significantly shorter (mean heights 147.88 v. 150.90 cm, $P < 0.001$), lighter (mean post-partum weight 39.77 v. 42.99 kg, $P < 0.001$) and were less likely to have attended school (31 v. 39 per cent, $P = 0.32$). There was little difference in mean age between the groups (25.1 v. 25.3 years), but the mothers of the LBW group were significantly more likely to be primigravidas (34 v. 21 per cent, $P = 0.05$).

	Mean wt	SD	n
Day 1	2.43	0.35	53
Day 2	2.42	0.40	85
Day 3	2.41	0.38	30

The measurements were taken between 1 and 6 days after birth and even healthy newborn babies may lose up to 10 per cent of their body weight during the first few days of life. Some studies⁶ have used standard

daily weight curves to adjust the weight of babies first weighed several days after the birth, back to the birth weight and it was our intention also to use such a curve. However, we found that the mean first weight of babies weighed on any of the 3 days after birth was almost constant.

This suggests excess mortality in the lowest birth weight children. If all babies born had survived to be weighed, the mean weight on day 3 would be expected to be lower than that on day 1. Attempts to use extrapolation curves to determine actual birth weight, while applicable to an individual child, might cause the incidence of low birth weight to be underestimated if used on a population basis in countries where early neonatal mortality is high. There is also evidence to suggest that the proportion of LBW babies in the refusal group might be greater than in the population as a whole, thus acting as an additional source of underestimation.

The findings of this study suggest that the true incidence of LBW in the community may be very high in Bangladesh, constituting a serious public health problem by its association with infant mortality and possible links with adult disease. The results of the prospective study, comprising about 1500 births, will be available later in the year and, together with data on birth weight from BRACs current programmes, are expected to provide an accurate estimate of LBW in rural Bangladesh.

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