SELECTION OF PREGNANT MOTHERS AS BENEFICIARIES FOR NUTRITION SUPPLEMENTS

by

KUSUM P. SHAH,* M.D., D.G.O.

Perinatal mortality rate reflects on the organisation of the obstetrical and neonatal services in the country. In all the developing countries the perinatal loss is shockingly great. Shah *et al,* (1969) have reported that 10.5% of all the deaths in the rural community at Palghar were the early neonatal deaths. The perinatal death rate in 1965 in that community with 42426 population was 32.3. The leading cause of perinatal mortality was low-birth weight and/or prematurity which contributed to 41.1% of the perinatal deaths. In India, 75% to 80% of the newborns weighing 2.5 kg. and less are small-for-dates and not preterm. When the birth weights of perinatal deaths in the community were analysed, Shah *et al,* (1969) found that 83.5% of the perinatal deaths, 92% of the early neonatal deaths and 76.9% of the stillbirths had birth weight of 2.5 kg. and below.

There are number of factors which attribute to low-birth-weight viz. age, parity, height and weight of the mother, period of gestation, multiple pregnancies, social class, diseases of mother and foetus, smoking, abnormalities of placenta and cord and so on. In a vast majority of the mothers in the developing countries the period of gestation is full-term, many of the mothers have no eclampsia or serious or chronic illness except malnutrition and anaemia. Smoking is uncommon and the social class is generally poor. Hence, the age, parity, height and weight of the mother, multiple pregnancies and severe anaemia affect the weight of the newborn. In some countries maternal malaria had contributed to low birth weight Morley *et al,* (1968). Hytten and Leitch (1968) have observed that short women had babies about 8% lighter on an average than tall women, and underweight women had babies 8% lighter than the over-weight. Tall and heavy women had babies about 14% heavier than short and light women. However, Morley *et al,* (1968) did not find any significant difference in children's weight when compared against the heights of mothers and fathers. They observe that children of low-weight mothers weighed less as compared to high-weight mothers. It has been observed that the addition of calories and protein in the diet of the mother during last six to eight weeks of pregnancy raises the weights of the newborns (Iyengar, 1969).

In a study carried out at the Urban (Bombay) and Rural (Palghar) communities, Shah and Shah (1972) observed that the newborns of primiparae were weighing on an average less than those of multiparous women. The maternal height when less than 145 cms. adversely affected the weight. The analysis of weights of the multiparous mothers and

*Reader in Obstetrics and Gynaecology, Grant Medical College and J. J. Group of Hospitals, Bombay and visiting Obstetrician, Rural Health Unit, Palghar.

Received for publication on 5-11-1973.

those of the newborns gave some significant findings (Table I). The average

TABLE I

Low and High-weight, Multiparous Mothers and Weight of their Newborns

Groups	No. of Mothers	Birth Weight (kg.)
Low-weight 40 kg. and below at 20th week; or pre-pregnancy weight 38 kg.	50	2.6
High-weight 50 kg. and above at 20th week; or pre-pregnancy weight 48 kg.	44	2.9

Significant at 5% level.

weight of the newborns was low in the group of mothers who weighed 40 kg. and below at 20th week of pregnancy when compared to the weights of the newborns whose mothers weighed 50 kg. and above at that gestation period. There was no co-relation between the total antenatal weight gain and the birth weight. That the low-weight mothers give birth to low-birth-weight babies has a significant implication. Many of the low-weight mothers have chronic malnutrition, probably since their early childhood period. Malnourished mothers have a less amount of circulating protein mass during pregnancy Duffs *et al*, (1971). This factor or some other factors associated with maternal malnutrition lead to low birth weight babies.

For nursing auxiliaries or other health assistants measuring height is not as accurate as measuring the weight. Hence, to reduce the incidence of low birth weight the health workers should label the pregnant mothers as "At risk" for perinatal mortality and morbidity viz. (1) Those mothers who are chronically malnourished and whose pre-pregnancy weight is 38 kg. and weight at 20th week of gestation is 40 kg. and below or if contacted late an increase in weight will be 1 kg. per month after 20th week, (2) Those who are stunted and have height of 145 cms. and below, (3) Primiparae and (4) Multiple pregnancies. All these mothers should be regularly followed up and should be provided with nutrition supplements. Put together, the "At risk" mothers may constitute 25-30% of all the pregnant mothers.

To reduce the high perinatal and infant mortality rate, the problem of low-birth-weight should be tackled through the programmes of nutrition supplements to the pregnant mothers. A number of countries have launched the nutrition programmes where the children, pregnant and lactating mothers are being given nutrition supplements. In India, the beneficiaries are selected on the basis of hypothetical generalisation that those who stay in tribal villages or in hutments and have very bad socio-economic conditions should be given the benefit out of the scheme. However, a fair proportion of the mothers from these groups do not need supplementation. At the same time, there are many more needy mothers. There should be very simplified medical rather than socio-economic criteria to select the beneficiaries.

Female children who are many a time neglected in developing countries should be well cared for in their early childhood period, as with proper nutrition these children will emerge as young, healthy women with good height and weight and will give birth to good healthy babies.

Summary

Medical criteria for selecting pregnant mothers as the beneficiaries for nutrition supplements have been described. Plea is made to augment the nutrition of the young female children which in future will improve the weight and height of the mothers in developing countries, and will help in bringing down high perinatal and infant mortality rates.

References

1. Duffus, G. M., MacGilliaray, I. and Dennis, J. K.: Jour. Obst. & Gynec. Brit. C'wlth 78: 97, 1971.
2. Hytten, F. E. and Leitch, I.: The Physiology of human pregnancy. Blackwell scientific publications. Oxford, first Ed. 1968.
3. Iyengar, L.: Ind. Jour. Med. Res. 55: 85-89, 1969.
4. Morley, D. C., Bicknell, u. and Woodland, M.: Trans. Roy. Soc. Trop. Med. Hyg. 82: 64, 1968.
5. Shah, Kusum P, and Shah, P. M.: Ind. Pediatr. 9: 526, 1972.
6. Shah, P. M. and Udani, P. M.: Ind. Pediatr. 6: 651, 1969.