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EFFECT OF SOME MATERNAL FACTORS DURING PREGNANCY ON THE BIRTH WEIGHT OF NEONATES

P.M. ATHAUDAARACHCHI, Y.A.S. DE SILVA, C. GUNARATHNE,
C.P. JAYASINGHE AND T.S. JAYAWEERA

3rd Year Medical Students, Faculty of Medicine, University of Peradeniya

The effect of maternal physical activity, nutrition, psycho-social stress and socio-economic status during pregnancy, on the birth weight of neonates was studied. A quota sampling method was used to collect data from 258 eligible Sinhalese postnatal women and their neonates, by direct interviews and by anthropometric measurements at 3 hospitals in Kandy, on randomly decided dates between 27/03/1997 and 20/04/1997.

Using a scoring system which considered severity and duration of physical activity during pregnancy, the mothers were divided into high and low work groups and the mean birth weights of their neonates compared using Student's t-test. The body fat content of the mother was estimated using triceps skinfold thickness and used as an index of her overall nutritional status to analyse its correlation with the birth weight of the neonates using Pearson's correlation test. Maternal height, postnatal weight and postnatal body mass index was also similarly used for correlation, but the latter two were found to be inconsistent indices.

The responses given to a questionnaire on psycho-social stress at work and at home was used to group the mothers into "minimally stressed" and "stressed" groups, and the mean birth weights of their neonates compared using Student's t-test. Employing a scoring system divided by us, which considered per capita income, house and property, education and occupation the mothers were divided into three classes and the mean birth weights of their neonates compared using Student's t-test. The significance of difference of the incidence of low birth weights was also assessed using Chi square test.

The significance of the difference of mean birth weight of neonates was very high ($p < 0.001$) in the following instances:-

between the low and high physical activity groups of mothers, with the latter giving rise to lower mean birth weight.

between the minimally stressed and stressed groups of mothers, with the latter giving rise to mean birth weight.

between high, mid and low socio-economic classes of mothers with latter giving rise to lower mean birth weight respectively in each comparison.

There was a very highly significant incidence ($p < 0.001$) of low birth weight deliveries ($< 2.5\text{Kg}$) in the low socio-economic class compared to the others.

The maternal nutritional status, as assessed by us showed only a weak correlation with birth weights of neonates ($r = 0.37$, $p < 0.001$) explaining only 13.5% of variation of the latter in terms of the former.