

Deferential and associated factors of Low Birth Weights in selected high and low fertility states in India

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Introduction:

Low birth weight is defined as newborns weighing less than 2500 grams – is an important indicator of infant health because of close relationship between birth weight of baby and infant morbidity and mortality. This practical cut-off for international comparison is based on epidemiological observations that infants weighing less than 2,500 g are approximately 20 times more likely to die than heavier babies. It is more common in developing than developed countries; a birth weight below 2,500 gm contributes to a range of poor health outcomes. There are two categories of low birth weight babies: those occurring as a result of restricted foetal growth and those resulting from pre-term birth. Low birth weight infants having a greater risk of poor health or death, require a longer period of hospitalization after birth, and are more likely to develop significant disabilities (UNICEF and WHO, 2004).

According to WHO, the 30 million low birth babies born annually (23.8of all births), often face severe health problems. The incidence of low birth weight is estimated to be 16 percent worldwide, 19 percent in least developed and developing countries and 7 percent in developed countries. The highest incidence is 31 percent in South Asia followed by middle and western Africa, Oceania and Latin America (Deonis, M.et.al.1998) Asia accounts for 75percent, of global situation and in developing world a significant proportion of infants are born at home and are not registered as live birth. Preterm LBW are higher in United States, compared to other developed countries and are believed to contribute to higher infant's mortality in U.S. compared to other industrialized nations despite of technological advances. (Paneth, N.S.1995).

Sources of Data:

The data for the present analysis has been extracted from three rounds of National Family Health Survey (NFHS). In order to meet the first objective we made use of NFHS-I, II and III. To meet the second and third objectives NFHS III has been used. The prevalence of low birth weight has been computed by taking the births which have happened in the two years preceding the survey..The major states having the Total Fertility Rate (TFR) of less than or equal to 2.1, according to NFHS III is considered as low fertility states, namely Andhra Pradesh, Kerala and Tamil Nadu, Punjab and Himachal Pradesh. Similarly, the major states with the TFR of greater than 3.0 is known as high fertility states, these states are Bihar, Rajasthan and Uttar Pradesh.

Methodology:

Both Bi-variate and multivariate analysis have been used in the present study. Bi-variate analyses in the form of cross tabulation have been used to study the prevalence of low birth weight among the high and low fertility states and by selected background characteristics. The birth weights of the baby are classified into two groups that is low birth weights (weights less than or equal to 2499 grams) and normal birth weight (weight greater than or equal to 2500grams to 8000 grams). Since the dependent variable here is low birth weight which is dichotomous (yes/no) in nature, Binary Logistic Regression have been used to examine the net effect of independent variables on dependent variables.

Results:

This study shows that there is huge difference of low birth weight between high and low fertility states in India. Background characteristics have significant impacts on maternal and demographic outcome. Education of women which is showing the strong impact or association with low birth weight, as the level of education of women increase the occurrence of low birth weight continue to get decreases. Mother health indicators such as BMI and Anemia level, maternal care such as ANC and maternal characteristic,

Women age at birth, Birth order and birth interval are strongly associated with low birth weight of babies. If age of women is less than 20 years, the occurrences of low birth weight babies is more as compare to the elder ages, birth order is well known cause of poor outcome of pregnancy and birth weight as well, in this study, birth order shows the significant association with low birth weight of babies. The occurrence of low birth weight is high at first birth order in both selected high and low fertility states and get decline from 2-3 birth order and again get higher prevalence of low birth weight at 4 and above birth order. ANC care which has huge impact at pregnancy outcome, as ANC care increases it results good pregnancy outcome, maternal health and health of babies as well. The reason is behind that more than one half female in high fertility states are with partially ANC care and in low fertility states more than 70 percent females are with full ANC care. Maternal, physical and medical characteristics are vital for good maternal health, healthy pregnancy and pregnancy outcome.

Body mass index and anemia level of women are major cause of good and bad pregnancy outcome. Study shows that prevalence of low birth weight is high among the women who are under weight than in women whose weight is normal. But this situation get inverse in terms of overweight women, although overweight is the factor which is also very crucial and result in poor pregnancy outcome such as low birth weight, it may be reason behind that which is find in this study, major proportion of overweight women, more than 80 percent are belongs to the rich wealth quintile and more than 75 percent are secondary and higher educated overall. And this figure again increases in low fertility states but proportionality lower in high fertility states compare to low fertility states. Wealth and education of women are very crucial in all aspects of women life such as child bearing, reproductive health etc. that is why the prevalence of low birth weight is lower among overweight women not in normal weighted women. In this study it has found that high fertility states has higher prevalence of LBW as compare to low fertility states, which may be because of low fertility states (LFS) are having good maternal and child care utilizations compare to the high fertility states.

Percentage of babies born during 2 years preceding survey with low birth weight by bio-demographic characteristics of their mothers in the selected low and high fertility states of India.NFHS-3

	High fertility states	Low fertility states	Total
Age at birth			
Less than 19	32.6	23.2	28.3
20-29	30.6	19.5	21.4
30-49	19.5	22.3	19.3
Birth order			
1	31.3	19.3	23.7
2-3	26.0	21.0	20.7
4+	33.7	25.2	25.7
Anaemia level			
Severe & Moderate	37.1	27.5	26.3
Mild	28.7	19.7	21.9
Not Anaemic	28.4	18.5	22.3
Antenatal visit			
No ANC visit	35.1	28.6	32.7
Partial ANC	34.4	22.7	26.3
Full ANC	24.4	18.7	19.9
Maternal BMI			
Under weight	36.3	25.2	27.1
Normal	28.1	19.1	20.8
Overweight & Obesity	21.5	17.1	18.7
Sex of child			
Male	27.4	18.6	20.2
Female	32.6	22.7	25.2
Total	29.7	20.4	22.5