



## Book Review

**Adult health and human capital: Impact of birth weight and childhood growth**, 1<sup>st</sup> edition, S.K. Bhargava (Sage Publications, India Pvt. Ltd., New Delhi) 2018, 285 Pages, Price: ₹ 1195.

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This book meaningfully documents auxological, anthropometric, nutritional, epidemiologic, socio-cultural, intergenerational and futuristic aspects as well as research findings of a longitudinal study of babies born in New Delhi. This study popularly known as New Delhi Birth Cohort (NDBC) was initiated in 1969 and has completed its 50<sup>th</sup> yr of follow up efforts. The prime aim of the study was to determine the effects of social, environmental, biological and related factors on the outcome of pregnancy, birth weight, gestation, foetal growth, congenital malformations, physical growth and development of low birth babies in early and later life.

The title of the book is informative, engaging and self-explanatory. The work narrates a story of efforts made by Dr Bhargava, his collaborators and team members for more than four and a half decades (1969-2015) to study the problem and impact of low birth weight (LBW) on a cohort of babies born in New Delhi as well as importance of growth monitoring to contain the magnitude of intergenerational morbidity so as to build healthy and productive human capital.

Content-wise, this book besides the introduction was divided into nine parts, part 1 describes the background of the study, part 2 explains the cohort, part 3 deals with growth, cognitive development and nutrition, part 4 reveals the transition to adult phase, part 5 discusses childhood growth, part 6, throws light on intergenerational and transgenerational studies, part 7 elaborates on community expectations and challenges, part 8 on implications and impact of the study and part 9 summarizes the findings.

The periodic follow up of children representing NDBC provided an opportunity to compare varied aspects of LBW and normal children to learn about their survival, their quality and overall health during the growing years until adulthood. The study provided valuable information on the prevailing healthcare during pregnancy and childbirth, utilization of healthcare facilities, immunization practices and their acceptance by the community practitioners. The documentation of causes contributing to birth of LBW children their mortality and morbidity patterns and understanding of the consequences of being born small is another appreciable contribution of this book. It aids to study the pattern of disease and undernutrition amongst children and its effects in later life. Besides testing the cognitive developmental abilities in children, one of the important gains from this study has been to investigate and compare the health outcomes of normal and low birth children over the last more than four and a half decades.

One of the main contributions of NDBC was to unfold varied aspects of the physical growth (*i.e.* distance and velocity) of LBW children. The efforts made by the author to develop reference standards to monitor growth of Indian children based on a representative sample, well-designed, sampling and analytical techniques deserve appreciation. The pattern of longitudinal growth encountered amongst these children may help to identify periods of rapid and slower growth and to institute need-based, timely interventions to improve health of Indian children. The presentation of longitudinal growth references (charts) for body weight, height and head circumference from birth to 18/20 yr are the other main strengths of this book. However, what barred the author to compute values for 3<sup>rd</sup> and 97<sup>th</sup> percentiles of these important anthropometric parameters remains unclear.

Availability of prospectively and meticulously collected anthropometric data since 1969 on an

urban community from preconception to conception, childbirth, and periodically followed for body growth and body composition, provided an opportunity to test Barker's (1990) hypothesis of 'Foetal Origin of Adult Diseases', now known as Developmental Origin of Health and Adult Disease. The hypothesis states that adverse influences, especially during intrauterine period, result in permanent changes in body physiology and metabolism, which lead to chronic cardiovascular and metabolic diseases in adult lives.

Establishing a relationship of thin children who later became overweight or fat to these diseases, this book emphasizes on the need to identify children with rapid increase in BMI which later appears to be detrimental to the overall health of children. To protect these children from detrimental effects of association of earlier rapid growth and latter development of diseases, strong emphasis on the importance and utility of periodic growth monitoring from conception to adulthood to identify children having abnormal rapid growth during different phases of their life has also been given.

In addition, this monograph on the Indian scenario for the first time provides an opportunity to relate intergenerational changes in the environment, socio-economic conditions, body growth and nutrition of low birth babies growing within same families and surroundings. At one end, findings of the study attributed decrease in the prevalence of low birth rate due to improvement in the economic conditions, nutrition and general healthcare (secular changes), which in India have occurred over the years on the other side, rise in occurrence of adult diseases such as obesity and hypertension in young adolescent children affecting the quality of adult health and human capital

are matters of serious concern, which need to be addressed on priority, and further researched upon.

From the methodological point of view, this book deserves complements as it meaningfully educates planning of long-term serial studies, statistical handling and interpretation of longitudinal data. The documentation of reasons for sample attrition to affect quality of longitudinal information being collected over the last about five decades is a remarkable contribution, which will teach and guide the young researchers to learn ways how to contain loss of subjects to follow ups to ensure effective longitudinality of the serial data being gathered over the years.

Overall, this book emphasizes on the utility of growth monitoring to evaluate and improve auxological, nutritional, overall health status of growing children and also to generate healthy and productive human capital by containing high degree of intergenerational burden of diseases prevailing amongst Indian populations. Keeping in mind the nature and kind of useful wisdom compacted in the columns of this book, it must be read by paediatricians, public health experts and those interested to carry out longitudinal growth studies as well as by health policy planners to whom the burden of untimely death due to disease should actually matter in the Indian scenario.

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