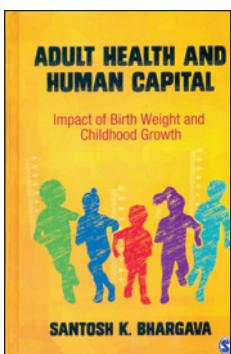


**Adult Health and Human Capital: Impact of birth weight and childhood growth.** Santosh K. Bhargava. Sage Publications, New Delhi, 2018. 285pp, ₹1195. ISBN 978-93-864-4685-5.



Traditionally, diabetes and ischaemic heart disease (IHD) were considered to be diseases of the affluent classes occurring due to their sedentary lifestyle and consumption of energy-dense food. However, a paradigm shift took place when the ‘Barker hypothesis’ was propounded. In the 1980s, Dr David Barker, a British epidemiologist, made a counter-intuitive observation when he found that the mortality rates were higher in less affluent than more affluent people in England and Wales due to IHD.<sup>1</sup>

Barker and Osmond published their seminal paper in *The Lancet* in 1986, which showed a strong correlation between neonatal and

post-neonatal mortality during 1921–25 and IHD mortality during 1968–78 in England and Wales.<sup>1</sup> The authors proposed that this correlation in mortality rates was due to poor nutrition that mediated developmental programming (thrifty phenotype) of the foetus helping it adapt for its postnatal existence in an environment of scarce nutritional resources. However, when such ‘adapted’ organisms get exposed to an environment of relative nutritional excess, they develop a variety of adult-onset diseases (foetal origins of adult diseases). Later, it was realized that such maladaptation can also happen as a result of poor nutrition during early postnatal life. Accordingly, now the phenomenon is designated as Developmental Origin of Health and Disease (DOHaD).<sup>2</sup> Given the high disease burden of IHD, diabetes and other lifestyle diseases as well as that of poor foetal and postnatal malnutrition, the concept of DOHaD has a huge implication for India and other developing countries. It has focused the spotlight of adult diseases on nutrition during pregnancy and early life.<sup>3</sup>

In the past three decades, considerable evidence has emerged in this field and major contributions have come from India. The New Delhi Birth Cohort (NDBC), one of the few long-term cohorts from developing countries, has deepened our understanding of DOHaD. Late Dr Shanti Ghosh and Dr Santosh Bhargava, two notable paediatricians of India, assembled NDBC to determine the problems of low birth-weight (LBW) babies way back in 1969. Perhaps even they would have never realized at that time that NDBC would prove to be such a precious resource for understanding the pathogenesis of adult-onset diseases of major public health importance decades later. The study resulted in many high impact publications related to its original objectives, which include studying body growth of children, adolescents and young adults. Later, the NDBC was painstakingly revived under the leadership of Dr Bhargava to study the impact of nutrition during early life on adult-onset diseases. Now the cohort is nearly half a century old and encompasses four generations of participants and provides deep insights into the way early-life nutrition influences adult health later. Several high impact scientific publications and many international collaborations with different institutions have come about as a result of the NDBC. This is a riveting story worth knowing, for anyone who cares for the health of children as well as adults.

When I saw the book for the first time, I thought I was already aware of most of the findings of the study through scientific publications. However, after going through it, I realized how mistaken I was. I knew only the scientific facts that too in bits and pieces and I was quite unaware of the whole story of NDBC, the ‘whys’ and ‘hows’, findings in toto, the scientific zeal of the investigators and, of course, the commitment and contributions of the families—truly it made for interesting reading with all the thrills of a fictional piece. I got to learn the scientific temperament of the investigators and the rigor of the methods despite (I guess) limited access to formal research methods at that time, perseverance and grit of the investigators despite resource crunch, the trust between the investigators and the participants that glued them together, and the spirit of investigators’ sharing the data for a greater cause. I would like to commend Dr Bhargava for bringing this astounding piece of scientific (and literary) work to the scientific community. It is a must-read for everyone, especially for the younger generation.

The book provides a detailed account of everything about the NDBC—from its conception, implementation and findings, as well as how the cohort was revived and how collaborations were made. The results of the study have been presented in a simple

language, and easy-to-understand tables and illustrations. The description has the accuracy and brevity of a scientific journal but does not have its dryness. The author has organized information meticulously, blended science with philosophy exhibiting his acumen of being a great writer, a quality that we youngsters need to learn from good old-timers. Having the entire story and the scientific contents in a book makes it a valuable resource for anyone and everyone—be it a medical student or a faculty, a researcher or a policy-maker, or even a simple fun reader.

Of course, you need to read the book to find your pick, and I am sure there would be plenty, but I wish to state a few things that caught my imagination: how discussion can translate into great collaboration, what makes a cohort study a great study design, how gravidogram of the study differed from that of the USA, mean birthweight in India 50 years ago (2.7 kg) was not too different from that in recent times (2.9 kg in Intergrowth-21 study<sup>4</sup>), extremely high rates of growth retardation (two-thirds of babies <1500 g were term gestation), high rates of diabetes and hypertension in the population.

The book has an attractive hard cover and high-quality printing, and is of appropriate length (316 pages). An electronic version is also available. I wish the book was a bit reasonably priced. But, I would buy it for it is worth it.

In a nutshell, this book is extremely well written, describes a

riveting story, has scientific content that is relevant to the present context. I strongly recommend this book to everyone including researchers and clinicians, medical students and the faculty, and policy-makers and programme managers.

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### *Obituaries*

Many doctors in India practise medicine in difficult areas under trying circumstances and resist the attraction of better prospects in western countries and in the Middle East. They die without their contributions to our country being acknowledged.

*The National Medical Journal of India* wishes to recognize the efforts of these doctors. We invite short accounts of the life and work of a recently deceased colleague by a friend, student or relative. The account in about 500 to 1000 words should describe his or her education and training and highlight the achievements as well as disappointments. A photograph should accompany the obituary.

—Editor