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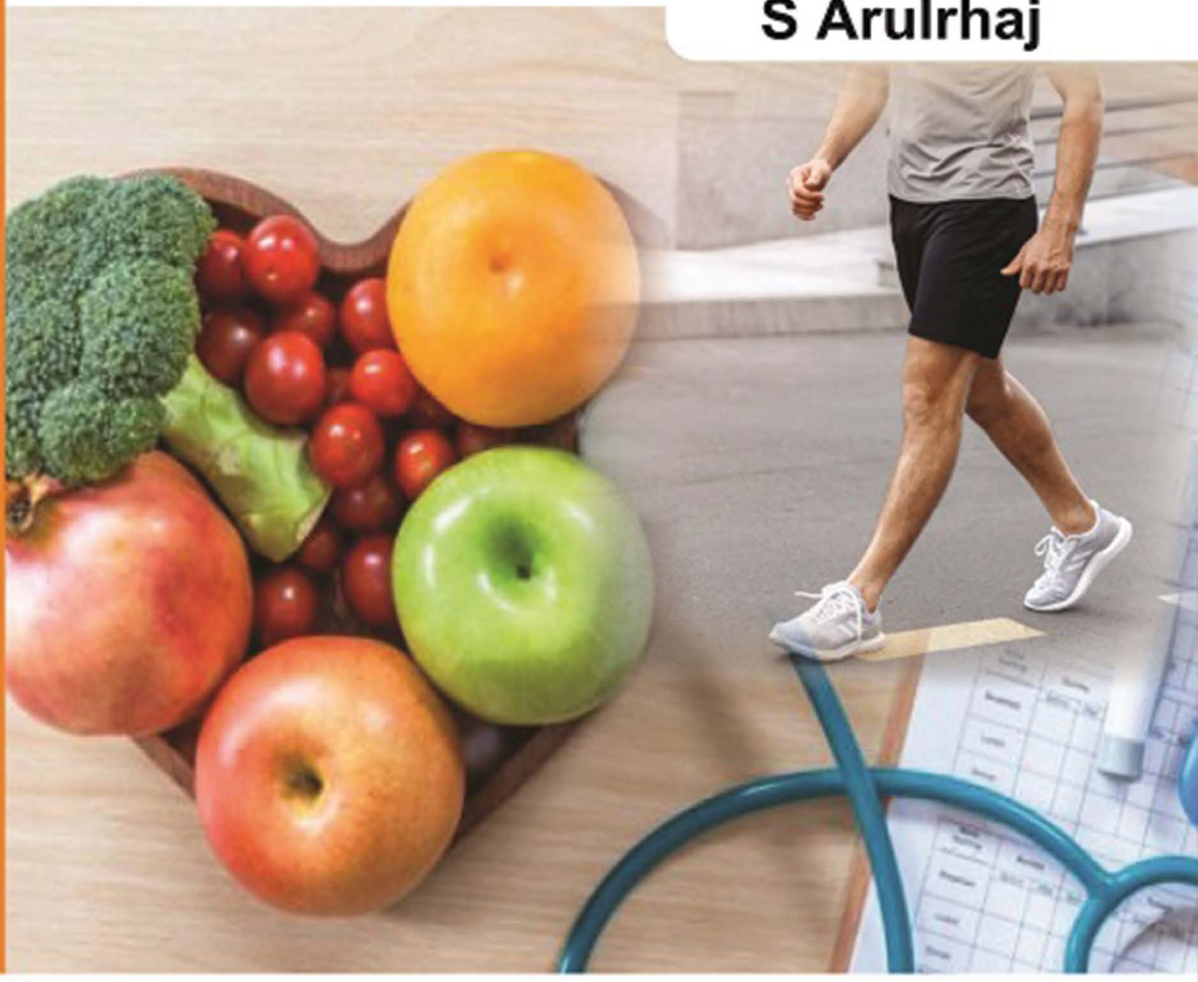
Clinical Update
Lifestyle Medicine

Editor-in-Chief
S Arulrhaj



Editor
Vivek Chandra

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CHAPTER

Introduction and Principles

Vivek Chandra

Lifestyle medicine is considered as comparatively novel subspecialty; however, it is being in practice for several years.[1] The emphasis of lifestyle medicine is different from that of conventional medicine as it focuses on prevention of chronic diseases instead of the treatment. Presently, chronic diseases are considered as a leading cause of morbidity as well as mortality, accounting for majority of healthcare expenses.[2] It is possible to prevent majority of the chronic diseases because these are caused by unhealthy lifestyle.[3] It is recommended to adopt healthy lifestyle for avoiding >80% of the chronic diseases.[4] In 80% of the individuals, there is desire of living with better health but are not sure of the way to follow for healthy lifestyle.[5] Healthcare practitioners may provide limited information on how to execute an effective, long-term plan for attaining good health. The greatest problem continues to be the acceptance as well as implementation of healthy lifestyle. The recommendations for lifestyle can save lives as diseases related to lifestyle have become the major cause of death in the "modernized" world.[6] A thorough examination of the effect of lifestyle on health is required.

The question arises why we get sick and die prematurely? Cardiovascular disease (CVD) as well as carcinoma are considered as the "killer diseases," responsible for above 50% of the mortality in the United States.[7] Both of the diseases are commonly found in the richest countries of the world that spends more on healthcare per capita as compared to other modern economies while having some poorest outcomes related to health. The most significant concern is choice of poor lifestyle on the basis of misinformation.[1,8]

In the past century, the major causes of mortality in the United States have shifted dramatically. The infectious diseases were the leading cause of mortality in the early years of 20th century; however, CVD and carcinoma have now surpassed them in terms of mortality. Furthermore, diabetes and obesity are inflammatory conditions that play a role in CVD and carcinoma,

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and also act as significant comorbidities. They promote each other due to their shared etiologies. Both are warning signs of rapidly deteriorating health, each with its own set of morbidities. This can be remedied by changing our approach to managing our own and our patients' health by adopting lifestyle medicine.

The term lifestyle medicine, which may be defined as "the discipline of studying how daily habits and practices impact both on the prevention and treatment of disease, often in conjunction with pharmaceutical or surgical therapy, to provide an important adjunct to overall health."

There are many different constructs related to these disciplines. There are major contributions of several investigators in the parts of lifestyle medicine including weight management, physical activity, nutrition, cessation of smoking, etc. It is now known that the field is presently merging in the term "lifestyle medicine."

Development is a complex process that involves several interactions between various components. Along with education and health, the significant factors of development are overall economic orientation, governance and other political factors, climate and geography, historical and cultural heritages, cautious acceptance of trade as well as foreign investment, labor laws promoting productive employment, actions of other countries and international organizations, improved macroeconomic management, and protection against the impact of environmental shocks. These interactions have significant consequences on our knowledge of the development processes and for policies. It is presently known that enhanced availability of education is important; however, it is not a magical remedy. Its favorable impacts on development are restricted by an absence of high-level work opportunities, allowing individuals to use education for their economic advantages. Without simultaneous gains in other areas, there are limited effects of good health on development. Comparatively less attention is paid to link between health and education and their effects on development.

Better education as well as better health should be two important goals. There are different types of educational indicators; those being evaluated are mainly concerned with inputs such as investments in education with respect to time and resources. As an example, data is collected by the United Nations Educational, Scientific and Cultural Organization (UNESCO) on several inputs such as enrolment numbers as well as rates, rates of repetition, and ratio of pupil to teacher. In terms of outputs (which are the direct outcomes of the education), education stocks and literacy rates are measured by the UNESCO.

The output data on mean schooling years and test scores in reading, science, and mathematics is collected by the International Association for the Evaluation of Educational Achievement and Organization for Economic Co-operation and Development (OECD). Education is considered as a fundamental human right, and improved education promotes people's well-being. Education, as a development tool, nurtures and improves job and life skills including sociability as well as confidence. Individuals with these

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skills enhance social economic progress through improved production and, possibly, better governance. The definition of health according to the World Health Organization is "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." The World Health Organization and other United Nations (UN) entities produced health indicators such as rates of infant as well as child mortality, life-expectancy, data of morbidity, disease burden, and disability-adjusted life years (DALYs). Improved quality of life is indicated by improvement of such measures. Not only does good health encourage development of human, it also enables individuals to attend work on a regular basis, being more productive at work, and working for longer periods of time. Those who are healthy, play a role in maintaining good health of individuals near them as they do not spread infection, and their physical as well as mental strengths help in taking care of others. Due to correct policy environment, good health can frequently form a basis for success in other areas. The rate of population growth can be changed by good healthy manners that favor development. The improvements in health frequently and significantly affect the most vulnerable individuals, particularly children. As advancement in medicine and nutrition enhance the possibility that a child will reach maturity, parents need to bear less number of children for achieving their ideal family size. When survival of child improves, high fertility (which is still present in most of the individuals of developing countries) decreases. Decreased fertility allows parents to focus their time as well as money on lesser number of children instead of distributing the resources in several, thereby increasing their children's chances of living healthy as well as more educated lives. Decreased mortality of infant and child reduces emotional stress on families, thereby strengthening family ties, and thus, parents have more time for productive activities because there is reduction in requirement of care for unwell infants. The health of mother is also improved by lower fertility because early and frequent childbirth poses serious health risks in women of developing countries having unsafe, weak health systems. In the developing countries, a significant problem is maternal mortality. The reduction in fertility alters structure of population, positively affecting development. The time lag between enhanced survival of child and decision of parents to have lesser number of children results in "boom" generation that is greater as compared to preceding as well as the succeeding generations. When this generation achieves working age, it has the potential to significantly enhance an economy when economic policies favor creation of employment. This "demographic dividend" accounts for up to one third of East Asia's "economic miracle" and it has significant impact in Ireland. Some influences of health as well as education on development have long been documented. These two may also have synergy, in which case it is likely to be underestimating their effect. Knowing the associations between health and education is critical for both social policy and academic understanding. Recognizing how multiple development factors interact with one another can lead to improved policies. An explanation of how education and health interact may give helpful model for such other factors. Majority

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of governments address health and education individually, with distinct ministries for each. Collaboration between both ministries is generally uneven, with education budget decisions rarely considering the effects on health and vice versa. Maximizing the return on investment is crucial in all contexts but especially in developing world where funds are limited. An intervention leading to improved health also affects development of human, but an intervention that improves both health and education may be a more efficient use of resources. In circumstances where trade-offs are unavoidable, knowing that an intervention in one area possibly provide improvement in others can have a significant impact on policy. It is inefficient to ignore these relationships in policymaking. It could potentially be harmful. If they are to be successful, policy interventions aimed at promoting development must consider the wide variety of factors that can hinder progress of country. For example, funds required in teacher training may be wasted if guidance or help related to prevention of HIV is not given to teachers. The education staff in regions of sub-Saharan Africa is obliterated by AIDS, initiating a vicious cycle where teacher's poor health impedes the education of children. As a result of lack of awareness, children are more vulnerable to HIV infection.

There are high literacy rates in countries having low infant mortality. However, adult literacy levels vary among infant mortality levels. Since 1970, there is some improvement in health status as well as educational indicators. However, their relationship has maintained comparatively stable, which is true for indicators other than those given here. But causality cannot be inferred from these data. Health could be influenced by education, or vice versa, or education as well as health could be impacted by other factors.

Examining countries (through case studies) that deviate from the general trend may also be informative. In 1970, the Maldives had high literacy rate (88%) and high rate of infant mortality (157 per 1,000 live births). By 2000, its rate of infant mortality rate significantly decreased (to 59 per 1,000). Is there delayed effect of education on health? Was the quality of education in 1970 not appropriate to affect behaviors or knowledge related to health? On the other hand, did noneducational parameters, like absence of availability to medications or technology impede improvement in health? An examination of why health stagnated education and how the Maldives managed to make significant strides in reducing infant mortality could give instructions to policymakers encountered with similar problems. The interactions among health and education helps in promoting virtuous development spirals; however, there is less conclusive evidence. Good health results in increased school attendance as well as improved learning. Good education of mothers improves health of child, and benefits can endure in adulthood. Policies should be designed and executed that take advantage of the relationships between health and education. The medical community is endangering individuals by disregarding the core causes of disease and failing to promote lifestyle changes for prevention. Developed countries affected by Western lifestyles are in the middle of a health crisis, which is mostly the result of poor choices in lifestyle. Epidemiological, ecological, and interventional studies

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consistently showed that majority of the chronic diseases (such as carcinoma, type 2 diabetes mellitus, and CVD) are caused due to lifestyles increased by poor nutrition as well as physical inactivity.

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"He who takes medicine and neglects to diet wastes the skills of his doctors."
—Chinese Proverb

About the book

An excellent Compendium of various facets of Lifestyle Diseases, its Causative factors, and recommendation for coming out of Lifestyle Diseases safely without lot of Morbidity and Mortality.

S Arulrhaj MD PhD FRCP (Glasgow and London) MBA is a distinguished Professor (Hony) at Dr MGR Medical University, Chennai, Tamil Nadu, India. He is a Dr BC Roy National Awardee, the highest professional award in India and the Founder Chairman, Chief Physician, and Intensivist of Sundaram Arulrhaj Hospitals, Tuticorin and Founder and Chairman for "ARULS Group". He has been the National President of Indian Medical Association and Association of Physicians of India (API). Prof Dr S Arulrhaj is the Founder Chairman of the Commonwealth Medical Association Trust and Commonwealth Medical eVarsity, UK. He is the Founder and Past Chairman of Commonwealth Health Professions Alliance, UK; Founder and Chairman of Indo Global Cardio Diabetes Academy, India, Past President of the Commonwealth Medical Association, Honorary National Professor of Medicine, IMA and IMACGP, India, and Chief Patron of IMACGP and IMA eVarsity, India. He has published Diabetes Update 2011, Clinical Medicine Update Book 2016, Cardiodiabetes Medicine 2017 and 2018. He is regularly contributing for Medicine Update, and API over 20 years. He is a postgraduate teacher in Internal Medicine over 20 years—DNB Medicine and has addressed acute medicine on various national and international platforms. Dr Arulrhaj's medical interests are nonintensive cardiology and intensive care. His public health interests are prevention and control of noncommunicable diseases, cardiodiabetic medicine, digital health, rural health, and prehospital trauma and emergency care. He has organized several conferences—national, international and state API, IMA, and conferences of GCDC and ISECON.

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