

Challenges and Opportunities for Heart Disease Prevention: Change Your Lifestyle

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It gives me great pleasure, to write this editorial for the journal EC Endocrinology and Metabolic Research. I sincerely thank the editorial board, for providing me this opportunity, to express my opinion on this very important topic. Metabolic diseases such as hypertension, excess weight, obesity, type-2 diabetes, and cardiovascular diseases (CVDs) have increased in the incidence and prevalence, to epidemic proportions [1-4]. Several experts have described this increase in the incidence of these diseases as “tsunamis” [5-7]. Epidemics and tsunamis are unexpected events, by nature are hard to predict. On the other hand, the increase in the incidence of metabolic diseases are predictable, and there are number of articles written on this subject, including several with call for actions [8-10]. We and others working on this topic, through our professional society platform, have been advocating awareness about the common risks for CVDs, as well as call for action for the development of comprehensive preventive strategies [11-13]. Since the time Framingham Heart Studies (FHS) were initiated, some seven decades ago, researchers have been documenting various risk factors for the development of cardiovascular diseases. Publication of these modifiable risk factors by FHS, motivated the pharma companies to develop a variety of drugs for the management of these observed risk factors. Discovery of these drugs and other interventional procedures, have shifted emphasis for the management of modifiable CVD risks. In view of this fact, there is less emphasis on the exploration of preventive measures, that reduce the development of these risks.

Several clinical studies have documented the effectiveness, of robust management of modifiable risks, in preventing premature mortality from CVDs [14,15]. Having said that, we would like to inform the readers, that no country has reduced or reversed the increase in the incidence of metabolic diseases. United Nations general Assembly President Maria Fernandes Garces addressed the 73rd session in 2018 and presented a draft approved for political declaration, re-affirming the need to reduce deaths by non-communicable diseases (NCDs) by one third by 2030. UN Secretary General Antonio Guterres noted in his remarks, delivered by his deputy, Amina Mohammed, that NCDs are responsible for some 70% of deaths globally. “The costs of NCDs are enormous—not only to the people affected, but also to national budgets, health systems, and the global economy,” according to his speech. The Global Economic Burden of NCDs will cost over the next 20 years, more than US\$30 trillion. If current trends persist, low-and middle-income countries could lose collectively US\$ 11 trillion in gross domestic product, by 2030 (Harvard Gazette, June 2018, Health Affairs). The noncommunicable risk factor collaboration groups (NCD-Risk), in their seminal article in the Lancet (April 2016) concluded, that, “If the post -2000 trends continue in the increased incidence of type-2 diabetes, the probability of meeting the global target of halting or reducing the rise in the prevalence of diabetes by 2025 to 2020 levels worldwide, is lower than one percent [16,17].

World Heart Day 2019 was on the 29th of September 2019. This year World Heart Federation (WHF) dedicated the day for raising awareness about cardiovascular disease, including heart disease and stroke. As mentioned before, we under the aegis of our profes-

nal society, South Asian Society on Atherosclerosis and Thrombosis (www.sasat.org), have been sponsoring conferences and publishing articles, and compiling monographs on this topic for over three decades. Whereas, professional societies in industrial nations have been advocating such programs for well over half a century. Despite such efforts, there seems to be no reduction or reversal of metabolic diseases worldwide. Let us look at this year's WHF campaign; This year WHF focuses on creating a global community of Heart Heroes, - people from all walks of life who are acting now to live longer, better, heart healthy lives by making a promise; 1) A promise to our families to cook and eat more healthily, 2) A promise to our children to do more exercise and help them to be more active, 3) A promise as healthcare professional to help patients give up smoking and lower blood cholesterol, 4) A promise as policy holder to suggest policies that promote healthy hearts, 5) A promise as an employee to invest in heart-healthy workplaces. Just like our new year resolutions, these promises will be forgotten soon by these 'Heart Heroes'. World Heart Organization (WHO), through the Global Hearts Initiative, is supporting governments around the world to scale-up efforts on CVD prevention and control through three technical packages: MPOWER for tobacco control, SHAKE for salt reduction and HEARTS for the strengthening of CVD management in primary health care. Launched in September 2016, the Global Hearts Initiative has since been rolled out in several countries. In those settings, health workers are being trained to better deliver tested and affordable measures, to protect people from CVDs and help them to recover following a heart attack or stroke. A new global initiative - Resolve to Save Lives - will give renewed impetus to these efforts.

Let us look at a few examples of what can be done at the population level to prevent metabolic diseases. The National Health Services of UK, plans to develop, implement and monitor strategies to reduce the risk of developing Type-2 diabetes in the population as a whole, and to reduce the inequalities in the risk of developing Type-2 diabetes. The NHS will also develop, implement, and monitor, strategies to identify people who do not know they have diabetes. All children, young people, and adults with diabetes, will receive a service which encourages partnership in decision-making, supports them in managing their diabetes, and helps them to adopt and maintain a healthy lifestyle. The 70-year experience of China, in fighting against non-communicable diseases (NCDs), can be classified into three distinct periods: 1) the disease-oriented strategy period (from 1950 to 1994); 2) the risk factor-focused strategy period (from 1995 to 2008); and 3) the social and policy priority strategy period (since 2009). A number of projects were successful and valuable experience and lessons were accumulated during the three periods. Due to the underestimation of the 'explosive' epidemic of NCDs, however, it took China quite a long time to find the right path to curb the upward trend in these diseases.

Since I am writing this editorial for the Journal of Endocrinology and Metabolic Research, I feel it necessary, to bring about some of the current controversies in the management of these diseases. Based on the findings of the prestigious FHS group, American Heart Association and other Professional Organizations, have suggested metrics of ideal cardiovascular health (Jain A, Davis AM:JAMA Oct 4, 2019), in 7 domains; blood pressure, physical activity, cholesterol, diet, weight, smoking, and blood glucose. Despite significant evidence supporting the benefits of lifestyle change and modifiable risk factors in reducing premature mortality from CVDs, studies in the areas of nutrition and other interventions such as lipid lowering, have not provided significant evidence-based, consistent, recommendations. Earlier recommendations by the regulatory agencies, recommended for instance, restricted saturated fat and dietary cholesterol. Opinion of the experts in this area have changed considerably and there are grey areas as to what are the best options. Recent studies question the role of statins as they are known to increase the coronary calcium score. A group of articles about red meat and human health, released by Annals of Internal Medicine, says it's OK to eat them because researchers could not find any links to health problems, like heart disease and cancer. On the other hand, "It's the most egregious abuse of data I've seen" says Walter Willet, MD, a professor of epidemiology and nutrition at the Harvard T.H. Chan School of Public Health. Controversies created by half-baked theories and misinterpretations of earlier work, leads to the misconception that nutrition is hard and confusing, this goes for other lifestyle interventions as well.

Obesity and Diabetes are the two major contributors to the increase in the mortality and morbidity related to CVDs. Adults with diabetes have two to four times higher rates of death from heart disease or stroke. Large randomized controlled studies, including the US Diabetes Prevention Program (DPP) trial, have shown that intensive and structured lifestyle modification interventions in people with

impaired glucose tolerance, can lower the incidence of diabetes by 30-58% compared to basic lifestyle advice (12). Approach to the primary prevention of cardiometabolic diseases at the population level is quite controversial. Some experts feel that the preventive strategies should consider the entire population. Others emphasize the need to concentrate on those “at risk” population. In countries with very large population, like China and India, these strategies are costly and as such not affordable. At the population level the only success story that can be used as a ‘model’ is the North Karelia Heart Disease Prevention Project. Nordic Welfare News (23.5.2018) described this as, - “North Karelia Project-An Unrepeatable Success Story in Public Health”. By and large the metabolic disease are lifestyle diseases, as such individuals are responsible for their health. Therefore, our general advice to these individuals are to change their lifestyles, follow healthy lifestyle – lead an active life, increase physical activity and enjoy a heart healthy diet.

To conclude this editorial in a positive note, I will include the summary of a World Bank Report on this topic of public health importance. The World Bank after an international conference published their report in 2011 titled, “The Growing Danger of Non-Communicable Diseases: Acting Now to Reverse Course” [18]. In this report they say, that despite the magnitude of the challenge, there is considerable hope for action, especially if policy makers and communities mobilize broadly behind evidence, make prevention and targeted treatment of such diseases a priority. They continue, “the potential cost of NCDs to economies, health systems, households and individuals in middle-and lower-income countries is high”. They further assure, “that they stand ready to help countries, particularly those dealing with a “double burden” of disease, to shape strategies to achieve their Millennium Sustainable Development Goals (MSDG) targets”. They conclude, “Worldwide, the best examples of measures to address NCDs show that such efforts can deliver health improvements sooner than commonly thought—within a few years of the elimination of exposure to risk factors, or even more quickly.

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