

Book Review

Obesity and Syndrome X: A Global Public Health Burden

Public Health in the 21st Century

Editors: Mithun Das and Kaushik Bose

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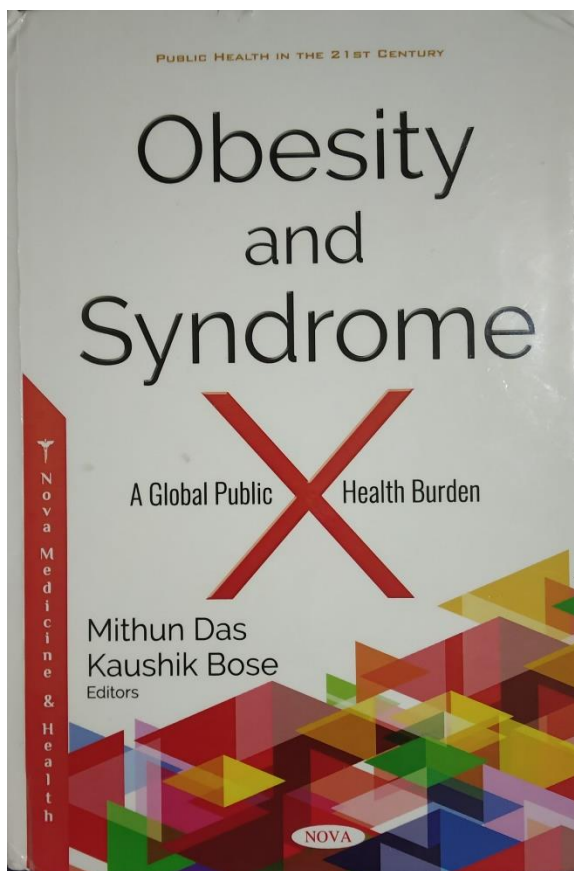
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The recently published edited book on “Obesity and Syndrome X: A Global Public Health Burden (Public Health in the 21st Century)” by Mithun Das and Kaushik Bose is a compendium of papers by 14 research teams from across the world. Partha P. Majumdar, a widely acclaimed human geneticist in his Foreword highlights the risk factors of Syndrome X (MetS) and obesity and its burden on public health care system and on the economy of nations. The papers pertain to three different aspects of Syndrome X: I) Epidemiological aspect, II) Analytical aspect and III) Global public health aspect. National Heart, Lung and Blood Institute, US, defines Metabolic Syndrome (MetS) or Syndrome X as “the name for a group of risk factors that raises your risk for heart disease and other health problems, such as diabetes and stroke.” Metabolic Syndrome is fast becoming an epidemic as numerous people keep on adding to the list of the

sufferers. Research on metabolic syndrome is now occupying the centre stage with scientific teams working in many countries of the world.

The first paper in Part I on Epidemiological aspect is on obesity in Sub-Saharan Africa by Yackoob K. Seedat highlighting the risks of Syndrome X in African populations. Changing food habits and lifestyle are leading to obesity, hypertension, Type 2 diabetes, CHD and hypertension with increased levels of biochemical correlates. Gabriel V. Jasul Jr., Rosa Allyn G.Sy and Rodolfo F. Florentino in their study talk about metabolic syndrome in the Philippines and Asian region. Age and sex specific prevalence of metabolic syndrome in Filipino adults along with the data on HDL, hypertension, hyperglycaemia, triglycerides and waist circumference have been provided. There is an effect of acculturation and changing life styles on metabolic syndrome of Filipinos and Asians migrated to western countries. Chapter 3 is a research on obesity of urban and rural women by Ramanpreet Randhawa and Sharda Sidhu and deals with body mass index, percentage of body fat and fat mass index as a screening tool for general obesity among adult females of Amritsar, India. Percentage of body fat has been determined with the help of bioelectrical impedance method. From the percentage of body fat, fat mass index is calculated and a comparison of obesity as calculated with the help of BMI, percentage of body fat and fat mass index is made. The prevalence of obesity has been more than 80% in urban and rural women of Amritsar. It has been found that women of Punjab have a greater propensity of amassing body fat due to their dietary habits and sedentary lifestyles. Metabolic syndrome and its association with central obesity in Sikkim, India, has been investigated by Sovanjan Sarkar and Barun Mukhopadhyay. The prevalence of metabolic syndrome is found to be significantly higher among individuals with sedentary lifestyle and among those with less active jobs and even among alcoholics. Abdominal circumference is found to be a good predictor for the outcome of metabolic syndrome in this population. An association of adiposity measures with the risk of hypertension among Tribes of Gujarat, India, has been studied by Gautam Kshatriya. The study shows an increasing prevalence of prehypertension and hypertension in recent times among both the sexes in tribal areas. A significant positive correlation of all adiposity measures with blood pressure has been recorded indicating adiposity as a risk factor for hypertension.

These studies review the epidemiological aspect of MetS with the help of original investigations from Africa and Asia in particular and information on the risk factors for metabolic syndrome in general has been outlined. Some detailed global review on the risk factors for MetS would have enhanced the scope of this book.

In Part II dealing with the analytical aspect of MetS, there are 5 papers. The first in this series by Md. Golam Hossain, Sadekur Rahman, Suhaili Mohd, Sa Aik, Rashidul Alam Mahumud, Premananda Bharati and Pete E. Lestrel is a study on obesity and hypertension in Bangladesh university students. Overweight individuals and those sleeping less than 7 hours are more likely to become pre-hypertensive and hypertensive than their counterparts. Physical activity of more than 45 minutes a day for 5 days a week minimises the risk of hypertension. Silvia Kirchengast in her paper states that as per WHO (2016) estimates there are 1.9 billion overweight individuals in the world above 18 years of age, that means every third person is overweight. Her study reveals that macrosomia is related to obesity and the risk of MetS in later life. On the other hand, macrosomia is linked to maternal obesity and gestational weight gain. A review of studies has been made on anthropometric measures of Asian Indians and its role in determining the risk of MetS and T2DM by Sampriti Debnath, Nitish Mondal and Jaydip Sen.

The review indicates a strong association between anthropometric, genetic and biochemical indicators and the risk of T2DM and MetS. They have emphasised on creating separate cut-offs for BMI, waist circumference (WC) and hip circumference (HC) for Asians and other groups. The role of regional adiposity in determining the risk of MetS also needs to be investigated. The role of C-reactive protein (CRP), family history of diabetes (FHD) in determining the risk of MetS has been investigated by Riddhi Goswami, Mithun Das and Indrani Lodh on Asian Indian women. The findings indicate that higher levels of C-reactive protein and a positive FHD are the risk factors for MetS. C-reactive protein + 1059G>C polymorphism have functional effect on protein production. Jyoti Ratan Ghosh conducted a study to test the sensitivity and specificity of BMI to assess excess body fat. Positive predictive values of BMI cut-offs have shown that about 17% of women with high PBF (>30%) had BMI < 30 kg/m². Negative predictive values indicate that almost one out of three (32%) women with normal PBF (<30%) have high BMI (≥30 kg/m²). The study shows that BMI is a poor predictor of excess body fat in this population.

Part III: Global public health aspect includes 4 papers dealing with the role of governments in managing obesity and undernutrition, the state-wise obesity situation in India and other countries and MetS and its determining factors. Paper by Stanley Uljaszek highlights the situation of double burden of malnutrition in India, i.e., obesity and undernutrition. While the former has alarmingly increasing prevalence with time the latter shows decline with time. Undernutrition is linked to lower physical fitness and work capacity and hence a loss to nation in economic terms especially in the developing countries. On the other hand, obesity is shamed and considered a drag to economy in the developed countries. Soibam Jibonkumar Singh and Thoudam Bedita Devi have focussed their attention on how the modernization has resulted in obesity which is fast becoming a pandemic issue. They have discussed the problem with data from different countries and also from different states of India. Anup Adhikari highlights the role of obesity and consequent physical inactivity in altering the biochemical profiles of individuals leading to MetS. The last paper in this section by Mithun Das and Kaushik Bose focusses on finding the common determinants of MetS worldwide. Role of family history of specific diseases leads us to know the genetic susceptibility of such families and groups. Changing nutritional habits lead to obesity which is the biggest hurdle in physical activity and together these factors lead to MetS. Epigenetic factors and 'thrifty genotype' which may have had beneficial effects in the human evolutionary history are now becoming villains in the changed present scenario thus leading to the development of diabetes, hypertension and metabolic syndrome X.

On the whole, the book is a treasure house of a set of original papers on specific populations highlighting the risk factors leading to metabolic syndrome (MetS) and another set of papers reviewing the present global situation from different perspectives of obesity, diabetes and other risk factors for syndrome X (MetS). The scientific teams actively engaged in studies on the MetS have contributed to this book thus making it a highly valued treatise. Not only the scientific community, educators and students but the governments, administrators and the conscious people will find this book highly useful. The book should also adorn the shelves of all the libraries as well because of its very informative content.