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India: Dietary Diseases

Determining Solutions to dietary issues in India

India is a vast country with a varied population and rich culinary traditions, but sadly, the prevalence of dietary disease is on the rise. India has a population of roughly 1.37 billion and a land area of 3.287 million sq km (Subrahmanyam, 1998). India's tropical climate is typically found in all parts of the country as well as lots of humidity in some areas. 60% of India's land is agricultural land with major crops and exports being rice, sugar, grain, spices, and textiles.

In India, the typical family size is 2-3 generations of family living together in the same household. This includes aunts, uncles, grandparents, etc. Common job sectors in India include agriculture, information technology, healthcare, and manufacturing. The average monthly wage in India is around ₹32,000 Rupees (USD 390) however, many consider this inaccurate, as a large portion work in the informal sector, where wages are much lower than the formal sector. A typical diet in India is extremely diverse, with foods including rice, beans, lentils, flatbreads, pickles, and dairy products such as yogurt and clarified butter (ghee). Sweets, desserts, and fried foods also are part of their diet. Families receive food through many outlets including supermarkets, local markets, street vendors, and even home gardens. Meals are prepared using LPG (Liquefied Petroleum Gas) and sources such as biomass (wood, charcoal, agricultural residues) and kerosene are still prevalent in many rural areas of India, particularly in low-income households.

Poverty, lack of education, and food insecurity are major barriers that obstruct families from earning a living and having access to nutritious food. Many people in India live under the poverty line, where many daily needs and opportunities are highly limited, especially food. Many families in India may not have access to quality education and/or vocational training, which leads to job areas that are underemployed due to the skill set needed that people lack.

India has taken action in addressing the challenge of access to affordable healthcare and education. Under numerous articles of the Indian Constitution and the Right of Children to Free and Compulsory Education Act, of 2009, free and compulsory education is provided as a fundamental right to children aged 6 to 14. As for healthcare, all Indian citizens can receive inpatient and outpatient care at government facilities (Tikkanen, 2020). However, access to affordable healthcare and education remains a major challenge in India. In many rural areas, access to healthcare remains an issue, due to factors such as a lack of trained medical personnel, weak infrastructure, and limited supplies of medical equipment. Education still poses a challenge for many families, as schools are often unequipped with textbooks, classrooms, and even trained teachers.

India has been facing a significant dietary change in recent years mostly due to a sedentary lifestyle and urbanization. The increased consumption of fast foods and reduction in the consumption of traditional home-cooked meals led to obesity-related diseases such as type 2 diabetes, and cardiovascular disease (CVD). According to the International Diabetes Federation, over 77 million people in India were living with diabetes in 2019. Research conducted by the National Family Health Survey (NFHS) in 2019-2020 displayed variations in the prevalence of diabetes in different groups of people. For example, the prevalence of diabetes was higher among urban residents (8.2%) compared

to rural residents (5.4%). Similarly, the prevalence of obesity was higher among women (12.7%) compared to men (9.8%), and among those with higher education and income levels. According to a study published in the Indian Journal of Endocrinology and Metabolism, the prevalence of diabetes in elderly people in India is around 20-25%. Diabetes affects marginalized groups of people, as there is a lack of access to healthcare and nutritious food. CVD is the leading cause of death in India, responsible for approximately 28% of all deaths in India according to the World Health Organization (WHO). Diet still plays a major role in the causes of CVD, as foods high in trans fat such as fried food and processed snacks are detrimental. A lack of fruits and vegetables and high sugar and salt intake are also contributors. Additionally, treatment for CVD is limited due to the lack of access to healthcare and affordable medications. Another factor is cultural barriers to seeking medical care, particularly among women.

Solutions:

The first solution for improving diet in India is to focus on dietary education and the importance of physical exercise for people of all ages. Education about age-appropriate nutrition, the importance of portion control, and understanding food labels are essential. Encouraging and supporting breastfeeding can help prevent malnutrition and associated diseases in infants and young children. Introducing the topics related to health and diet right from the elementary school level is the key. Kids and adolescents can be impacted in various ways such as traditional textbook teaching and social media that teach a balanced diet with essential nutrients such as carbohydrates, proteins, fats, vitamins, and minerals. Dietary education opportunities are to be created for parents and the elderly during large gatherings such as cultural, sports meets, etc which can in turn help them serve as role models for their children. There are a few government-led initiatives and also some campaigns run by non-governmental organizations (NGOs). There are few reports of poor quality food being served to children including complaints of undercooked rice and dal, stale food, and even insects in the food. These programs can be effectively implemented by a multi-faceted approach of partnerships, training, quality control, and technology. For example, The Akshaya Patra Foundation strives to eliminate classroom hunger by implementing mid-day meals for school children (Akshaya, 2022). It is well run across the country with the help of funding from government grants, corporate partnerships, and individual donations. Investing in diet education and creating an enabling environment for healthy eating can promote better health outcomes for individuals and communities.

The second solution is to regulate the Indian food industry. The Indian food industry is maintained by the Food Safety and Standards Authority of India (FSSAI), an autonomous body under the Ministry of Health and Family Welfare (FSSAI, 2020). The FSSAI was established to ensure that the food produced and consumed in India is safe and of good quality. FSSAI is also responsible for the fortification of staple foods like rice, wheat flour, and salt with essential vitamins and minerals that can help address micronutrient deficiencies in the population. The Government of India in collaboration with the United Nations World Food Program (WFP), Tata Chemicals, and Cargill supports the fortification of rice and wheat flour in schools in several states (WFP, 2023). Despite being a central authority, the FSSAI has been criticized for not providing sufficient information to the public about the food products and businesses that have been found to violate the regulations. The authority's reach is also limited, particularly in rural areas. Consumer awareness and their ability to access the results of food testing, mandating the registration and licensure of all the food businesses with the authority can ensure FSSAI complies with food safety and quality standards.

The third solution is by integrating the principles of India's traditional medicine systems with modern medicine in daily living. Ayurveda is an ancient system that originated in India more than 5,000 years ago. It emphasizes the use of natural remedies and a balanced lifestyle to prevent and treat diseases. Ayurveda gives importance to consuming locally grown fresh food which in turn reduces the dependence on imports such as edible oils and spices. However, allopathy has become dominant in India recently due to the availability of modern drugs and the influence of Western medical education. Furthermore, there have been concerns about the quality and safety of Ayurvedic medicines and the lack of scientific evidence of their treatments. Despite these challenges, Ayurveda is accepted by the Government of India as an official system of medicine. The Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy (AYUSH), and the National Ayurvedic Institute promote and regulate the practice of traditional systems in India. The Central Council for Research in Ayurvedic Sciences (CCRAS, 2023) is one of the main research institutions that research Ayurveda and promote integration with modern medicine. Their integration can prevent and control the rising burden of non-communicable diseases in India, particularly cancer, diabetes, and CVD.

In conclusion, it is important to note that in addition to India's long-lasting issue of malnutrition, the country is now challenged with the major health problem of obesity-related diseases due to adopting a Westernized diet and a modern sedentary lifestyle. The solutions stated earlier can help accomplish the food insecurity as India has an endless pool of talent and labor with its largest democracy, growing young population, stable government, and a free press that can help vulnerable populations access healthy food.

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