

The Role of Preventive Healthcare and Lifestyle in Combating Chronic Diseases

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Abstract

Chronic diseases, including cardiovascular conditions, diabetes, cancers, and respiratory disorders, represent a significant global health challenge, accounting for 70% of worldwide deaths and imposing substantial burdens on healthcare systems and individuals. Emerging evidence underscores the transformative role of nutrition in preventing and managing these conditions, emphasizing the power of informed dietary choices in shaping health outcomes. Diets rich in antioxidants and minimally processed foods, such as the Mediterranean and Dietary Approaches to Stop Hypertension (DASH) diets, are associated with reduced risks of cognitive decline, cardiovascular disease, and diabetes. Whole grains, vegetables, fruits and nuts demonstrate protective effects against the onset and progression of chronic diseases. Conversely, ultra-processed diets contribute to increased caloric intake, weight gain, and metabolic imbalances. Physical activity and stress management further complement nutritional strategies. Regular moderate exercise for 150–300 min weekly reduces the risk of depression and obesity, while yoga, mindfulness, deep breathing and consistent sleep patterns enhance overall resilience. Preventive screenings, combined with these lifestyle interventions, significantly improve survival rates by enabling early detection and timely action. Addressing chronic diseases requires overcoming challenges such as individual variability, food accessibility, and gaps in nutritional education. Collaborative, multidisciplinary efforts are vital to advance research, implement evidence-based strategies, and promote population-wide health improvements. This synthesis reinforces the critical need for sustainable dietary habits, highlighting that even small, incremental lifestyle changes can lead to profound health benefits. It underscores the timeless proverb: “prevention is better than cure”.

Introduction

Chronic diseases, encompassing cardiovascular conditions, diabetes, cancers, and respiratory disorders, have become significant global health challenges. They are responsible for over 70% of global deaths and impose a considerable burden on healthcare systems, communities, and individuals. Despite their prevalence, up to 80% of these non-communicable diseases (NCDs) are preventable through early intervention and lifestyle changes. This

abstract explores the pivotal role of preventive healthcare, focusing on lifestyle modifications as a sustainable solution to reducing the impact of chronic diseases.

Nutrition: A Foundation of Prevention

Nutrition plays a foundational role in preventing and managing chronic diseases. Research highlights that nutrient-dense, minimally processed diets significantly lower the risks associated with

cardiovascular diseases, diabetes, and neurodegenerative conditions. Evidence-backed dietary patterns, such as the Mediterranean (Characterized by an abundance of fruits, nuts, vegetables, whole grains, legumes, seeds, and olive oil), Dietary Approaches to Stop Hypertension (DASH) (focuses on low sodium intake while incorporating fruits, vegetables, low-fat dairy, whole grains, and lean proteins) and plant based (Vegetarian and vegan diets, rich in fiber, antioxidants, and phytonutrients) diets, emphasize whole foods, healthy fats, and plant-based ingredients. These diets decreased risk of cancer, obesity, type 2 diabetes, and reduce the risk of heart disease by up to 30%. They are associated with improved cognitive function and reduced inflammation also (Levitan et al., 2013). Consumption of antioxidant-rich foods (Vitamins C and E, β -carotene and Omega-3 fatty acids) reduces neurodegenerative disorders by mitigating oxidative stress and inflammation. Micronutrients, including iron, magnesium, phosphorous, vitamin C, potassium and vitamin B1, further enhance protective mechanisms, reducing the onset of conditions like diabetes and asthma. Probiotics, prebiotics, and fiber-rich diets support gut microbiota health and reducing risks of metabolic and digestive disorders (Darnton-Hill et al., 2004). However, the overconsumption of ultra-processed foods (food with very high sodium, sugar and low density lipoprotein) has been linked to weight gain, hormonal imbalances, and increased caloric intake, underscoring the need for public health initiatives to promote

minimally processed diets (Rico-Campà et al., 2019).

Physical Activity: Move More, Live Better

Regular physical activity is an essential pillar of preventive healthcare. The World Health Organization (WHO) recommends 150–300 minutes of moderate-intensity exercise weekly to combat chronic disease risks. Activities such as walking, yoga, and cycling improve cardiovascular health, regulate weight, and enhance mental well-being. Research demonstrates that consistent exercise lowers the risk of depression by 25% and significantly reduces blood pressure and obesity rates (Yang, 2019). Physical movement also improves insulin sensitivity, thus playing a critical role in diabetes management and prevention.

Stress Management: Building Emotional Resilience

Chronic stress worsens the risk of heart disease by 40% and other non-communicable diseases by increasing inflammation and oxidative stress. Effective stress management techniques, including mindfulness, meditation, journaling, and deep breathing exercises, significantly improve mental and physical health outcomes. Incorporating even five minutes of daily mindfulness can reduce cortisol levels and improve heart rate variability, supporting overall resilience. These practices, combined with adequate physical activity, contribute to a holistic approach to health (Steptoe & Kivimäki, 2012).

The Importance of Quality Sleep

Sleep is a vital yet often overlooked component of health. Adults require 7–9 hours of restorative sleep to support immune function, hormonal balance, and cognitive performance (Mukherjee et al., 2024). Disrupted sleep patterns, often exacerbated by excessive screen time, are linked to increased risks of hypertension, obesity, and mental health disorders. Encouraging consistent sleep schedules and minimizing screen exposure before bedtime can significantly improve overall health, contributing to chronic disease prevention.

Preventive Screenings: Saving Lives through Early Detection

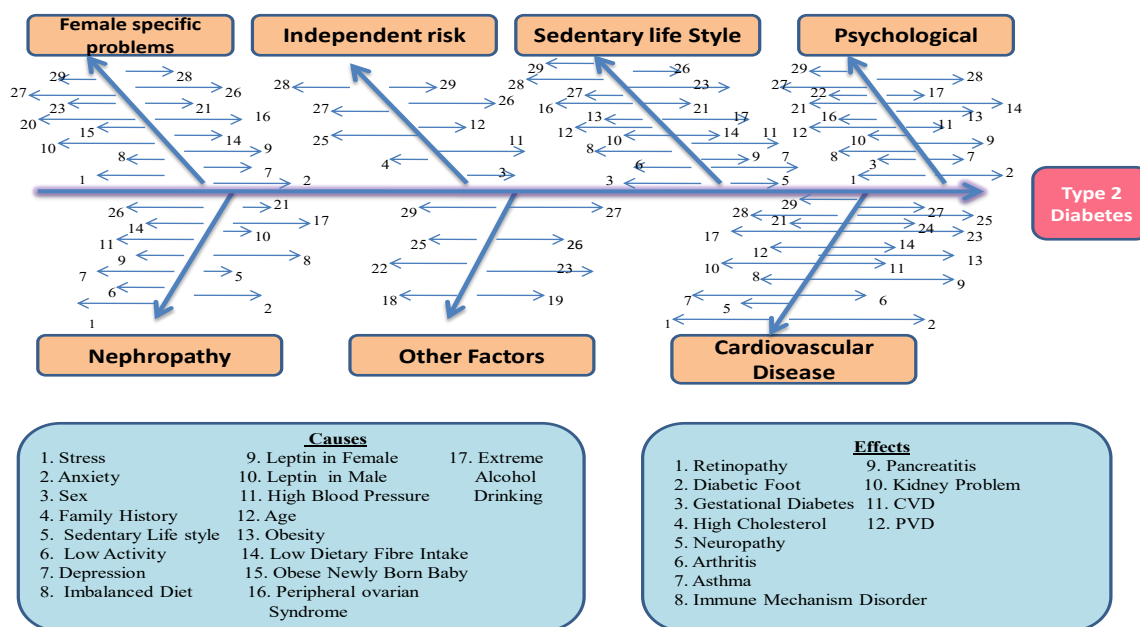
Preventive screenings are crucial for identifying and addressing potential health risks early. Regular blood pressure checks, glucose monitoring, and cancer screenings dramatically improve survival rates by facilitating timely interventions. For example, early cancer detection improves survival rates by up to 90%. Integrating routine screenings with lifestyle interventions creates a robust framework for chronic disease prevention, allowing individuals to take proactive control of their health (WHO, 2020).

Challenges in Implementing Preventive Healthcare

Despite the clear benefits of preventive strategies, several challenges hinder their widespread adoption. Individual variations, including genetic predispositions, cultural norms, and socio-economic factors, complicate the implementation of standardized interventions. Personalized nutrition and tailored lifestyle programs are necessary to address these disparities effectively. Nutritional education and accessibility remain pressing concerns. Food deserts, limited awareness, and financial barriers prevent many individuals from adopting healthier diets. Expanding educational initiatives and ensuring access to affordable, nutrient-dense foods are critical steps toward equitable healthcare.

Cause – Effect Analysis of Diabetes Mellitus type 2

Several factors had been found to be associated with risk factors of the condition as Diabetes mellitus is considered to be the global non-communicable diseases which are being caused by altered lifestyle. Majority of the causes identified were related to the stress, anxiety, sedentary lifestyles, obesity etc. (Chakravorty, S., 2016).



A Call for Multidisciplinary Collaboration

The integration of preventive healthcare into mainstream medical practice requires collaboration among healthcare professionals, researchers, policymakers, and the food industry. Research efforts must focus on understanding the complex interplay between genetics, lifestyle factors, and nutrition. Policymakers must create environments that encourage healthy behaviors, such as promoting active transportation and regulating the marketing of ultra-processed foods. Furthermore, partnerships with the food industry can facilitate the development of healthier, affordable food options that meet population-wide nutritional needs.

Case Studies: Real-Life Impact of Prevention

Real-life examples underscore the transformative potential of preventive healthcare. For instance, a 45-year-old individual diagnosed with prediabetes successfully reversed their condition within 12 weeks through a combination of a DASH diet, daily physical activity, and regular glucose monitoring. Such cases highlight the power of incremental lifestyle changes and the need for comprehensive support systems to empower individuals in their health journeys.

Conclusion and Suggestion

Preventive healthcare, anchored in lifestyle modifications, offers a sustainable solution to the global burden of chronic diseases. By prioritizing nutrition, physical activity, stress management, sleep, and early detection, individuals and communities can achieve profound health benefits. Addressing existing challenges requires a concerted effort to educate, empower, and equip individuals with the tools needed for long-term health. As the proverb goes, “Prevention is better than cure.” By embracing this philosophy, we can foster resilience, sustainability, and equity in healthcare systems, ensuring a healthier future for all.

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