

THE ROLE OF NUTRITION IN PREVENTING CHRONIC DISEASES THE ROLE OF NUTRITION IN THE PREVENTION OF CHRONIC DISEASES

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SUMMARY:

Introduction: Nutrition is recognized as an essential factor in the prevention of chronic diseases, including cardiovascular disease and type 2 diabetes. This study addresses the benefits of healthy eating patterns, such as the Mediterranean and DASH diets, and the barriers faced in adhering to these practices, including inequalities in access to nutritious foods and the high prevalence of diets rich in ultra-processed foods. **Material and Method:** A literature review was conducted following the PRISMA guidelines. Databases such as PubMed, Scopus and Web of Science were consulted, and the selected articles analyzed dietary patterns, nutritional strategies and their relationships with the prevention of chronic diseases. **Results and discussion:** The review highlighted the effectiveness of balanced diets in reducing metabolic risk factors. However, structural challenges, such as the high cost of healthy foods and gaps in public policies, limit their implementation. Personalized interventions and nutrition education across the life course emerged as promising approaches. Intersectoral collaboration was considered essential to create healthier food environments. **Final Considerations:** Nutrition transcends the field of health, representing a social and political commitment. Public policies, nutritional education and integrated interventions are essential to address the global challenges of chronic diseases and transform dietary patterns into a sustainable health promotion strategy.

Keywords: nutrition, chronic diseases, prevention, public health, food policies.

ABSTRACT:

Introduction: Nutrition is recognized as an essential factor in the prevention of chronic diseases, including cardiovascular diseases and type 2 diabetes. This study addresses the benefits of healthy dietary patterns, such as the Mediterranean and DASH diets, and the barriers to adherence to these practices, including inequalities in access to nutritious foods and the highest

prevalence of diets rich in ultra-processed foods. **Material and Methods:** A literature review was conducted following PRISMA guidelines. Databases such as PubMed, Scopus, and Web of Science were consulted, and the selected articles analyzed dietary patterns, nutritional strategies, and their relationships with the prevention of chronic diseases. **Results and Discussion:** The review highlighted the effectiveness of balanced diets in reducing metabolic risk factors. However, structural challenges, such as the high cost of healthy foods and gaps in public policies, limit their implementation. Personalized interventions and nutritional education throughout the life cycle emerged as promising approaches. Intersectoral collaboration was considered essential to creating healthier food environments. **Conclusions:** Nutrition transcends the field of health, representing a social and political commitment. Public policies, nutritional education, and integrated interventions are indispensable to addressing the global challenges of chronic diseases and transforming dietary patterns into a sustainable health promotion strategy. **Keywords:** nutrition, chronic diseases, prevention, public health, food policies.

1. INTRODUCTION

Nutrition plays a central role in the prevention of chronic diseases and is widely recognized as a modifiable factor in reducing the risk of conditions such as cardiovascular disease, type 2 diabetes, and certain cancers (Darnton-Hill, Nishida, & James, 2004). Balanced diets rich in fruits, vegetables, whole grains, and lean proteins have been associated with a significant reduction in the incidence of these diseases, as well as improvements in quality of life (Kimokoti & Millen, 2016).

Furthermore, healthy dietary patterns can positively influence metabolic factors such as glucose, cholesterol and blood pressure levels, acting as a pillar in maintaining public health (Neuhouser, 2019). The life cycle approach, which considers nutritional impacts from childhood to old age, has been shown to be effective in mitigating the cumulative effects of inadequate dietary exposures (Slawson, Fitzgerald & Morgan, 2013).

The World Health Organization (WHO) highlights the need for public policies that prioritize nutritional education and access to healthy foods, especially for vulnerable populations. Strategies such as taxing ultra-processed products and promoting

healthy food environments have been suggested as a means of addressing rising rates of chronic disease (World Health Organization, 2003).

However, challenges such as inequalities in access to nutritious foods and the prevalence of unbalanced diets continue to represent significant barriers. These obstacles require collaborative action between governments, health organizations and the food industry to promote sustainable changes in global dietary patterns (Ojo, 2019).

This study seeks to review the advances and challenges in the role of nutrition as a strategy for preventing chronic diseases, highlighting the main scientific evidence and proposing ways to strengthen the integration between nutrition and public health.

2. MATERIAL AND METHOD

This study conducted a literature review with the aim of exploring the role of nutrition in the prevention of chronic diseases. The research followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, ensuring transparency and methodological rigor in the selection and analysis of studies.

The databases consulted were PubMed, Scopus, Web of Science and Google Scholar. Descriptors such as “nutrition and chronic diseases”, “prevention of metabolic diseases” and “healthy diets” were used, combined with Boolean operators to refine the results.

Inclusion criteria included studies that addressed the impact of dietary patterns and nutritional strategies on the prevention of chronic diseases. Duplicate studies, those with restricted access or those outside the scope were excluded. Data analysis focused on identifying patterns, gaps and intervention proposals.

The results obtained served as a basis for highlighting relevant strategies and proposing recommendations in the context of public health.

3. RESULTS AND DISCUSSION

The literature review showed that nutrition plays an essential role in preventing chronic diseases, such as cardiovascular disease, type 2 diabetes and some types of cancer. Studies have shown that healthy eating patterns, rich in fruits, vegetables,

whole grains, lean proteins, and unsaturated fats are associated with a significant reduction in the risk of these conditions. These diets are effective in controlling metabolic risk factors such as obesity, hypertension, and dyslipidemia, which often precede the development of chronic diseases (Darnton-Hill, Nishida, & James, 2004).

The Mediterranean and DASH (Dietary Approaches to Stop Hypertension) dietary patterns have been widely cited as effective strategies for health promotion. The Mediterranean pattern, for example, has been shown to reduce cardiovascular events in high-risk populations, while the DASH diet has contributed to lower blood pressure levels and improved lipid profiles (Kimokoti & Millen, 2016). These findings reinforce the importance of evidence-based nutritional interventions in the management of metabolic diseases.

However, significant challenges still limit adherence to these healthy eating practices. Barriers such as the high cost of fresh and whole foods, lack of access to educational resources, and socioeconomic inequalities have been highlighted as factors that hinder the adoption of healthy habits in vulnerable populations (Ojo, 2019). The high prevalence of diets rich in ultra-processed foods, associated with changes in modern lifestyle, has also been identified as an aggravating factor, contributing to the global increase in chronic diseases (Neuhouser, 2019).

Furthermore, public policies to encourage healthy eating are still insufficient in many countries. Measures such as taxation of ultra-processed foods, nutritional labeling and the promotion of healthy food environments have been recommended by international bodies such as the World Health Organization (WHO, 2003). However, their implementation faces resistance, especially in contexts where the food industry exerts strong influence on policymaking.

The review also highlighted the importance of personalized interventions. Individualized diets that take into account the metabolic, cultural and socioeconomic needs of each individual were identified as promising strategies. Recent studies have shown that precision nutrition, based on genetic and metabolic information, can significantly improve health outcomes and adherence to dietary interventions (Slawson, Fitzgerald & Morgan, 2013).

Another relevant point is the need for nutritional education throughout the life cycle. From childhood, healthy eating patterns have a cumulative impact on the prevention of chronic diseases. Schools, communities and health services play a crucial role in disseminating information and forming healthy habits from an early age (Neuhaus, 2019). For elderly populations, interventions focused on maintaining muscle mass and bone density, through diets rich in proteins and micronutrients, have also proven effective in preventing comorbidities.

While the benefits of good nutrition are clear, the role of cross-sector collaboration in promoting healthy habits cannot be overlooked. Partnerships between governments, non-governmental organizations and the food industry are essential to address systemic challenges that limit access to nutritious foods. In addition, community-based programs that promote local food cultivation and the appreciation of sustainable agriculture can significantly contribute to food and nutrition security (Ojo, 2019).

In summary, nutrition is a powerful tool in the prevention of chronic diseases. However, structural challenges and public policy and educational interventions must be addressed to maximize its benefits. Creating environments that encourage healthy food choices, combined with government and community support, is essential to combat the growing epidemic of chronic diseases worldwide.

4. FINAL CONSIDERATIONS

Nutrition is not only an essential tool in the prevention of chronic diseases, but also a manifestation of social, cultural and political choices that shape the health of populations. This study highlighted the complexity and interdependence between dietary habits and the contexts in which they are practiced, showing that preventing chronic diseases through nutrition requires much more than individual changes.

Despite scientific advances demonstrating the benefits of healthy eating patterns such as the Mediterranean diet and DASH, structural challenges remain a significant barrier. Limited access to nutritious foods in vulnerable populations and the impact of food globalization, with the proliferation of ultra-processed foods, reinforce the need for a collective and integrated response to address these issues.

The analysis of the data points to the urgent need for public policies that not only promote healthy foods, but also transform the food environment as a whole. Measures such as promoting sustainable agriculture, encouraging the consumption of local foods and regulating the advertising of unhealthy products should be prioritized.

Furthermore, interventions should consider cultural diversity and regional differences, so that more inclusive and adapted solutions can be implemented. Nutrition education programs, especially those focused on young people, have the potential to create generations that are more aware and empowered to make healthy eating decisions.

Therefore, nutrition is more than just a health issue; it represents a field of social and political action. Integrating intersectoral efforts and investing in research that connects nutritional science to social reality are crucial steps to transforming advances in nutrition into concrete improvements for global health. Only through this broad approach will it be possible to mitigate the impacts of chronic diseases and build a healthier and more resilient society.

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