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Non-medical pathways to cardiovascular health: a discourse analysis of dietary and lifestyle interventions in the United States

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Abstract

Background: Cardiovascular diseases (CVD) are a leading cause of morbidity and mortality in the United States. While conventional medical treatments dominate cardiovascular care, non-medical pathways, such as plant-based dietary patterns and lifestyle modifications, have gained recognition for their potential to complement traditional approaches.

Methods: A qualitative discourse analysis was conducted on peer-reviewed articles published between 2013 and 2023. A systematic search across databases identified 10 studies that met inclusion criteria, focusing on non-medical interventions for reducing CVD risk in U.S.-based populations. Data extraction and thematic synthesis highlighted key patterns related to dietary and lifestyle interventions, cost implications, physiological outcomes, and implementation barriers.

Results: Five key themes emerged from the analysis: (1) Plant-based dietary patterns, including vegetarian and vegan diets, consistently improved blood pressure and lipid profiles. (2) Lifestyle modifications, such as increased physical activity and stress management, enhanced cardiovascular health when integrated into primary care frameworks. (3) Non-medical interventions demonstrated significant improvements in physiological outcomes, including reductions in systolic and diastolic blood pressure. (4) These interventions were cost-effective and scalable, making them viable options for diverse populations. (5) Barriers to implementation included cultural and socioeconomic factors, as well as challenges in sustaining long-term adherence.

Conclusion: Non-medical pathways, particularly plant-based dietary patterns and lifestyle modifications, play a critical role in mitigating cardiovascular disease risks. These approaches not only address key physiological risk factors but also provide cost-effective, accessible, and scalable solutions for diverse populations. Overcoming barriers to implementation through tailored interventions and community-based strategies is essential to ensure their success. Integrating these non-medical pathways into healthcare frameworks could significantly reduce the burden of CVD and promote equitable health outcomes.

Keywords: Cardiovascular Health, Qualitative Discourse Analysis, Dietary and Lifestyle Interventions, United State, United Kingdom

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Background

Cardiovascular health remains a paramount public health issue in the United States, where cardiovascular diseases (CVD) account for a significant proportion of morbidity and mortality. While conventional medical treatments have long been the focus of cardiovascular care, there is an increasing recognition of the role that non-medical pathways, particularly dietary and lifestyle interventions, play in promoting cardiovascular health. This manuscript aims to conduct a discourse analysis of these interventions, emphasizing their potential to complement traditional medical approaches and improve health outcomes. The integration of lifestyle modifications, such as dietary changes and increased physical activity, has been shown to significantly reduce cardiovascular risk factors, including hypertension, obesity, and dyslipidemia [1,2,3]. Research has consistently demonstrated the efficacy of lifestyle interventions in managing cardiovascular health. For instance, systematic reviews indicate that dietary restrictions combined with exercise can lead to improved blood glucose control and reductions in visceral fat, even in the absence of weight loss [4]. Furthermore, lifestyle interventions tailored to specific populations, such as those in Jeddah, Saudi Arabia, have shown that multidisciplinary approaches can motivate individuals to adopt healthier habits,

thereby reducing cardiovascular risk [5]. Similarly, counseling interventions aimed at supporting self-management have yielded positive outcomes in individuals at risk for CVD, reinforcing the importance of personalized lifestyle modifications [6]. These findings highlight the necessity of incorporating lifestyle interventions into broader public health strategies to combat the rising prevalence of cardiovascular diseases. The discourse surrounding lifestyle interventions also intersects with issues of health equity and access to care. Socioeconomic factors significantly influence individuals' ability to engage in healthy behaviors, with those from lower socioeconomic backgrounds facing greater barriers to accessing nutritious food and safe environments for physical activity [7,8]. Addressing these disparities through community-based initiatives and educational programs is essential for fostering equitable health outcomes. For example, educational interventions promoting healthy lifestyles have been shown to lead to significant improvements in blood pressure and cholesterol levels among hypertensive patients in Ethiopia [9]. Such community-driven efforts can empower individuals to take charge of their health and mitigate the impact of social determinants on cardiovascular risk. Hence, this paper explores the multifaceted nature of non-medical pathways to cardiovascular health, emphasizing the critical role of dietary and lifestyle interventions. By analyzing existing literature and current discourse, we aim to elucidate how these approaches can effectively complement traditional medical treatments, ultimately leading to improved cardiovascular health outcomes in the United States. The integration of lifestyle modifications into healthcare practices not only addresses individual health needs but also contributes to the broader goal of reducing the burden of cardiovascular diseases across diverse populations.

Methods

Study design

This study employed a qualitative discourse analysis methodology to examine non-medical pathways for reducing cardiovascular disease (CVD) risks. The analysis focused on peer-reviewed articles published within the last ten years in the United States, exploring themes related to dietary and lifestyle interventions.

Article Selection

A systematic search of the literature was conducted using electronic databases, including PubMed, Scopus, and Web of Science, to identify relevant peer-reviewed articles. Search terms included combinations of keywords such as "non-medical interventions," "cardiovascular disease risk," "dietary patterns," "lifestyle modifications," "plant-based diets," and "United States."

Articles were included if they met the following criteria:

• Published between 2013 and 2023.

• Focused on non-pharmacological interventions for reducing CVD risks.

• Conducted within the United States or involving U.S.-based populations.

• Peer-reviewed and available in full text.

The search yielded a total of 215 articles. After screening titles and abstracts for relevance, 45 articles were shortlisted for detailed review. Following the application of inclusion and exclusion criteria, 10 articles were selected for in-depth analysis.

Data Extraction and Analysis

The selected articles were reviewed to extract relevant information, including study objectives, intervention types, outcome measures, methodologies, and key findings. This information was compiled into a discourse analysis table to facilitate thematic synthesis. Thematic analysis was conducted iteratively, focusing on identifying recurring patterns and unique insights within the literature. The analysis emphasized the role of plant-based dietary patterns, lifestyle modifications, physiological outcomes, cost implications, and implementation barriers. Key themes were contextualized within the broader discourse on public health and cardiovascular disease prevention.

Results

A comprehensive thematic analysis revealed five key themes related to non-medical interventions for cardiovascular disease risk reduction: effectiveness of plant-based diets, integration of lifestyle modifications in primary care, impact on physiological outcomes, cost-effectiveness, and challenges to implementation.

Effectiveness of Plant-Based Diets

Plant-based dietary patterns, particularly vegetarian and vegan diets, consistently emerged as effective strategies for mitigating CVD risks. Lopez et al. [10] documented that vegan diets significantly reduce blood pressure levels, while Wang et al. [11] highlighted improvements in lipid profiles, including reductions in LDL cholesterol and triglycerides. These findings suggest that plant-based diets address multiple modifiable risk factors simultaneously, offering a holistic approach to CVD prevention.

Integration of Lifestyle Modifications in Primary Care

Dhungana et al. [12] emphasized the importance of integrating dietary and lifestyle interventions into primary care frameworks. Key lifestyle modifications, such as physical activity, stress management, and smoking cessation, were highlighted as essential components that complement dietary strategies and enhance patient outcomes.

Impact on Physiological Outcomes

The selected studies consistently demonstrated improvements in physiological outcomes. Yokoyama et al. [13] reported significant enhancements in plasma lipid profiles, while Gibbs et al. [14] documented reductions in both systolic and diastolic blood pressure. These findings underscore the physiological benefits of non-medical interventions in cardiovascular health management.

Cost-Effectiveness

Non-medical interventions were also found to be cost-effective, reducing reliance on pharmaceutical treatments and lowering healthcare costs. Dhungana et al. [12] highlighted that dietary and lifestyle modifications are scalable and accessible, making them viable options for resource-constrained settings.

Challenges to Implementation

Despite their efficacy, several challenges to implementation were identified, including cultural barriers, socioeconomic disparities, and issues with long-term adherence. Strategies such as community-based programs and culturally tailored interventions were recommended to address these barriers.

Synthesis of Findings

The thematic analysis highlights the multifaceted nature of non-medical interventions in reducing cardiovascular disease risks. Plant-based dietary patterns, particularly vegetarian and vegan diets, consistently emerged as effective strategies for improving key physiological outcomes, including blood pressure, lipid profiles, and systemic inflammation. When integrated with broader lifestyle modifications, these interventions not only mitigate CVD risks but also enhance overall health and well-being. Moreover, the cost-effectiveness and scalability of non-medical interventions make them indispensable components of public health strategies. Addressing barriers to implementation, such as cultural and socioeconomic challenges, will be pivotal in maximizing their impact. Future research should focus on longitudinal studies to assess the sustained benefits of these interventions and explore innovative approaches to enhance adherence across diverse populations.

Discussion

The results of this study underscore the critical role of non-medical interventions in cardiovascular disease prevention, with plant-based dietary patterns emerging as particularly impactful. The findings align with previous research that highlights the cardioprotective benefits of vegetarian and vegan diets, including reductions in blood pressure, improvements in lipid profiles, and lowered systemic inflammation. By focusing on these dietary patterns, public health strategies can address multiple modifiable risk factors simultaneously, offering a comprehensive approach to reducing CVD prevalence. Notably, the scalability and accessibility of these interventions make them practical for implementation across diverse socioeconomic contexts. However, the success of such initiatives depends on addressing adherence barriers, such as cultural preferences and individual motivation. In addition to dietary interventions, the inclusion of broader lifestyle modifications, such as increased physical activity and stress management, reinforces the importance of holistic approaches to cardiovascular health. These findings suggest that primary care frameworks should integrate dietary counseling with behavioral health strategies to maximize patient outcomes. While the cost-effectiveness of these interventions presents a compelling argument for their adoption, further research is needed to evaluate their long-term impacts and effectiveness in specific populations. Future studies should also investigate innovative methods to enhance adherence, including community-driven programs and technological solutions, to ensure the sustainability of these non-medical pathways to cardiovascular health.

Conclusion

The findings of this discourse analysis highlight the transformative potential of non-medical interventions, particularly plant-based dietary patterns and lifestyle modifications, in mitigating cardiovascular disease risks. These interventions, rooted in accessible and scalable approaches, offer significant physiological benefits, including improved blood pressure regulation, lipid profile optimization, and reduced systemic inflammation. The evidence underscores their pivotal role in addressing modifiable risk factors and enhancing public health outcomes. By integrating these interventions into primary care frameworks and public health policies, it is possible to create sustainable strategies for cardiovascular disease prevention, particularly in diverse and underserved populations. However, the successful implementation of these interventions depends on overcoming barriers such as cultural preferences, socioeconomic constraints, and adherence challenges. Tailored approaches that consider the unique needs of various populations are essential to maximizing their impact. Future research should focus on longitudinal evaluations of these interventions, the development of innovative adherence strategies, and the exploration of complementary technologies to support sustainable lifestyle changes. This study reaffirms the necessity of prioritizing non-medical pathways as integral components of holistic cardiovascular health strategies, offering a pathway to a healthier and more equitable society...

Abbreviation

CVD: Cardiovascular Diseases; U.S: Unites States; LDL: Low-Density Lipoprotein Cholesterol

Declaration

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Availability of data and materials

Data will be available by emailing joelawobode@gmail.com

Authors' contributions

Awobode Joel Oyetomi (AJO) is the responsible author for the conceptualization, manuscript writing, and interpretation of the findings. The author read and approved the final manuscript.

Ethics approval and consent to participate

I conducted the research following the declaration of Helsinki. However, the qualitative research and review articles need no ethical approval.

Consent for publication

Not applicable

Competing interest

The authors declare that they have no competing interests.

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