frontiers | Frontiers in Sustainable Food Systems

TYPE Editorial
PUBLISHED 21 February 2024
DOI 10.3389/fsufs.2024.1339162

OPEN ACCESS

EDITED AND REVIEWED BY
Anna Kiss,
University of Szeged, Hungary

*CORRESPONDENCE
Alexandru Rusu
✉ rusu_alexandru@hotmail.com

RECEIVED 15 November 2023
ACCEPTED 08 February 2024
PUBLISHED 21 February 2024

CITATION
Trif M, Rusu A, Esatbeyoglu T and Ozogul F (2024) Editorial: Dietary change strategies for sustainable diets and their impact on human health, volume II.
Front. Sustain. Food Syst. 8:1339162.
doi: 10.3389/fsufs.2024.1339162

Editorial: Dietary change strategies for sustainable diets and their impact on human health, volume II

Monica Trif[1], Alexandru Rusu[2]*, Tuba Esatbeyoglu[3] and Fatih Ozogul[4,5]

[1]Department of Food Research, Centre for Innovative Process Engineering (CENTIV), Stuhr, Germany, [2]Biozoon Food Innovations GmbH, Bremerhaven, Germany, [3]Department of Molecular Food Chemistry and Food Development, Institute of Food and One Health, Gottfried Wilhelm Leibniz University Hannover, Hannover, Germany, [4]Department of Seafood Processing Technology, Faculty of Fisheries, Cukurova University, Adana, Türkiye, [5]Biotechnology Research and Application Center, Cukurova University, Adana, Türkiye

KEYWORDS

sustainable diet, health, dietary patterns, nutrients, environment

Editorial on the Research Topic
Dietary change strategies for sustainable diets and their impact on human health, volume II

Promoting sustainable diets is crucial for both personal health and the wellbeing of the planet. To mitigate the environmental impact of our food system, which is closely tied to international health and our sustainability goals, implementing dietary-change strategies presents a viable solution to address this issue. Projections indicate a continued shift toward more sustainable diets on a global scale in the coming decades, with a concurrent positive effect on human health (Davies et al., 2023).

Our current global challenge is to promote and facilitate healthy, well-balanced diets for an estimated 10 billion people by 2050 (FAO et al., 2023). Recently, there has been a growing interest in innovative and sustainable approaches, such as incorporating plant-based ingredients or exploring alternatives like algae, single-cell protein, and insects. Sustaining the popularity of these ingredients requires the development of diets that are not only sustainable and nutritious but also replicate the sensory experience - including taste and texture - of familiar products, such as animal-derived ones. While transitioning to healthier, primarily plant-based diets is crucial for achieving our environmental targets, these shifts must navigate potential obstacles like economic factors (e.g., corruption, infrastructure), political considerations (e.g., ideology, values), social aspects (e.g., technology, lack of community support, social norms), and cultural influences (e.g., tradition, culture, religion) (Alcorta et al., 2021).

Nutritionists advocate for a shift toward increased consumption of healthier, primarily plant-based or plant-rich diets, as a viable alternative to meat-based diets. These dietary choices have the potential to offer significant benefits in terms of both public health and environmental impact

(Pointke and Pawelzik, 2022; Shabir et al., 2022). Meat-based diets tend to exert a greater environmental strain compared to plant-based ones, contributing to issues like natural resource depletion, particularly through extensive water use in livestock production, as well as substantial consumption of other resources, and pollution of both water and air (Espinosa-Marrón et al., 2022).

A healthy and balanced diet, as defined by the WHO, plays a crucial role in safeguarding against malnutrition in all its forms, as well as non-communicable diseases (NCDs) like diabetes, heart disease, stroke, and cancer (FAO and WHO, 2019; Ruthsatz and Candeias, 2020). Our health is intricately linked to our dietary choices, and it is common for individuals to not consistently adhere to a lifelong healthy diet. This is often influenced by factors such as the widespread availability of processed foods and shifts in our overall lifestyle. As part of WHO's prioritized initiatives, outlined in May 2018 and ratified in the 13th General Programme of Work (GPW13), WHO's focus has transitioned toward advocating for healthy lifestyles and promoting overall wellbeing for all. Presently, WHO lends support to the promotion of a conducive food environment – including food systems that encourage a diverse, balanced, and healthy diets. The goal of a balanced diet is to furnish our bodies with all essential nutrients, and achieving an optimal ratio between different food groups is pivotal in this endeavor (Cena and Calder, 2020).

Nearly all diets trend comes with distinct drawbacks - they may either completely eliminate a specific nutrient or promote foods associated with a notably low energy supply, often becoming more costly (Hargreaves et al., 2021). Prioritizing health is a pivotal consideration when contemplating dietary adjustments. Simultaneously, there is a growing demand for plant-based foods driven by heightened awareness of the environmental impact of meat consumption (Socol et al., 2022). The Food and Agriculture Organization (FAO) asserts that adopting a diverse, balanced, and nutritious diet is crucial for ensuring sustainable ecological, economic, and social food supply. A sustainable diet focuses not only on the nutritional aspects of food, but also on the environmental, social, and ethical implications of the ingredients chosen (Fidan et al., 2022). This means considering factors like where and how the food was produced, its impact on biodiversity, the use of natural resources, and the welfare of workers involved in the production process. The trend diets appear to have a significantly positive impact on human health. These diets can be adaptable and customizable to accommodate individual food preferences, availability, cultural practices, and socioeconomic values. By using food efficiently, individuals can ensure they have a diverse and balanced diet (Noort et al., 2022).

Author contributions

MT: Conceptualization, Writing – original draft. AR: Conceptualization, Writing – original draft. TE: Writing – review & editing. FO: Writing – review & editing.

Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

Acknowledgments

We acknowledge all authors who have given opportunity to publish their articles and reviewers to review the manuscripts submitted in our Research Topic.

Conflict of interest

MT was employed by the Centiv. AR was employed by the Biozoon.

The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

The author(s) declared that they were an editorial board member of Frontiers, at the time of submission. This had no impact on the peer review process and the final decision.

Publisher's note

References

Alcorta, A., Porta, A., Tárrega, A., Alvarez, M. D., and Vaquero, M. P. (2021). Foods for plant-based diets: challenges and innovations. *Foods* 10, 293. doi: 10.3390/foods10020293

Cena, H., and Calder, P. C. (2020). Defining a healthy diet: evidence for the role of contemporary dietary patterns in health and disease. *Nutrients* 12, 334. doi: 10.3390/nu12020334

Davies, K. P., Gibney, E. R., and O'Sullivan, A. M. (2023). Moving towards more sustainable diets: Is there potential for a personalised approach in practice? *J. Hum. Nutr. Diet* 36, 2256–2267. doi: 10.1111/jhn.13218

Espinosa-Marrón, A., Adams, K., Sinno, L., Cantu-Aldana, A., Tamez, M., Marrero, A., et al. (2022). Environmental impact of animal-based food production and the feasibility of a shift toward sustainable plant-based diets in the United States. *Front. Sustain.* 3, 841106. doi: 10.3389/frsus.2022.841106

FAO, IFAD, UNICEF, WFP and WHO. (2023). *The State of Food Security and Nutrition in the World 2023. Urbanization, Agrifood Systems Transformation and Healthy Diets Across the Rural–Urban Continuum*. Rome: FAO.

FAO and WHO (2019). *Sustainable Healthy Diets – Guiding Principles*. Rome: FAO (2019).

Fidan, H., Esatbeyoglu, T., Simat, V., Trif, M., Tabanelli, G., Kostka, T., et al. (2022). Recent developments of lactic acid bacteria and their metabolites on foodborne pathogens and spoilage bacteria: facts and gaps. *Food Biosci*. 47, 101741. doi: 10.1016/j.fbio.2022.101741

Hargreaves, S. M., Raposo, A., Saraiva, A., and Zandonadi, R. P. (2021). Vegetarian diet: an overview through the perspective of quality of life domains. *Int. J. Environ. Res. Pub. Health* 18, 4067. doi: 10.3390/ijerph18084067

Noort, M. W. J., Renzetti, S., Linderhof, V., du Rand, G. E., Marx-Pienaar, N. J. M. M., de Kock, H. L., et al. (2022). Towards sustainable shifts to healthy diets and food security in sub-saharan africa with climate-resilient crops in bread-type products: a food system analysis. *Foods* 11, 135. doi: 10.3390/foods11020135

Pointke, M., and Pawelzik, E. (2022). Plant-based alternative products: are they healthy alternatives? Micro- and macronutrients and nutritional scoring. *Nutrients* 14, 601. doi: 10.3390/nu14030601

Ruthsatz, M., and Candeias, V. (2020). Non-communicable disease prevention, nutrition and aging. *Acta. Biomed.* 91, 379–388.

Shabir, I., Kumar Pandey, V., Shams, R., Dar, A. H., Dash, K. K., Khan, S. A., et al. (2022). Promising bioactive properties of quercetin for potential food applications and health benefits: a review. *Front. Nutr.* 9, 999752. doi: 10.3389/fnut.2022.999752

Socol, C. T., Chira, A., Martinez-Sanchez, M. A., Nuñez-Sanchez, M. A., Maerescu, C. M., Mierlita, D., et al. (2022). Leptin signaling in obesity and colorectal cancer. *Int J Mol Sci.* 23, 4713. doi: 10.3390/ijms23094713