




Abstract

Environmental Impact and Food Consumption among Current Diets and Alternative Dietary Scenarios Worldwide: A Systematic Review [†]

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Abstract: Diets characterized by a relatively high caloric and animal-based protein content have a negative impact on both human health and the environment. Unhealthy and unsustainable diets with a high content of meat and low intake of plant-based products are predominant worldwide. A balance between health and sustainability is necessary since diets that are environmentally sustainable could lack macro- and/or micronutrients and result in nutrient deficiencies. A systematic review was conducted following PRISMA guidelines to analyse the environmental impact and the food group consumption of current diets and alternative dietary scenarios worldwide. Scopus, Web of Science and PubMed were searched. The initial systematic search yielded 5639 publications. The final dataset was composed of full-length original studies in the English language conducted from 2000 onwards. Studies conducted on general, free-living populations aged ≥ 18 years old were included. In total, 120 original articles from 41 countries globally were included, and 703 diets and dietary scenarios were extracted. The majority of studies/surveys were considered as nationally representative (68%). Current diets were the most prevalent (42%), while optimized dietary scenarios accounted for 29% of the studies. Among the environmental indicators, the carbon footprint was the most reported (86% of dietary scenarios), followed by the use of land (36%), total freshwater (22%), blue water (15%) and energy (14%). Diets were further divided into main diet categories based on their description after data extraction. The environmental impact and the food consumption of dietary scenarios varied widely between diets and between continents and continental regions due to the methodological heterogeneity in dietary assessments and the different definitions of diets and food groups. As expected, vegan diets reported the lowest GHGEs impact (0.3–2.6 CO₂ eq/d); however, their healthiness and their nutrient efficiency were not analysed due to the underreporting of the nutritional composition of the dietary scenarios in these studies. Specific dietary scenarios performed strongly regarding carbon footprint, but poorly for other environmental impact factors; thus, diets' impacts should be holistically analysed through multiple environmental indicators. Data on food consumption and environmental impact are available only for a small part of the world. Extensive research on dietary intake and environmental impact in low- and middle-income countries is needed.



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