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Design of a multidimensional diet quality score for a global sustainable healthy diet based on plant food variety, intake of animal products and dietary contribution of ultra-processed foods (SUSDIET)

P. Machado[1], E. Denniss[2], S.A. McNaughton[1], K.M. Livingstone[1] and M. Lawrence[1]
[1]*Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University, Geelong, 3216, Victoria, Australia*
[2]*School of Exercise and Nutrition Sciences, Deakin University, Geelong, 3216, Victoria, Australia*

A range of metrics have been developed and used to measure components of dietary patterns (e.g., adequacy, quality, diversity). However, no existing dietary metric simultaneously captures the three key dimensions of sustainable healthy diets recommended by the Food and Agriculture Organization of the United Nations and the World Health Organization: food processing; dietary diversity; and intake of animal products[(1)]. This study aimed to identify indicators of a global sustainable healthy diet and translate these features into a multidimensional diet quality score (SUSDIET). Informed by our scoping review[(1)], a Delphi method was adopted in the form of a three-round online survey of 13 national and international experts in nutritional epidemiology, environmental health, dietary assessment and/or food and nutrition policy. Surveys were conducted between November 2022 and May 2023. Participants were asked about procedures to establish an operational definition for a global sustainable healthy diet. Based on consensus from global experts, we developed the SUSDIET, a food-based diet quality score incorporating variety of plant foods, intake of animal products, and dietary contribution of ultra-processed foods (the 'dimensions'). Categories and amounts of foods consumed were informed by the Global Diet Quality Score[(2)], EAT Lancet Planetary Health[(3)] and a meta-analysis of the relationship between ultra-processed foods and all-cause mortality[(4)]. The variety of plant foods is measured based on 12 food groups (citrus fruits, deep orange fruits, other fruits, dark green leafy vegetables, cruciferous vegetables, deep orange vegetables, other vegetables, legumes, deep orange tubers, nuts and seeds, whole grains, white roots and tubers), animal intake based on 5 food groups (egg, dairy, poultry, fish and seafood, red meat), and ultra-processed foods as one food group. Three categories of consumed amounts (in grams per day) are defined for variety of plant foods and animal intake, scoring as 0, 0.5 or 1. Ultra-processed food consumption is scored as 0 or 1 using ≤10% or >10% of total dietary intake as cut-offs. The components of each dimension are weighted so the three dimensions equally range from 0-5. SUSDIET overall score ranges from 0-15 (up to 5 points per dimension), with a higher score indicating a more healthy and sustainable diet. SUSDIET will be of immediate use for research aiming to assess the impact of diets on both health and environmental sustainability outcomes among the general adult population. This multidimensional diet quality score can also be used to inform and assess the effectiveness of policy actions that promote sustainable healthy diets, including the monitoring and surveillance of diets globally.

Keywords: diet quality metrics; nutrition surveillance; sustainable healthy diets; sustainability

Ethics Declaration

Yes

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