

Nutritional Quality of Pre-packaged Fruit-Containing Beverages in the Vietnamese Retail Market: Comparison of Four Nutrient Profiling Models and Implications for Nutrition Policy

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Abstract

Modern food regulations are increasingly expanding beyond traditional safety parameters to prioritize nutritional quality and the prevention of diet-related non-communicable diseases (NCDs). As nutrition labeling policies in Vietnam continue to evolve, pre-packaged fruit beverages serve as a highly relevant case study for examining how product composition and nutrient profiling models (NPMs) can inform public health interventions. This study assessed the nutritional quality of these beverages across major retail settings in Hanoi and Ho Chi Minh City. Data extracted from front-of-pack labels, ingredient lists, and nutrition information panels were systematically analyzed using four internationally validated NPMs: Nutri-Score, Health Star Rating, Nutri-Grade, and the Chilean Warning Label. Additionally, the contribution of a standard serving size to the World Health Organization (WHO) recommended limits for free sugar intake was evaluated. The findings indicate that a majority of the sampled fruit beverages contain high sugar levels and are consistently classified as less healthy across all four systems. Notably, a single 240 mL serving of most products exceeds the WHO threshold of deriving less than 5% of total daily energy from free sugars, irrespective of the beverage category or the presence of non-nutritive sweeteners (NNS). However, significant discrepancies emerged among the models, reflecting underlying algorithmic differences in their treatment of intrinsic sugars, NNS, and positive nutritional components such as fruit, vegetable, and legume content. These variations underscore how the selection of a specific NPM can fundamentally alter a product's health classification. Using these empirical findings as a foundation, this presentation will explore a broader policy question: How should nutrient profiling systems be selected and adapted to support effective front-of-pack nutrition labelling?

Keywords: *nutrient profiling model; front-of-pack label; sugar-sweetened beverages; nutritional quality; nutrition policy*

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