Journal of Nutrition and Dietetics 2025
eISSN 3079-4374
Published 28th November 2025 DOI: 10.57039/JND-Conf-Abt-2025-ANFIVA-09

ORIGINAL RESEARCH

Comparison of Traditional Fat Sources and Thermal Processing Methods as Contributing Factors to Kenya's Pandemic of Non-Communicable Diseases

Cheruiyot Sambu[1]
[1]Rift Valley Technical Training Institute; 0000-0002-1327-1702

Corresponding Authors Email: cheruiyotsambu@yahoo.com

Abstract
Kenya is experiencing a deep epidemiological shift, with Non-Communicable Diseases (NCDs) such as cardiovascular diseases (CVDs) and hypertension now responsible for over half the hospital admissions (32). This review disputes the common public health priority on overall dietary fat consumption being the leading cause of NCDs. Rather, it demonstrates that the increasing NCD burden is caused much more strongly by the adoption of modern, high-heat frying methods using industrially processed, volatile oils for cooking instead of traditional, low-heat food preparation methods. Analysis of historical Kenyan trend data (1970–2013) reveals a crucial finding: the national supply of traditional animal fats (such as ghee) had no association with the increase in chronic diseases. In complete contrast, commercial cooking oil supply significantly and positively correlated with the increase in hypertension, diabetes, and circulatory diseases incidence (32). This empirical contradiction shifts the aetiological attention from the fat's intrinsic property towards the chemical changes incorporated during processing and preparation. Mechanistically, high-heat, modern cooking facilitates three synergistic pathways of toxin formation: The existence of Industrially Produced Trans Fatty Acids (iTFAs), highly active cardiovascular poisons formed during oil refinement (13); The thermal break-down and oxidation of poly-unsaturation, which creates free radicals, leading to vascular inflammation when repeatedly heated (11); and The synthesis of Advanced Glycation End Products (AGEs), which are optimized at high-heat environments such as frying, contributing directly towards vascular lesions (40). The evidence confirms that food preparation method and industrial input quality are prime toxicological determinants of NCD risk. Policy intervention is urgently required, namely the obligatory adoption of the WHO-recommended limit (≤2% total fat) for iTFAs. This is a cost-effective step which is likely to avert about 49,000 ischemic heart disease deaths per population lifetime in Kenya (19). Public health approaches need immediately to emphasize promotion of traditional, low-heat cooking for reduction of such process-generated damages.

Keywords: Non-Communicable Diseases, Thermal Processing, Trans Fatty Acids, Kenyan Diet, Cardiovascular Diseases