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The global non-communicable diseases epidemic and association between dietary factors and non-communicable diseases by income levels

Hyunjung Lim¹, Do-Yeon Kim², Ju Hyun Park³ and Hyunjung Lim¹

¹Kyung Hee University, Yongin, Korea, Republic of,

²Kyung Hee University, Seoul, Korea, Republic of. and

³Kyung Hee University, Yong-in, Korea, Republic of

Abstract

Non-communicable diseases (NCDs) share common risk factors as poor dietary intakes, especially among low-income populations worldwide. However, the diet-related health burden by country income levels remains unclear. We assessed the current prevalence of NCDs and the association between selected dietary factors and NCDs by income levels. Data were obtained from the World Health Organization, Food and Agriculture Organization, and World Bank, and 151 countries were included in the analysis weighted by the total population size. Linear regression was used to find the association between metabolic risk factors and health-related behaviors by income levels. The prevalence of raised fasting blood glucose and total cholesterol, overweight, and obesity were lowest in lower and middle income countries, but prevalence of raised blood pressure and NCD deaths under age 70 were highest in lower and middle income countries (p for trend < 0.001). The proportion of carbohydrates and alcohol consumer were highest, and vegetable, milk supply, insufficient activity were lowest in lower and middle income countries. In high income countries, raised fasting blood glucose level were negatively associated with vegetable consumption ($\beta = -0.05$ CI $[-0.08, -0.02]$), and alcohol consumption, fat intake (7.94 [1.82, 14.06]), and sugar and sweetener supply (0.04 [0.01, 0.07]) were associated with overweight. In low income countries, overweight was associated with vegetable oil (0.03 [0.00, 0.05]). In this study, different relationship between diets and NCDs trends were found across country income levels. Appropriate health policies for each group of countries by income are needed to solve the increasing challenges of NCDs.

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Conflict of Interest

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