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Dietary patterns associated with hypertension risk among adults in Thailand: eight-year findings from the Thai Cohort Study

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Hypertension is increasingly prevalent in countries undergoing rapid economic growth, including Thailand[(1)]. Dietary patterns may contribute to hypertension risk. However, few studies have assessed this in Asian populations, and results are mostly cross-sectional[(2)]. We aimed to examine longitudinal associations between dietary patterns and incident hypertension in a cohort of Thai adults.

Data were from Thai Cohort Study participants surveyed in 2005, 2009 and 2013. The sample included adults who were free of hypertension in 2005 and who were followed-up in 2013 (n = 36,293). We used principle component analysis to identify dietary patterns[(3)] and multivariable logistic regression to assess associations between dietary patterns and eight-year hypertension incidence.

Two dietary patterns were identified: Modern and Prudent. The Modern dietary pattern (roasted/smoked food, instant food, canned food, fermented foods, soft drink, deep fried food, and food/desert with coconut milk) was associated with increased incident hypertension (comparing extreme quartiles, odds ratio (OR) for incident hypertension 1·51, 95 % Confidence Interval (CI) 1·31–1·75) in 2013). The Prudent dietary pattern (high intake of soybean products, milk fruit, vegetables, and food supplements) inversely associated with incident hypertension after adjusting for age and sex. However, the association was not statistically significant after further adjusting for other covariates. The association between the Modern dietary pattern and hypertension was attenuated by body mass index.

Table 1. Association between dietary patterns and incidence of hypertension (2005–2013) in Thai adults.

	1st quartile (low)	2nd quartile	3rd quartile	4th quartile (high)	*p- value for trend*
Modern diet pattern	Reference	OR, (95 % CI)	OR, (95 % CI)	OR, (95 % CI)	
Model 1	1·00	1·20 (1·05–1·37)	1·39 (1·21–1·60)	1·58 (1·37–1·82)	<0·001
Model 2	1·00	1·18 (1·03–1·34)	1·34 (1·17–1·54)	1·51 (1·31–1·75)	<0·001
Model 3	1·00	1·13 (0·98–1·29)	1·24 (1·07–1·42)	1·38 (1·19–1·61)	<0·001
Prudent diet pattern	Reference				
Model 1	1·00	0·80 (0·70–0·91)	0·70 (0·61–0·80)	0·84 (0·73–0·96)	0·035
Model 2	1·00	0·85 (0·75–0·97)	0·76 (0·66–0·88)	0·93 (0·81–1·07)	0·670
Model 3	1·00	0·89 (0·78–1·02)	0·80 (0·69–0·93)	1·02 (0·88–1·17)	0·471

OR odds ratio,95 % CI confidence interval. Model 1: adjusted for age and sex. Model 2: Model 1 and education, income, smoking, alcohol consumption, and physical activity. Model 3: Model 2 with body mass index (kg/m^2).

The Modern dietary pattern is positively associated with hypertension risk among Thai adults. The Prudent dietary pattern is inversely associated with hypertension. Promotion of the Prudent diet and reduction of the Modern diet are needed to prevent and control hypertension in the Thai population.

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