

審査の結果の要旨

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This study implies the evaluation of Na and K intakes and their association with dietary patterns among people in a city of Indonesia. The two-day of 24-h urine collections and dietary behaviour during the past month were needed to calculate the habitual Na/K intake and food intake. The results of this study are as follows:

1. Among people in a city of Indonesia, Na intake was excessive compared to the values recommended by the WHO (<5 g/day for salt intake). Mean salt intake among the participants was estimated to be 5.9 g/day (6 g/day in men and 5.9 g/day in women). In the multivariate linear regression analysis of participants' characteristics and urine excretion, the results showed that younger age was significantly associated with higher Na excretion in women, but not in men. For both sexes, higher BMI was significantly associated with higher Na excretion.
2. For the K intake among study participant, K intake was inadequate compared to the values recommended by the WHO (> 90 mmol/d; 3510 mg/d). Mean K intake among the participants was estimated to be 946.2 mg K (977.5 mg K in men and 914.9 mg K in women). In the multivariate linear regression analysis, higher BMI and higher physical activity were associated with higher K excretions in both sexes. However, a significant association with increased K excretion among older participants was shown only in men.
3. The proportion of Na and K intakes who met the WHO recommended value was simulated from distributions of 'usual (habitual) Na and K intakes'. Among 380 participants, the Na intake of 20% met the WHO recommended value. For K intake, no participant met the WHO recommended value.
4. There were four types of dietary patterns among men: M1'Meat, vegetable, oil (snack), desert and fruit'; M2'Staples, oil (soybean), and coffee/tea'; M3'Noodle, oil (staples and root) and salty sea'; M4'Vegetable, non-oil (soybean), and milk'. In women, there were also four types of dietary patterns: W1'Meat, vegetable, and

fruit'; W2 'Staples, oil (root and soybean), desert, and coffee/tea'; W3 'Noodle, oil (processed meat and snack), and salty sea'; W4 'Composite and non-oil (soybean and snack)'.

5. The results of dietary patterns in this study differed from those of some previous studies in Western countries, and it differed slightly from the results of a study in Japan. The authentic food type in each country varies; therefore, the contribution of each food group to the Na/K intake might also differ. In participants of both sexes, the highest Na intake was associated with the higher quantile of M3 'Noodle, oil (staples and root) and salty sea' and W3 'Noodle, oil (processed meat and snack). The M1 'Meat, vegetable, oil (snack), desert and fruit' and W1 'Meat, vegetable, and fruit' patterns contributed to the highest K intake.

As described above, this study evaluated Na and K excretion using 24-h urine collection, which is considered the gold standard, and the associations of dietary patterns with Na and K intakes adults and older adults based on a representative sample in a city of Indonesia. This study would play an important role in elucidating the nutritional epidemiology study of Na/K intake in a city of Indonesia, which was previously not clarified, and it is believed to be essential information in the development of salt reduction program for this city.

よって本論文は博士(保健学)の学位請求論文として合格と認められる。