Walking speed and the prevalence of hypertension, diabetes, and dyslipidemia in Japanese middle-aged and older adults: a cross-sectional study

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Summary

Objectives: Although physical capability markers are generally used to predict morbidity and mortality in older adults, there is increasing evidence that walking speed could be a strong predictor of health outcomes among adults. Little is known regarding the relationship between self-reported walking speed and the risk of CMD**.** This study aimed to determine the association of self-reported walking speed with prevalence CMD such as hypertension, dyslipidemia, diabetes mellitus, and its risk factors in a Japanese population according to age and sex.

Implications: Primary prevention is an essential factor in reducing the burden of CMD. Waking speed could potentially entail the identification of individuals who are at high risk of CMD followed by interventions to reduce their level of risk, with increasing evidence that lifestyle changes and patient education can significantly reduce the risk of this disease. A faster walking pace may have important implications for public health and assessment of individuals WS could be used to guide clinical decision making. Self-reported WS is feasible and can be easily obtained using questionnaire. Subjective WS assessment has the potential to provide information on the risk of CMD in the context when direct measurements of WS are not feasible. Furthermore, self-reported walking speed could be emphasized in public health when increases in walking volume or frequency is less feasible.

Methods: Data were collected from 2,555 participants (1,216 men and 1,339 women) by an internet survey. Presence or absence of CMD and subjective walking speed, as well as characteristics of participants such as sex, age, weight, height, occupation, area of residence, marital status, education, house income,

drinking and smoking status were collected via a self-administered questionnaire. CMD was assessed through asking the question: Have you ever been diagnosed by a doctor for any of the following diseases (hypertension, diabetes, dyslipidemia)? WS was assessed through asking the question: What is your walking speed compared to the people around you (slow, slightly slow, average, slightly fast, fast)?

We merged the groups "slow" and "slightly slow", as well as the groups "fast" and "slightly fast", to create a total of 3 groups with adequate sample size. Logistic regression models were used to calculate the odds ratio (ORs) and 95% confidence interval (95% Cis) for the presence of CMD associated with walking speed, adjusted for several confounders. A trend test over walking speed categories was performed for each model.

Results: A total of 611 (325 men and 286 women) participants reported having CMD. Using the "slow" group as reference, the multivariable-adjusted ORs (95% Cis) for the "average" and "fast" groups were 0.72 (0.54−0.96) and 0.62 (0.46−0.85), respectively, (P for trend = 0.004). For men, they were 0.51 (0.33−0.80) and 0.44 (0.27−0.70), respectively (P for trend = 0.002); and 0.90 (0.61−1.33) and, 0.79 (0.51−1.22), respectively (P for trend = 0.280).

Conclusions:

WS was inversely associated with CMD among middle-aged and older Japanese men, however no statistically significant relationship between WS and CMD was found among Japanese women. CMDs exhibit strong sex differences in disease prevalence, severity and treatment efficiency, with historically less diagnostic and treatment strategies in women than in men.

The results of this study may suggest that self-reported WS may be a useful metric for predicting CMD risk among Japanese men.

More research is needed to determine whether physical capability markers such as self-reported walking speed may be a useful metric for predicting current and future risk of the development of cardiometabolic diseases.