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| 論文審査担当者 | 主査：　上島　通浩<br>副査：　早野　順一郎，鈴木　貞夫 |

Abstract

Inconsistent results have been found in prior studies investigating the accuracy of self-reported waist circumference, and no study has investigated the validity of self-reported waist circumference among Japanese individuals. This study used the diagnostic standard of metabolic syndrome to assess the accuracy of individual's self-reported height, weight, and waist circumference in a Japanese sample.

Study participants included 7,443 Japanese men and women aged 35–79 years. They participated in a cohort study's baseline survey between 2007 and 2011. Participants' height, weight, and waist circumference were measured and their body mass index (BMI) was calculated. Self-reported values were collected through a questionnaire before the examination.

Strong correlations between measured and self-reported values for height, weight, and BMI were detected. The correlation was lowest for waist circumference (men, 0.87; women, 0.73). Men significantly overestimated their waist circumference (mean difference, 0.8 cm), whereas women significantly underestimated theirs (mean difference, 5.1 cm). The sensitivity of self-reported waist circumference for metabolic syndrome was 0.84 for men and 0.68 for women.

Due to systematic and random errors, the accuracy of self-reported waist

circumference was low. Therefore, waist circumference should be measured without

relying on self-reported values, particularly in the case of women.