boundary value for various age group of children as well as for different ethnic group [34] and evidence showed that WHtR index was associated with high metabolic risk [35,36]. The finding of association between WHtR and TBF in our study deserved be further investigated in young children. Our results also revealed that TBF and BMI were associated with trunk skinfolds of children. This was according to the former study which showed that total fat mass is an important determinant factor of intra-abdominal adipose tissue (IAAT) and abdominal skinfold was strongly correlated with IAAT [37]. In addition, skinfold thickness at a varying anatomical sites was used to address gender and ethnic variation related to subcutaneous fat distribution [6]. However, our results showed the weak association between WHR and TBF in boys and between WHR and BMI in girls which implied that WHR was less sensitive index than WC, WHtR and trunk skinfold for this age group. Goran *et al.* [38] demonstrated that, in young children, WHR was not significantly correlated with intra-abdominal adipose tissue (IAAT) while trunk skinfold thickness could explain 62% of variation in IAAT and that WC could explain 92% of the variation in subcutaneous abdominal adipose tissue (SAAT) [37]. Hence, the combination of skinfolds and waist circumference measurement could help to predict central adiposity in the absence of direct measurement by computed tomography or magnetic resonance imaging technique. The limitation of our study was that we did not directly measure the IAAT of children, thereby, this might affect the extensive interpretation of the results of study.

In summary, the assessment of central body fat distribution in children can be done using various anthropometric indices. Our study showed that there was no difference in central body fat indices between young Thai boys and girls. Change in body fat distribution could be affected by the age, BMI and TBF of children. Further study needs to investigate the relationship of various body fat distribution indices to adverse biochemical parameters among young children.

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