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Association between body size of children and duration of dinner-to-bed time

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Statement of the Problem: To promote health and prevent lifestyle-related diseases, the evidence is needed for effective methods that improve health behaviors. In Japan, there is a common belief that individuals should consume dinner at least 2 hours before bedtime to prevent obesity; however, there is little supporting evidence. Therefore, this study aimed to clarify the association between the body size of children and duration of dinner-to-bed time.

Methodology & Theoretical Orientation: A total of 876 children who were born between 2001 and 2006 in three municipalities of the Yamanashi prefecture were enrolled in this study. Anthropometric measurements (i.e., height and weight) and lifestyle data (i.e., wake-up and bedtime, physical activity, parental working status, etc.) were analyzed using logistic regression methods to test the association between body size and duration of dinner-to-bed time. Body mass index (BMI; weight [kg]/ height [m²]) was used to determine body size.

Findings: Data were collected from 388 boys and 399 girls; the response rate was 89.8%. The numbers of boys and girls who consumed their dinner \leq 2 hours bedtime were 28 (7.2%) and 9 (2.3%), respectively, with the number of boys being significantly higher than that of the girls ($p < 0.01$). At 13 years of age, the average BMI of girls who consumed their dinner \leq 2 hours before bedtime was 17.8 kg/m², which was significantly less than that of the girls who consumed their dinner more than 2 hours before bedtime (20.0) ($p < 0.01$). Conversely, this trend was not observed among the boys. However, when the analysis was adjusted for the genetic confounder of maternal BMI, the association observed among the girls disappeared. **Conclusion & Significance:** Among junior high school students, the duration of dinner-to-bed time may not be associated with body size. Yet, the belief that one should not fall asleep immediately after dinner continues to be prevalent in Japan. Further analysis is needed to elucidate the cultural implications of this phenomenon.

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