

Association between meal context and diet quality in Japanese adults: a multilevel analysis

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Dietary intake is greatly influenced by where, with whom, and in what environment people eat. However, few studies have comprehensively examined the effects of meal context on the diet quality of meals at each eating occasion⁽¹⁾. This cross-sectional study aimed to assess the relationship between the diet quality of meals and meal context, characterised by day type (a working day or not), meal type, being with someone while eating, eating location, and screen-based activity.

We used 4-d weighed dietary record data collected in 2021 from 222 Japanese adults (111 males and 111 females) aged 30–76 years. Information on whether the recording day was a working (or school) day and on the meal context at each eating occasion, including meal type (breakfast, lunch, or dinner), eating companion (alone or with someone), eating location (at home or away from home), and screen-based activity (yes or no), was obtained from the dietary records. The diet quality of each meal was evaluated using the Healthy Eating Index 2015 (HEI-2015), in which a higher score indicates a better diet quality (maximum: 100 points). The basic characteristics of the participants (sex, age, height, weight, education level, and current smoking status) were assessed using web questionnaires. Multilevel regression was used to examine the association between the HEI-2015 score for each eating occasion and meal context and individual factors.

Analyses included 1295 meals for males and 1317 meals for females. The average HEI-2015 scores ranged from 40.0 (lunch) to 48.4 (dinner) for males and from 42.4 (lunch) to 47.8 (dinner) for females. In males, compared to breakfast, lunch showed a significantly lower HEI-2015 score ($\beta = 1.81$, 95% confidence interval [CI]: $-3.42, -0.20$), while dinner significantly showed a significantly higher HEI-2015 score ($\beta = 6.77$, 95% CI: $5.34, 8.20$). Eating with someone was associated with a higher HEI-2015 score ($\beta = 2.22$, 95% CI: $0.76, 3.67$). In females, compared to breakfast, dinner had a significantly higher HEI-2015 score ($\beta = 5.21$, 95% CI: $3.72, 6.70$). Eating away from home was associated with a higher HEI-2015 score ($\beta = 2.14$, 95% CI: $0.04, 4.24$). For individual-level factors, age was positively related to the HEI-2015 score and current smoking was inversely associated with the HEI-2015 score in both sexes. In addition, a higher body mass index was associated with a higher HEI-2015 score only in females.

In conclusion, meal type, location, and eating companion were associated with meal quality, and the associated factors differed between males and females in this population. These factors should be considered in nutrition education and behavioural interventions to improve diet quality.

Reference

1. Shams-White MM, Korycinski RW, Dodd KW *et al.* (2021) *Int J Behav Nutr Phys Act* **18**, 67.