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Breakfast-eating habits of school-going adolescents in Kochi, Kerala, India

Breakfast is generally considered as the important meal of the day. It has many benefits for the quality of diet and cognitive and academic performance of adolescents and schoolchildren.[1–3] A systematic review found that young adults skipped breakfast more frequently than other main meals and rates of skipping breakfast ranged from 14% to 88.5%.[4] Many studies have shown that adolescents who do not skip their breakfast are less likely to be overweight or obese as compared to those who skip breakfast.[5–7] However, a systematic review suggested that several longitudinal studies and randomized controlled trials failed to establish the inverse association between regular breakfast consumption and excess body weight.[8,9] In view of the increase in the number of overweight schoolchildren in Kochi, Kerala,[10] we were curious whether there was an association between skipping breakfast and obesity, as it is a potentially modifiable risk factor.

We studied 373 school-going adolescents in the age group of 13–15 years from three government-aided schools to determine the frequency of skipping breakfast and its association with body mass index (BMI) in Kochi. Along with the medical examination at schools, a structured questionnaire was administered to students of standards VIII and IX. The questionnaire included details of sociodemographic profile, questions regarding their usual breakfast habits, reasons for skipping breakfast and anthropometric measurements. The summary statistics are presented as frequencies and percentages. Chi-square test was used to test differences between proportions, and independent sample *t*-test was used to test differences between continuous variables.

Among the participants, 59.7% were men. In the study, 137 (36.7%; 95% CI 31.8%–41.6%) reported going to school without having breakfast in the past 30 days and 38 (10.2%; 95% CI 7.1%–13.3%) of schoolchildren reported that they skipped breakfast for three or more days in a usual week. On the day of the study, 32 (8.6%) had not had breakfast. The reasons for skipping breakfast reported in order of frequency (n=38) were lack of time (20), conscious about body image (10), not hungry in the morning (4), don't like breakfast foods (2) and others (2). Sex (odds ratio [OR] 1.04, 95% CI 0.47–2.29; p=0.547) or residential status (OR 0.88, 95% CI 0.37–2.10; p=0.49) were not associated with skipping breakfast. The mean (SD) BMI of school-going adolescents who reported skipping breakfast more than three times a week and less than that were 18.64 (3.56) and 18.75 (7.40), respectively (mean difference 0.10, SE of difference 1.21 [95% CI –2.29 to 2.49]; p=0.712).

The habit of skipping breakfast among school-going adolescents in our study was less than what has been reported from Andhra Pradesh (50%) and comparable with the results from Delhi (30%) and Hyderabad (34%).[3,7] However, we could not find any association between skipping breakfast and BMI. This is in contrast to many cross-sectional studies, but consistent with the findings of systematic reviews.[8,9] The association between skipping breakfast and obesity status could be due to many confounders such as physical activity and dietary energy intake or due to reverse causality bias. It is also possible that associations between breakfast consumption and BMI may not be consistent across different regions of the world in children with diverse cultural and socioeconomic backgrounds.

Our study highlights that skipping breakfast is a problem among school-going adolescents in Kochi. However, we did not find any association between BMI and skipping breakfast in our study.

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