

Dietary habits of Palestinian adolescents in three major governorates in the West Bank: a cross-sectional survey

Nahed Mikki, Hanan F Abdul-Rahim, Zumin Shi, Gerd Holmboe-Ottesen

Abstract

Background The Palestinian society is undergoing changes in their dietary habits and in the prevalence of obesity and overweight. Palestinian adolescents (aged 10–19 years) make up 24% of the population. Their dietary habits are important, yet understudied. The 2004 survey of health behaviour in school-aged children in the West Bank and Gaza Strip identified missing of breakfast and low intake of milk, fruits, and vegetables as the main problems. We investigated food habits in Palestinian adolescents in three main governorates (administrative divisions) in the West Bank (Ramallah, Nablus, and Hebron) and the relation between food habits and sociodemographic factors (region, sex, urban or rural residence, standard of living index, and parents' education).

Methods We undertook a cross-sectional survey in the three governorates between March 19 and May 8, 2005, in 96 school classes (34 in Ramallah, 31 in Hebron, and 31 in Nablus) that were selected to be representative of the eighth and ninth grade classes (students aged 13–15 years). A list including the number of students per classroom in 2004–05 was provided by the Palestinian Ministry of Education and Higher Education. The classes were divided into nine strata by sex (boys, girls, and coeducational) and school type (public, UN Relief and Works Agency [UNRWA], and private). The sample was selected with the single-stage probability proportional-to-size sampling procedure, from each of the nine strata within each governorate, with the class as the primary sampling unit. All students in the selected classes were invited to participate in the study. Self-administered questionnaires for students and their parents were used. The students' questionnaire contained questions about age, residence, household amenities, meal patterns, and a food frequency list of 42 items without portion sizes. The parents' questionnaire gathered household information, including family size and parents' education. Both questionnaires were piloted and adjusted before the survey. Data analysis was done with Stata (version 10.1) and adjusted for design effect. The sample was weighted according to sample and population size in each governorate (inverse of sampling probability; percentages are weighted and numbers are unweighted), and the analysis was adjusted for possible dependencies due to cluster design. We used χ^2 tests to compare frequencies, and *t* tests or ANOVA to compare means. We did multivariate linear regression analysis to model the association between food scores and sociodemographic factors.

Findings Of the 3271 students invited, 3071 (94%) consented to participate. 2952 students (1364 boys and 1588 girls) aged 13–15 years were included in the analysis, excluding 119 who were older or younger than this age group. Only 765 (26%) students had three meals daily; 382 (26%) boys and 814 (51%) girls had breakfast only once or twice per week or less ($p < 0.0001$). As few as 758 (25%) drank milk daily (462 [33%] boys vs 296 [18%] girls; $p < 0.0001$). Around three-quarters ate vegetables daily (984 [73%] boys vs 1174 [74%] girls; $p = 0.67$). Daily fruit consumption was equally common in boys and girls (841 [59%] vs 915 [55%]; $p = 0.27$). Daily intake of salty snacks was more common in girls than in boys (1022 [62%] vs 716 [50%]; $p = 0.0016$) whereas daily intake of regular soft drinks was more common in boys (575 [40%] vs 464 [28%]; $p = 0.0001$). Daily intake of sweets was more common in girls than in boys (816 [49%] vs 609 [42%]; $p = 0.0634$). Results of multivariate regression analysis showed that residence in Hebron and low standard of living (based on 16 household amenities) were negatively associated with frequency of intake of animal foods, foods commonly eaten in highly industrialised countries, dairy products, fruits and vegetables, and sweets and salty snacks, after adjustment for other sociodemographic factors such as age, sex, parents' education, and family size.

Interpretation Irregular meal patterns and a low intake of fruits, vegetables, and milk were common in Palestinian adolescents, especially in groups with low standard of living and those in Hebron. Effective interventions are needed to establish healthy dietary habits, with an emphasis on vulnerable groups.

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Contributors

NM, HFA-R, and GH-O contributed to the conception, design, analysis, and interpretation of data; drafting of the report; and have given approval of the final version for publication. NM contributed to data collection. ZS contributed to analysis and interpretation of the data, commented on the report, and has given approval of the final version for publication.

Conflicts of interest

We declare that we have no conflicts of interest.

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Section for Preventive Medicine and Epidemiology, Department of General Practice and Community Medicine, University of Oslo, Oslo, Norway (N Mikki MD, Z Shi PhD, Prof G Holmboe-Ottesen PhD); Institute of Community and Public Health, Birzeit University, West Bank, occupied Palestinian territory (N Mikki); and Social and Economic Survey Research Institute and Department of International Affairs, Qatar University, Doha, Qatar (H F Abdul-Rahim PhD)

Correspondence to:
Dr Nahed Mikki, Institute of General Practice and Community Medicine, University of Oslo, PO Box 1130, 0318, Oslo, Norway
nahedmikki@yahoo.com