Proceedings of the Nutrition Society (2022), **81 (OCE5)**, E223 doi:10.1017/S0029665122002567

Summer Conference 2022, 12–15 July 2022, Food and Nutrition: pathways to a sustainable future

Poor adherence to UK dietary guidelines in school-aged children, measured using a children's Eatwell Guide score, is associated with lower socio-economic status

G. Buckland[1], K. Northstone[2], P.M. Emmett[1] and C.M. Taylor[1]
[1]*Centre for Academic Child Health, Bristol Medical School, University of Bristol, Bristol, UK and*
[2]*Department of Population Health Sciences, Bristol Medical School, University of Bristol, Bristol, UK*

Monitoring adherence to UK dietary guidelines during childhood and understanding how adherence varies by sociodemographic background is essential: inadequate nutrition during this period can have a negative impact on growth, development, and long-term health[1,2,3]. The study aims were to i) create a children's Eatwell Guide (C-EWG) score representing alignment to core UK dietary guidelines, ii) assess adherence to the C-EWG score in school-aged children, using data from the Avon Longitudinal Study of Parents and Children (ALSPAC) and, iii) explore associations between sociodemographic factors and the C-EWG score within ALSPAC. Participants were ALSPAC children with diet diary data at 7 (n = 5,373), 10 (n = 4,450) and 13 (n = 2,223) years of age. Dietary intakes were compared to UK dietary recommendations[4] for total and saturated fat, free sugars, salt, fibre, protein, carbohydrates, fruit and vegetables, non-oily and oily fish, and red and processed meat. The C-EWG score was developed to describe the total number of dietary recommendations met by each participant at each age; 1 point was given for each food/nutrient if the recommendation was met and 0 points if not met. All points were summed to obtain a C-EWG score ranging from 0–9 points (none to all recommendations met). The association between sociodemographic characteristics (sex, ethnic group, social class, maternal education, maternal BMI and age at pregnancy, and child's BMI) and C- EWG score (continuous) was assessed using mutually adjusted multivariable linear regression models. The lowest adherence to guidelines at 7 years was for sugar (0.1% meeting recommendations), followed by fibre (7.7%), oily fish (9.5%), saturated fat (9.7%) and fruit and vegetables (15.2%), protein (15.9%), non-oily fish (21.6%), salt (28.6%) and total fat (39.6%). The greatest adherence was for limiting red and processed meat (67.3%) and meeting carbohydrate recommendations (77.3%). Overall, similar results were observed at 10 and 13 years, although at 13 years more children met recommendations for fibre (18.5%), saturated fat (18.7%) and protein (24.7%), but fewer children met recommendations for non-oily fish (16.0%), salt (18.5%) and fruit and vegetables (11.7%), compared to the 7-year-olds. At 7 years 12.1% of the participants failed to meet any of the nine recommendations, 26.9% met only one, 28.2% met two recommendations and 33.5% met ≥3 recommendations. Similar patterns were seen at 10 and 13 years. A lower social class and maternal education level and a higher maternal BMI and a younger maternal age at delivery were associated with lower C-EWG scores (meeting fewer dietary guidelines).A large proportion of the school-aged children in this cohort were not meeting core UK dietary guidelines, particularly children from lower socio-economic backgrounds. These findings underscore the need for additional multifaceted initiatives and policy changes to drastically improve the quality of UK children's diets, particularly targeting families from lower socio-economic groups.

Acknowledgments

The authors are extremely grateful to all the families who took part in this study, the midwives for their help in recruiting them, and the whole ALSPAC team, which includes interviewers, computer and laboratory technicians, clerical workers, research scientists, volunteers, managers, receptionists and nurses. **Funding:** The UK Medical Research Council and Wellcome (Grant ref: 217065/Z/19/Z) and the University of Bristol provide core support for ALSPAC. A comprehensive list of grant funding is available on the ALSPAC website (http://www.bristol.ac.uk/alspac/external/documents/grant-acknowledgements.pdf). This research was specifically funded by Wellcome Trust and MRC (076467/Z/05/Z), The British Heart Foundation (CS/15/6/31468) and a British Heart Foundation Research Fellowship (FS/19/3/34255) supporting GB's research. CMT is supported by an MRC Career Development Award (MR/T010010/1).

References

1. Dalwood P, Marshall S, Burrows TL, *et al.* (2020) *Nutr J* **19**, 118–161.
2. Baird J, Jacob C, Barker M, *et al.* (2017) *Healthcare* **5**, 14–25.
3. Darmon N & Drewnowski A (2008) *Am J Clin Nutr* **87**, 1107–1017.
4. Levy L & Tedstone A (2017) *Healthcare* **5**, 9–16.