

The role of community-supported agriculture in building health and sustainability into UK diets: a mixed methods study

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Abstract

Background

Diets in high-income countries such as the UK are generally both unhealthy and unsustainable, contributing to climate change and an escalating prevalence of non-communicable diseases. Community supported agriculture schemes (CSAs) present a promising sustainable alternative to large-scale intensive monoculture farming. Our study aimed to explore this potential by investigating whether CSA members' diets are more environmentally sustainable, and of higher nutritional quality, than those of community controls.

Methods

This mixed methods study involved 113 participants drawn from four UK CSA schemes and the wider population. Adult male and female CSA participants were recruited through collaboration with four CSA organisations. Controls were recruited by approaching shoppers outside local supermarkets. Participants undertook semi-structured interviews exploring household food culture, food practices, and socioeconomic characteristics, and completed 3-day food diaries. Dietary quality was assessed by comparison with 2019 EAT-Lancet Commission dietary guidelines, and greenhouse gas emissions were used to indicate environmental sustainability. Intra-participant data were integrated by comparing responses through triangulation. Ethics approval was granted by Cardiff University, and participants provided written consent.

Findings

46 participants were recruited to the CSA group and 67 to the control group. CSA members had higher mean annual household income (£35 254 [SD 11 269.04] vs £27 115 [10 135.97]) and were more likely to be vegan (six [13%] vs one [1%]) or vegetarian (three [7%] vs two [3%]) than controls. CSA members' dietary intake was associated with 28% reduction in mean greenhouse gas emissions compared with controls (2995 g [SD 2035] vs 3823 g [2501] of CO₂ equivalent). CSA participants also consumed diets adhering more closely to EAT-Lancet dietary guidelines: CSA members consumed significantly fewer calories from meat (46 vs 121 kcal/day, $p=0.029$) and dairy (205 vs 284 kcal/day, $p=0.065$), and more from vegetables (93 vs 43 kcal/day, $p=0.001$) and legumes (42 vs 19 kcal/day, $p=0.077$), than did controls. Mean caloric intake did not differ between groups (CSA group 1655 kcal/day, control group 1737 kcal/day; $p=0.56$). Ten CSA participants (22%) reported eating more healthily since joining the scheme.

Interpretation

Our results indicate that policies widening participation in CSAs may present a small-scale opportunity to enhance the environmental sustainability and healthfulness of UK diets. Conclusions are limited by the observational study design, and potentially biased characteristics of CSA participants.

Funding

UK Research and Innovation (grant BBSRC Award BB/S014292/1).

Contributors

All authors contributed to the project aims and objectives and the experimental design. ASB and EF undertook data collection and analysis. ASB, EF, and SM wrote the manuscript with substantial input of ideas and edits from AC, SMF, EM, AEM, and RTS. SM drafted the conference Abstract.