

Does the Royal Horticultural Society Campaign for School Gardening increase intake of fruit and vegetables in children? Results from two randomised controlled trials

Meaghan S Christian, Charlotte EL Evans
and Janet E Cade*

Nutritional Epidemiology Group, School of Food Science and Nutrition,
University of Leeds, Leeds, UK

*Corresponding author

Declared competing interests of authors: Janet E Cade is a personal member of the Royal Horticultural Society. Janet E Cade and Charlotte EL Evans received funding from Kids Company to undertake some subsequent analysis of this data set (results not presented in this report).

Published August 2014

DOI: 10.3310/phr02040

Plain English summary

The Royal Horticultural Society Campaign for School Gardening

Public Health Research 2014; Vol. 2: No. 4

DOI: 10.3310/phr02040

NIHR Journals Library www.journalslibrary.nihr.ac.uk

Plain English summary

Children's fruit and vegetable intake in the UK is low. Gardening in schools might help to increase intake. We have undertaken the first trials of a gardening intervention, the Royal Horticultural Society (RHS) Campaign for School Gardening, to assess the impact on children's fruit and vegetable intake.

Primary school children aged 8–11 years from eight London boroughs were included in one of two related trials. Trial 1 included 23 schools, randomised to receive either the RHS-led or a teacher-led gardening intervention. Trial 2 consisted of 31 schools, randomly allocated to either the teacher-led intervention or a comparison group which did not receive the RHS gardening support.

At the start of the trials, we found that eating a family meal together, cutting up fruit and vegetables for children and daily intake of fruit and vegetables by parents were all associated with a higher intake of fruit and vegetables in children.

The main trial results found only very small differences in fruit and vegetable intakes between groups. No change was found in children's knowledge and attitudes. However, we did find a general increase in gardening activity across schools during the time of the study, and so we were not able to show big differences between groups in gardening activity at follow-up. This probably influenced our primary findings. A secondary analysis found that, irrespective of their allocated group, if schools greatly increased the amount of gardening that they did, children ate on average one more portion of fruit and vegetables per day compared with those whose schools did not increase their gardening activity.

Very little evidence was found to support claims that school gardening alone can improve children's fruit and vegetable intake.

Public Health Research

ISSN 2050-4381 (Print)

ISSN 2050-439X (Online)

This journal is a member of and subscribes to the principles of the Committee on Publication Ethics (COPE) (www.publicationethics.org/).

Editorial contact: nihredit@southampton.ac.uk

The full PHR archive is freely available to view online at www.journalslibrary.nihr.ac.uk/phr. Print-on-demand copies can be purchased from the report pages of the NIHR Journals Library website: www.journalslibrary.nihr.ac.uk

Criteria for inclusion in the *Public Health Research* journal

Reports are published in *Public Health Research* (PHR) if (1) they have resulted from work for the PHR programme, and (2) they are of a sufficiently high scientific quality as assessed by the reviewers and editors.

Reviews in *Public Health Research* are termed 'systematic' when the account of the search appraisal and synthesis methods (to minimise biases and random errors) would, in theory, permit the replication of the review by others.

PHR programme

The Public Health Research (PHR) programme, part of the National Institute for Health Research (NIHR), evaluates public health interventions, providing new knowledge on the benefits, costs, acceptability and wider impacts of non-NHS interventions intended to improve the health of the public and reduce inequalities in health. The scope of the programme is multi-disciplinary and broad, covering a range of interventions that improve public health. The Public Health Research programme also complements the NIHR Health Technology Assessment programme which has a growing portfolio evaluating NHS public health interventions.

For more information about the PHR programme please visit the website: <http://www.nets.nihr.ac.uk/programmes/phr>

This report

The research reported in this issue of the journal was funded by the PHR programme as project number 09/3001/19. The contractual start date was in November 2009. The final report began editorial review in May 2013 and was accepted for publication December 2013. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The PHR editors and production house have tried to ensure the accuracy of the authors' report and would like to thank the reviewers for their constructive comments on the final report document. However, they do not accept liability for damages or losses arising from material published in this report.

This report presents independent research funded by the National Institute for Health Research (NIHR). The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, NETSCC, the PHR programme or the Department of Health. If there are verbatim quotations included in this publication the views and opinions expressed by the interviewees are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, NETSCC, the PHR programme or the Department of Health.

© Queen's Printer and Controller of HMSO 2014. This work was produced by Christian *et al.* under the terms of a commissioning contract issued by the Secretary of State for Health. This issue may be freely reproduced for the purposes of private research and study and extracts (or indeed, the full report) may be included in professional journals provided that suitable acknowledgement is made and the reproduction is not associated with any form of advertising. Applications for commercial reproduction should be addressed to: NIHR Journals Library, National Institute for Health Research, Evaluation, Trials and Studies Coordinating Centre, Alpha House, University of Southampton Science Park, Southampton SO16 7NS, UK.

Published by the NIHR Journals Library (www.journalslibrary.nihr.ac.uk), produced by Prepress Projects Ltd, Perth, Scotland (www.prepress-projects.co.uk).

Public Health Research Editor-in-Chief

Professor Catherine Law Professor of Public Health and Epidemiology, Unit Head, Centre for Paediatric Epidemiology and Biostatistics, UCL Institute of Child Health, UK

NIHR Journals Library Editor-in-Chief

Professor Tom Walley Director, NIHR Evaluation, Trials and Studies and Director of the HTA Programme, UK

NIHR Journals Library Editors

Professor Ken Stein Chair of HTA Editorial Board and Professor of Public Health, University of Exeter Medical School, UK

Professor Andree Le May Chair of NIHR Journals Library Editorial Group (EME, HS&DR, PGfAR, PHR journals)

Dr Martin Ashton-Key Consultant in Public Health Medicine/Consultant Advisor, NETSCC, UK

Professor Matthias Beck Chair in Public Sector Management and Subject Leader (Management Group), Queen's University Management School, Queen's University Belfast, UK

Professor Aileen Clarke Professor of Public Health and Health Services Research, Warwick Medical School, University of Warwick, UK

Dr Tessa Crilly Director, Crystal Blue Consulting Ltd, UK

Dr Peter Davidson Director of NETSCC, HTA, UK

Ms Tara Lamont Scientific Advisor, NETSCC, UK

Professor Elaine McColl Director, Newcastle Clinical Trials Unit, Institute of Health and Society, Newcastle University, UK

Professor William McGuire Professor of Child Health, Hull York Medical School, University of York, UK

Professor Geoffrey Meads Professor of Health Sciences Research, Faculty of Education, University of Winchester, UK

Professor Jane Norman Professor of Maternal and Fetal Health, University of Edinburgh, UK

Professor John Powell Consultant Clinical Adviser, National Institute for Health and Care Excellence (NICE), UK

Professor James Raftery Professor of Health Technology Assessment, Wessex Institute, Faculty of Medicine, University of Southampton, UK

Dr Rob Riemsma Reviews Manager, Kleijnen Systematic Reviews Ltd, UK

Professor Helen Roberts Professor of Child Health Research, University College London, UK

Professor Helen Snooks Professor of Health Services Research, Institute of Life Science, College of Medicine, Swansea University, UK

Please visit the website for a list of members of the NIHR Journals Library Board:
www.journalslibrary.nihr.ac.uk/about/editors

Editorial contact: nihredit@southampton.ac.uk