ISRCTN35108237 https://doi.org/10.1186/ISRCTN35108237

Food choice at work study

Submission date
24/06/2013

Recruitment status
No longer recruiting

Registration date
02/07/2013

Overall study status
Completed

Last Edited
11/09/2018

Condition category
Nutritional, Metabolic, Endocrine

[_] Prospectively registered
[X] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol

Background and study aims
The increasing occurrence of heart disease, stroke, cancer and diabetes is of major public health concern worldwide. These diseases can be prevented by a diet that is low in unhealthy saturated fat, sugar and salt. It is accepted that health behaviours are influenced by the surrounding environment in which individuals live and work. Modifying these environments can help accelerate this change. Therefore the workplace is a potentially important setting to promote a healthy diet as individuals spend two thirds of their waking hours at work. Workplace health promotion programmes have become increasingly popular; however, at present we have only limited evidence that these programmes are effective and provide good value for money. Therefore we propose to assess the effectiveness and cost-effectiveness of a workplace dietary intervention that is focused on environmental dietary modification alone or combined with nutrition education to improve employees' diet, nutrition knowledge and health.

Who can participate?
This workplace dietary intervention will be conducted in four large manufacturing workplaces based in Cork in the Republic of Ireland over 20-23 months. This study aims to recruit 448 (112 per workplace) permanent, full-time employees who purchase and consume at least one main meal from their workplace canteens on a daily basis.

What does the study involve?
The four participating workplaces (A, B C and D) will receive different interventions. No intervention will be offered to workplace A. Workplace B will receive nutrition education. Workplace C will receive nutrition education and environmental dietary modification. Workplace D will receive environmental dietary modification. Environmental dietary modification includes changing the menu to restrict levels of fat, saturated fat, sugar and salt, and increase fibre, fruit and vegetables; price discounts for whole fresh fruit; strategic positioning of healthier alternatives; and portion size control. Nutrition education includes group presentations, individual nutrition consultations and detailed nutrition information. A sample of workplace stakeholders (catering managers, human resources managers, occupational health managers and employee representatives) will be interviewed at the start of the study and at follow-up after 7-9 and 20-23 months. The cost-effectiveness of each intervention will also be measured. Data will be collected at the start of the study and after 3-4 months, 7-9 months and 20-23 months to examine changes in employees' diet, health and nutrition education. Data will be collected during employees' working hours in the individual workplaces. Participants will be

asked to complete questionnaires and physical assessments (weight, BMI, waist circumference, blood pressure, urine analysis) and 24-hr dietary recalls will be conducted by trained research assistants.

What are the possible benefits and risks of participating?
The interventions may improve employees' diet and reduce their diet-related disease risks. This study will provide critical evidence of the effectiveness of workplace interventions in the promotion of healthy diet in the manufacturing working population. It may assist in the development of future guidelines to improve diet in the workplace and will inform future researchers. It may influence national and international catering stakeholders and policy makers and motivate the food industry to provide healthier food choices. We don't anticipate any risks for those participating.

Where is the study run from?
This study has been set by the Department of Epidemiology and Public Health at University College Cork, Ireland.

When is the study starting and how long is it expected to run for?
Recruitment for the study started in February 2013 and data collection is ongoing. Participants will be enrolled for a period of 20-23 months. The interventions were implemented over a period of 9 months.

Who is funding the study?
This work is supported by the Health Research Board (HRB) Centre for Health & Diet Research grant, which is funded by the HRB, Ireland and by the Department of Agriculture, Fisheries and Food, Ireland.

Who is the main contact?
Professor Ivan J Perry (principal investigator)
i.perry@ucc.ie
Ms Fiona Geaney (lead investigator)
f.geaney@ucc.ie

Contact information

Type(s)
Scientific

Contact name
Prof Ivan J Perry

Contact details
Department of Epidemiology and Public Health
University College Cork
4th Floor Western Gateway Building
Western Road
Cork
Ireland
-
+353 (0)21 4205506
i.perry@ucc.ie

Type(s)
Scientific

Contact name
Ms Fiona Geaney

ORCID ID
https://orcid.org/0000-0003-3962-3048

Contact details
Department of Epidemiology and Public Health
University College Cork
4th Floor Western Gateway Building
Western Road
Cork
Ireland
-
+353 (0)21 4205506
f.geaney@ucc.ie

Additional identifiers

Protocol serial number
Protocol

Study information

Scientific Title
The effectiveness of complex workplace dietary interventions on dietary behaviours and diet-related disease risk: the food choice at work study: clustered controlled trial protocol

Study objectives
Current hypothesis as of 02/02/2015:
It is hypothesised that the combined workplace dietary intervention that includes environmental dietary modification and nutrition education elements will be more effective than the other interventions when considering positive changes in employees' diet, health and nutrition knowledge outcomes.

Previous hypothesis:
Workplace complex dietary interventions that combine environmental modification and nutrition education are more effective and cost-effective than nutrition education interventions alone and environmental interventions alone when considering positive changes in dietary behaviour, health status and diet-related disease risk.

Ethics approval required
Old ethics approval format

Ethics approval(s)

Ethical approval has been granted by the Clinical Research Ethics Committee of the Cork Teaching Hospitals in the Republic of Ireland (March 2013). Permission has been granted by the managing directors and catering managers in all workplaces.

Study design
Clustered controlled trial

Primary study design
Interventional

Study type(s)
Quality of life

Health condition(s) or problem(s) studied
Improving dietary behaviours to reduce diet-related disease risk

Interventions
Current interventions as of 02/02/2015:
A complex workplace dietary intervention will be conducted over a period of 20-23 months in four large manufacturing workplaces in Cork using a cluster control trial.

Theoretical perspective of the intervention
The complex intervention design has been developed using the Medical Research Council (MRC) framework and the National Institute for Health and Care Excellence (NICE) guidelines and will be reported using the Transparent Reporting of Evaluations with Nonrandomized Designs (TREND) statement. Evidence suggests that food behaviours occur consciously and unconsciously and that in recurring contexts, habits emerge on the deliverance of valued goals. Actions become associated with time, people and places. The work environment and workplace canteens can represent a recurrent context which facilitates the emergence of a repeated behaviour where many of the food choices made are not at a conscious level. Food quantities consumed and even foods eaten are directed by the environment and what is contained in the environment. Behavioural trajectories can be adjusted through two routes:
1. Individuals consider their current behaviour and are motivated to change
2. By adjusting the environment the individual's behaviour will change without conscious thought
This intervention has been designed to trigger conscious deliberations on food choices through the use of individual nutrition counselling and traffic light menu labelling. The repositioning of certain healthy foods in the canteen will help trigger conscious thoughts and the restriction of fat, saturated fat, sugar and salt on menus will facilitate intake changes without conscious thought. Overall the intervention design will draw on a soft paternalism nudge theoretical perspective

Intervention elements
No intervention will be offered in workplace A (control). Workplace B will receive nutrition education. Workplace C will receive nutrition education and dietary environmental modification. Workplace D will receive dietary environmental modification alone.

Nutrition education will consist of three elements:
1. Group presentations will consist of monthly ‘lunch and learn’ group nutrition sessions and will be delivered to all employees.
2. Individual nutrition consultations with a nutritionist or dietician will be conducted with each

participant at baseline, and follow-up sessions held at 3-4 months, 7-9 months and 20-23 months
3. Detailed nutrition information will be offered throughout the duration of the intervention using six key methods:
3.1. Posters and leaflets
3.2. Emails
3.3. Menu labelling (unique healthy eating traffic-light coding system will be applied to the daily menus in employees' canteens and worksite vending machines)
3.4. Quizzes
3.5. Shopping cards
3.6. Personalized measurement cards

Dietary environmental modification
Workplace stakeholders and the research team will discuss and reach a consensus on all environmental dietary modifications in the workplace canteens and vending machines. Dietary environmental modification will consist of the following five elements:
1. Restriction of fat, saturated fat, sugar and salt
2. Increase fibre, fruit and vegetables
3. Price discounts for whole fresh fruit
4. Strategic positioning of healthier alternatives
5. Portion size control

Menu modification in the workplace canteen
For the restriction of fat, saturated fat, sugar and salt all menus will need to be modified. Stock and bouillon should be removed from all recipes and replaced with a recommended low-salt stock. Salt should be eliminated from all cooking processes. Fresh herbs, spices and garlic should be introduced to develop additional flavour. Savoury options that are high in salt, saturated fat and fat should be restricted (for example, sausage rolls, croissants) and replaced with low-fat or low-salt options. High salt products (gravy mixes, stock cubes) and processed meats (bacon, corned beef) will be reduced and replaced where possible with low-salt options (turkey, chicken, fish). Full fat dairy products (that is milk, cream, cheese and butter) will be replaced with low-fat options where possible and reduced in dishes. Cooking methods with oil, such as deep-fat frying, will be limited and will be replaced with methods of boiling, poaching, grilling, steaming and baking where possible.

Previous interventions:
Study involving four large manufacturing workplaces in Cork will be conducted over a period of 13-16 months.
The complex intervention design has been developed using the Medical Research Council (MRC) framework and the National Institute for Health and Care Excellence (NICE) guidelines and will be reported using the Transparent Reporting of Evaluations with Nonrandomized Designs (TREND) statement. It will draw on a soft paternalism 'nudge' theoretical perspective. Nutrition education will include three elements: group presentations, individual nutrition consultations and detailed nutrition information. Dietary environmental modification will consist of five elements: (a) restriction of fat, saturated fat, sugar and salt, (b) increase fibre, fruit and vegetables, (c) price discounts for whole fresh fruit, (d) strategic positioning of healthier alternatives and (e) portion size control. No intervention will be offered in workplace A (control). Workplace B will receive nutrition education. Workplace C will receive nutrition education and dietary environmental modification. Workplace D will receive dietary environmental modification alone.

Intervention Type
Behavioural

Primary outcome(s)
Current primary outcome measures as of 02/02/2015:
Study outcomes will assess the effect of the intervention on dietary behaviours and improvements in diet-related disease risk. Primary outcomes will include changes in employee's dietary intakes of salt and changes in body mass index (BMI).

Previous primary outcome measures:
Study outcomes will assess the effect of the intervention on dietary behaviours and improved diet-related disease risk. Primary outcomes will include changes in dietary behaviour and health status.
1. Analysis of multiple 24-hour dietary recalls, food frequency questionnaires, food sales data and food purchasing patterns will indicate changes in dietary behaviour.
2. Changes in body mass index (BMI), waist circumference, resting blood pressure and urinary electrolytes including sodium and potassium (24-hour urine collections and random urine samples) will highlight improved health status outcomes.

Key secondary outcome(s))
Current secondary outcome measures as of 02/02/2015:
Secondary outcomes will include changes in dietary intakes of total fat and total sugars, the DASH score as an overall measure of diet quality, nutrition knowledge and economic cost outcomes.

Previous secondary outcome measures:
Secondary outcomes will determine food motives and eating behaviours, changes in nutrition knowledge, and economic cost outcomes. A cost-effectiveness economic evaluation will be conducted and absenteeism trends will be recorded during the study period.

Completion date
31/03/2015

Eligibility

Key inclusion criteria
Current inclusion criteria as of 02/02/2015:
Workplace selection:
A list of Cork-based manufacturing companies were obtained from the industrial development authority website and systematically contacted in alphabetical order. A total of 20 potentially suitable companies were contacted based on size and staff profile. The four most suitable workplaces were then purposively selected based on meetings with individual workplace stakeholders (i.e. HR manager, catering manager). Only workplaces that employed >250 employees, operated a daily workplace canteen and were able to commit to the intervention elements for the study duration were eligible.

Employee selection:
Only permanent, full-time employees who purchase and consume at least one main meal from their workplace canteens daily are eligible to participate. Lists of permanent, full-time employees were obtained from the HR manager in each workplace. Employees were randomly selected to participate using random number generation software and then screened for eligibility. The number of employees recruited per workplace reflected the difference in company size. The sample had 80% power at the 5% significance level to detect a decrease in

BMI by 1 kg/m2 and a 2 g average fall in dietary salt intake between the control and intervention groups post-delivery of the interventions.

Previous inclusion criteria:
While the data will be collected at the individual level, the primary unit of analysis will be at the workplace level. Only workplaces and employees that meet the specified selection criteria will be recruited.
Inclusion criteria:

Workplace level:
1. Any manufacturing multi-national workplace that employs more than 250 employees
2. Has a daily workplace canteen for employees can be included in the study
3. The workplace must be located in Cork
4. Represented on the Industrial Development Agency (IDA) website
5. Able to commit to all components of the complex intervention for the duration of the study

Individual level:
1. Any permanent, full-time employee who is contracted to work for the duration of the study period
2. Purchases and consumes at least one meal in the main canteen daily

Participant type(s)
Healthy volunteer

Healthy volunteers allowed
No

Age group
Adult

Sex
All

Key exclusion criteria
Current exclusion criteria as of 02/02/2015:
Workplaces were excluded if they were not a Cork-based manufacturing workplace represented on the Industrial Development Agency (IDA) website employing less than 250 employees; not operating a daily workplace canteen and unable to commit to the intervention elements for the duration of the study

Employees will be excluded if they:
1. Have a part-time contract
2. Do not have contracts to work during the study period or are temporary contractors
3. Do not work in the workplace full-time (for example, work from home 2 days a week)
4. Travel regularly for work (≥ once a month)
5. Do not purchase and consume a main meal from the staff canteen daily
6. Are medically advised not to participate in the study/on long-term sick leave or pregnant
7. Are likely to leave the company during the study (i.e. retirement)
8. Are involved in an ongoing diet programme external or internal to work (e.g. Weight Watchers). However, all participating workplaces will be requested not to implement any dietary or physical activity initiatives during the study period

Previous exclusion criteria:
Workplace level:
1. All non-manufacturing national workplaces that employ less than 250 employees
2. Do not have a workplace canteen
3. Are not represented in the IDA website
4. Not located in Cork
5. Not able to commit to the intervention design for the study period

Individual level:
Employees will be excluded if they are:
1. Part-time employees
2. Employees that do not have contracts to work during the study period
3. Employees that do not work in the workplace full-time (e.g. work from home 2 days a week)
4. Employees that travel regularly for work (more than once a month)
5. Do not purchase and consume a main meal from the staff canteen daily
6. Medically advised not to participate in the study
7. Involved in an on-going diet programme external to work (e.g. weight watchers)

Date of first enrolment
01/02/2013

Date of final enrolment
15/07/2013

Locations

Countries of recruitment
Ireland

Study participating centre
University College Cork
Department of Epidemiology and Public Health
Cork
Ireland
-

Sponsor information

Organisation
University College Cork (Ireland)

ROR
https://ror.org/03265fv13

Funder(s)

Funder type
Government

Funder Name
This work was supported by the HRB Centre for Health & Diet Research grant (HRC2007/13) which is funded by the Health Research Board (Ireland) and by the Department of Agriculture, Fisheries and Food (Ireland)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	pilot study results	01/08/2011		Yes	No
Results article	results	01/11/2013		Yes	No
Results article	results	01/01/2015		Yes	No
Results article	results	01/01/2015		Yes	No
Results article	results	01/08/2015		Yes	No
Results article	results	21/04/2016		Yes	No
Results article	cost-effectiveness results	03/03/2018		Yes	No
Protocol article	protocol	06/11/2013		Yes	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes