A fruity story of attaining and maintaining quality in translational research

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Background

- Translational research applies findings from basic science to enhance human health and well-being
- Long tradition in Bangor University
Attaining and maintaining quality

1. Intervention design, protocol, and materials
   • Choose the area of work
   • Define a problem to be addressed
   • Identify determinants of risk behaviour
   • Systematically search the existing literature
   • No sufficient knowledge: do basic research
   • Apply findings to the problem
   • Create a basic intervention
Food Dudes Programmes: Teaching children to enjoy eating fruit and veg

- Founders: Prof Fergus Lowe and Pauline Horne
- Evidence base: 25 years of high quality research
- Child psychology and behaviour change principles
- School-based primary and nursery programmes
- Produce large and long lasting effects
- Trials and rollouts in Ireland, England, Scotland, Wales, Italy (Sicily, Milan) and the US (Utah, California)
- 700 000 children participated so far
Meet the Food Dudes

CHARLIE

ROCCO

RAZZ

TOM
Meet the Junk Punks

GENERAL JUNK

MISS DE MEENA

GRUESOME TWOSOME
Meet the Diddy Dudes (nursery version)
Meet the Diddy Dudes (nursery version)
Some examples of prizes
Some examples of fruit and veg
Attaining and maintaining quality

1. Intervention design, protocol, and materials

2. Implementation and measurement
   • Effective training of research staff, programme coordinators, school teachers, caterers (protocols)
   • Randomised controlled studies (control group)
   • Direct measurement of target behaviour – not secondary indices (e.g., verbal reports)
   • Accurate, valid, and reliable measurement of target food consumption – also practical
The use of digital photography
Attaining and maintaining quality

1. Intervention design, protocol, and materials
2. Implementation and measurement
3. Evaluating the results and dissemination
   • Correct, appropriate statistics and good visual presentation of data suitable for target audiences
   • Non-specialist reports (for schools, commissioners, caterers, parents, children)
   • Conferences (psychology, public health, prevention)
   • Peer-reviewed journals and practitioner literature
Denbighshire special schools lunchtime FRUIT

- **Intervention schools (N = 147):**
  - Immediate increase (p < .05) and
  - 100% overall increase (p < .0001)

- **Control school (N = 141):** no change (p > .05)
Denbighshire special schools lunchtime FRUIT

**Intervention schools** (N = 147):
- 45% immediate increase (p < .05)
- 100% overall increase (p < .0001)

**Control school** (N = 141):
- No change (p > .05)
Denbighshire special schools lunchtime FRUIT

- Intervention schools (N=147): 45% immediate increase (p<.05) and 100% overall increase (p<.0001)
Denbighshire special schools lunchtime FRUIT

• Intervention schools ($N=147$): 45% immediate increase ($p<.05$) and 100% overall increase ($p<.0001$)

• Control school ($N=141$): no change ($p>.05$)
Denbighshire special schools lunchtime VEG

- Intervention schools ($N=147$): 28% immediate increase ($p=0.07$) and 66% overall increase ($p<0.0001$)
- Control school ($N=141$): no change ($p>0.05$)
Denbighshire special schools lunchtime VEG

MEAN PORTIONS CONSUMED AT LUNCHTIME

Baseline | Post Intervention | FU | Baseline | Post Control | FU
---|---|---|---|---|---
0.5 | 0.64 | | 0.32 | | }

• Intervention schools (N=147): 28% immediate increase (p=.07) and 66% overall increase (p<.0001)

• Control school (N=141): no change (p>.05)
Denbighshire special schools lunchtime VEG

- Intervention schools ($N=147$): 28% immediate increase ($p=.07$) and 66% overall increase ($p<.0001$).
Denbighshire special schools lunchtime VEG

- Intervention schools ($N=147$): 28% immediate increase ($p=.07$) and 66% overall increase ($p<.0001$)

- Control school ($N=141$): no change ($p>.05$)
MEAN PORTIONS CONSUMED AT LUNCHTIME

- Intervention schools ($N=147$): 38% decrease ($p<.0001$)
- Control school ($N=141$): no change ($p>.05$)

Denbighshire special schools lunchtime JUNK
MEAN PORTIONS CONSUMED AT LUNCHTIME

- **Intervention schools** (N=147): 38% decrease (p<.0001)
- **Control school** (N=141): no change (p>.05)

Denbighshire special schools lunchtime JUNK
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- Intervention schools ($N=147$): 38% decrease ($p<.0001$)
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• Control school \((N=141)\): no change \((p>.05)\)
Attaining and maintaining quality

1. Intervention design, protocol, and materials
2. Implementation and measurement
3. Evaluating the results and dissemination
4. Ensuring programme fidelity
   • Online training materials – not very effective (as yet)
   • A contracted delivery company (Ireland)
   • Own delivery company (not unless you want to suffer)
   • Train the trainer model
Attaining and maintaining quality

1. Intervention design, protocol, and materials
2. Implementation and measurement
3. Evaluating the results and dissemination
4. Ensuring programme fidelity
5. Roll-out monitoring and evaluation

- Keeping an eye on things – always a good idea!
- Advantages of collecting independent evidence (e.g., Government commissioned reports in Ireland)
- Continuous: balance between thorough and practical
Attaining and maintaining quality

1. Intervention design, protocol, and materials
2. Implementation and measurement
3. Evaluating the results and dissemination
4. Ensuring programme fidelity
5. Roll-out monitoring and evaluation
6. Ongoing adjustments and innovation
   • E.g., changing the choice architecture of school dining environments to support healthy eating
School dining environment in the UK
Jamie’s school dinners
Rawmarsh school in Rotherham, Yorkshire
Food branding (cueing F&V consumption)
Improved presentation and positioning
Verbal prompts

• “Do you want green beans, carrots or both?”
• “Why not have a portion of fruit with that?”
• “Here, have a small taste, see what you think.”
• “Try Charlie’s Country Stew – it gives extra energy to help with dancing.”
Example of Food Dudes Menu in Denbighshire

**Week 1**

**Monday**
- Turkey Meatballs in Tomato Sauce
- Food Dudes’ Sweetcorn & Peas
- Pasta Shells/ Garlic Bread
- Cheese Biscuits with Apple Wedges

**Special Energy Tuesday**
- Special Energy Savoury Mince
- Powerful Pasta Italiane
- Rocco’s Broccoli & Cauliflower
- Creamed Potatoes
- Razz’s Energy Bursting Berries & Yoghurt

**Wednesday**
- Spanish Chicken
- Special Sweetcorn & Peas
- Boiled Rice
- Chocolate Cake

**Special Energy Thursday**
- Razz’s Roast Pork, Apple Sauce & Gravy
- Charlie’s Carrots & Green Beans
- Roast Potatoes
- Dudes’ Fruity Pirate Ships (Melon Boats)

**Friday**
- Grilled Chicken In a Bap
- Tom’s Veggie Sticks
- Chipped Potatoes
- Fruit Shortbread Fingers

**Week 2**

**Monday**
- Southern Style Chicken Goujons
- Razz’s Ready to Rumble Sweetcorn Relish
- Cajun Wedges
- Chocolate Milky Pudding & Fresh Peaches

**Special Energy Tuesday**
- Charlie’s Creamy Chicken Curry
- Tom’s Tasty Vegetable Curry
- Special Energy Sweetcorn & Peas
- Boiled Rice
- Food Dudes’ Fruity Jelly

**Wednesday**
- Brain Boosting Bolognese
- Rocco’s Broccoli Pasta
- Tomato & Herb Bread
- Apple Pie & Custard

**Special Energy Thursday**
- Razz’s Roast Ham & Pineapple
- Charlie’s Cauliflower Cheese & Carrots
- Roast Potatoes
- Food Dudes’ Banana Surprise (baked bananas & honey)

**Friday**
- Chicken
- Quorn Burger
- Power Mushy Peas
- Chipped Potatoes
- Krispie Cake

Salad, fresh fruit, yoghurt and chilled drinks available daily.
Caffi Morfa Denbighshire staff and students
Attaining and maintaining quality

1. Intervention design, protocol, and materials
2. Implementation and measurement
3. Evaluating the results and dissemination
4. Ensuring programme fidelity
5. Roll-out monitoring and evaluation
6. Ongoing adjustments and innovation
7. Keeping everyone on board
   • Children are easy, adults are difficult
And they all Duded happily ever after…

Pupils get taste for good eating

A RHYL school which caters for children with additional learning needs celebrated being part of a successful eating programme.

Members of the Food Dudes programme, which was launched in January at Ysgol Tir Mòrta in Rhun and Ysgol Plas Brondodfrin in Denbigh, met with children who had taken part in the scheme to toast the rollout of the programme and their experiences. Food Dudes, which is an intervention initiative conducted by the Bangor Food and Activity Research Unit, has been sponsored by Denbighshire County Council who are the first council in Wales to pilot the healthy eating programme.

The programme was modified for use with children with intellectual disabilities, including Autistic Spectrum Disorder. “Considerable” increases in children’s consumption of fruit and vegetables and decreases in consumption of sweet and fatty foods were recorded by the Food Dudes research team and “significant” changes were noted at a three-month follow up.

Sue Parry, deputy head teacher of Ysgol Tir Mòrta, said: “The initiative prompts children to try a variety of fruit and vegetables. “Food Dudes has encouraged our pupils to think about the choices they are making in their diet and we are seeing the impact this is having at home. It is rewarding to see obvious changes in our pupils’ behaviour, one example is that our school cafe has had to significantly increase its order for fruit due to demand from the children.”

Food Dudes use rewards based tactics and role-modelling to get across its message and to engage with the children. Their stories are based on four heroic cartoon characters, Sara, Tim, Charlie and Rocco, who battle with General Jock.

Amy Roberts-Mitchell, postgraduate researcher from Bangor University, added: “Our results show that Food Dudes Programmes can significantly improve nutrition, reduce health inequalities, and give the children in Special Schools and their families much needed help to establish and sustain healthy lifestyles.”
Caterer training videos – and much more

Caterer
Sandbach Primary Academy

Caterer
Milking Bank Primary School

Caterer
St Mary’s Cof E Primary School

Head Teacher
Sandbach Primary Academy
A take home message?

Attaining and maintaining quality in translational research is a cycle of continuous development, improvement, and change.

Thank you for listening.

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