



Increasing the implementation of vegetable and fruit breaks by Australian primary schools: a non-RCT in a population of schools



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Aim



To describe a multi-strategy intervention designed to increase the implementation of vegetable and fruit breaks by a population of primary schools.

Background



- Multi-component school based V&F programmes can significantly increase child V&F intake/day¹⁻⁹.
- Internationally V&F programs (distribution/ subsidized) implemented in schools.... but adoption <30%¹⁰.
- Australian schools encouraged to adopt V&F breaks (Crunch&Sip®) but adoption <40%¹⁰.
- Need for rigorous implementation research¹¹.
- No published vegetable and fruit implementation studies¹².

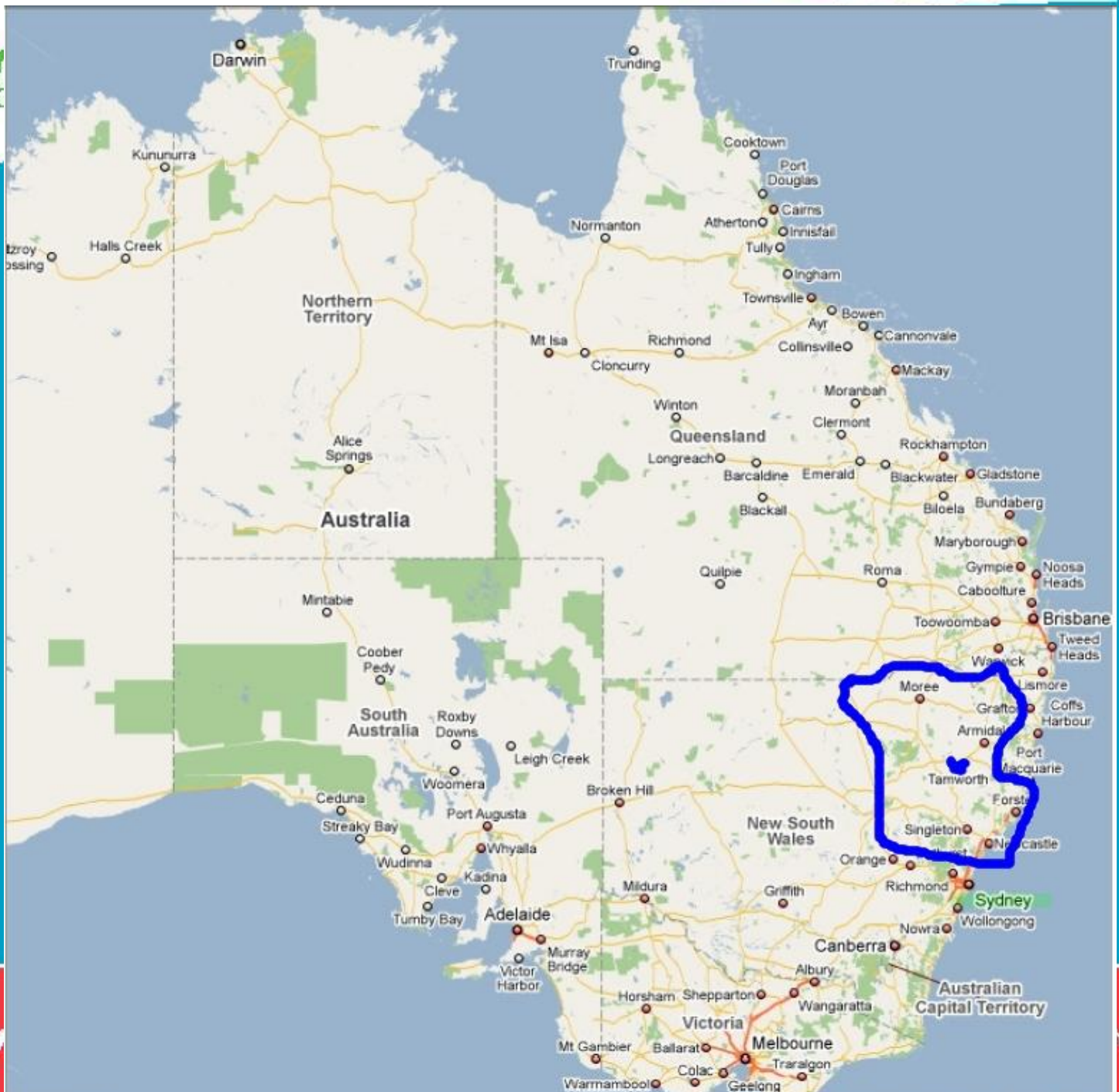
1. Knai, Pomerleau et al. 2006; 2. Blanchette, L. and J. Brug, 2005; 3. Burchett, H. 2003; 4. Ciliska, D. et al., 2000; 5. de Sa, J. and K. Lock, 2007; 6. Delgado-Noguera, M. et al. 2011; 7. French, S.A. and G. Stables, 2003; 8. Howerton, M.W. et al. 2007; 9. Van Cauwenbergh, E. et al. 2010; 10. Nathan et al 2011; Kerner et al 2005; 12 Rabin et al 2010

Methods



- **Design:**
 - quasi-experimental, prospective cohort design.
- **Setting:**
 - HNE region of NSW.
- **Sample:**
 - Intervention– all schools within the HNE region (n=422)
 - Comparison– random sample from rest of state (n=406)
- **Eligibility**
 - Special purpose schools excluded such as hospitals, juvenile justice etc.
- **Recruitment:**
 - Invitation letter sent to all Principals
 - Two weeks later Principals were telephoned – confirmed school eligibility, sought consent to participate, scheduled telephone interview

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Vegetable and Fruit Program



- *Crunch&Sip®* available to both intervention and comparison schools
- Schools were encouraged to implement;
 - A time in class for children to eat a piece of vegetable or fruit that they had brought from home, and to drink water.
 - A school vegetable, fruit and water break policy;
 - Teaching and learning materials
 - Advertise and promote the breaks to teachers, students and parents through newsletter articles, letters to parents and classroom posters.

Implementation Intervention



• Theoretical framework for behaviour change¹



• Six strategies



1. Leadership support



2. Staff training

3. Resources

4. Incentives

5. Follow-up support

6. Monitoring and feedback

1. Moulding, N.T., C.A. Silagy, and D.P. Weller 1999.

Leadership Support



- Obtained at various levels
 - Regional Directors
 - School Education Directors
 - School Principals
- “School Champions” in each school

Process data

- *69% of Principals reported their SED discussed V&F Break with them*
- *96% of schools had a school champion*

Staff Training



- Teachers were invited to attend a 1-day 'healthy eating' workshop
- 1-day teacher relief funding (AU\$250)

Process data

- *69.6% of schools had a teacher attend the training*

Resources and Incentives



Schools received

- Manual and CD
- Water bottle for every student and teacher.

Process data

- *67% of schools reported receiving the resource package*

Follow-up Support



- 3 weeks post workshop CATI with School Champions.
- Aim to help triage schools for f/up support.
 - Level 1 schools– early adopters
 - Level 2 schools– early/ late majority
 - Level 3 schools– laggards
- Tailored support provided to those level 2/3 schools

Process data

- *96% of schools completed the follow-up call*
- *100% of level 2/3 schools received tailored calls*

Monitoring and Feedback



- Regional Director

- Received Term report on all schools progress



- School Education Director

- Received Term report on their cluster of schools progress



- School Principal and School Champion

- Received a tailored report on their school and how they could improve

Process data

- *31% of school champions recalled seeing their tailored school report*

Comparison Group



- Program promoted to schools by Healthy Kids Ass'n
- If a school chose to register for the program
 - Teaching resource materials were forwarded to the school
 - Able to receive e-mail and telephone information-based support
- If a school chose to implement the program
 - Additional resource material were made available
 - Able to obtain access to ongoing email and telephone support.



Results

	Prevalence of vegetable and fruit breaks ^a				Odds Ratio (OR)		p-value
	Intervention (n=388)		Comparison (n=258)		Intervention	Comparison	
	n (%)	n (%)	n (%)	n (%)	(95 % CI)		
	Baseline	Follow-up	Baseline	Follow-up			
All Schools	195 (50.3)	318 (82.0)	116 (45.4)	157 (60.9)	2.36 (1.60-3.49)	1	<0.001*
School Type							
· Government	152 (51.0)	252 (84.6)	89 (45.0)	125 (62.8)	2.52 (1.60-3.97)	1	<0.001*
· Non-Government	43 (47.8)	66 (73.3)	27 (45.8)	32 (54.2)	2.14 (0.98-4.68)	1	0.057
School size							
· Small	76 (42.2)	138 (76.7)	34 (40.5)	51 (60.0)	2.0 (1.08-3.72)	1	0.029*
· Medium	94 (58.8)	140 (87.5)	57 (45.6)	74 (64.4)	2.68 (1.44-4.97)	1	0.002*
· Large	23 (52.3)	36 (81.8)	18 (39.1)	26 (56.5)	2.03 (0.69-6.00)	1	0.200
ARIA							
· Rural	55 (36.0)	118 (77.1)	29 (50.9)	42 (72.4)	2.55 (1.24-5.26)	1	0.011*
· Urban	140 (59.6)	200 (85.1)	87 (43.5)	115 (57.5)	2.13 (1.30-3.48)	1	0.003*
SEIFA							
· Low	136 (47.2)	234 (81.3)	70 (47.0)	97 (65.1)	2.30 (1.43-3.71)	1	<0.001*
· High	59 (59.0)	84 (84.0)	46 (42.2)	60 (55.1)	2.18 (1.08-4.40)	1	0.031*

Conclusion and Next Steps



- Limitations of study



- Study design



- Impact of Good for Kids



- Novel information to facilitate implementation of health promotion programs.

- Determine if intervention impact is sustained.



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a non-randomised controlled trial. BMC Public Health;12:651

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