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Can the Garden to Table programme improve children's fruit and vegetable consumption?

A thesis in partial fulfilment of the requirements of the
degree of

Master of Science
In
Nutrition and Dietetics

at Massey University, Albany
New Zealand

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2013

Abstract

Background

New Zealand children are not meeting fruit and vegetable recommendations. Garden to Table, an in-school cooking and gardening programme, offers a potential solution.

Objective

To evaluate the effects of Garden to Table participation for at least one school year on children's fruit and vegetable consumption and variety of intake, their knowledge of and attitudes towards fruits, vegetables, cooking and gardening, and their cooking- and gardening-related self-efficacy and behaviours.

Design

An epidemiological study comparing the amount and variety of fruit & vegetables consumed, and knowledge, attitudes and self-efficacy related to fruit & vegetables of two groups of children: 158 students aged nine to 11 who had been in the Garden to Table programme for at least one school year, and 128 students from control schools, matched for year level. Quantitative evaluation used adapted versions of the Ministry of Health's 2002 National Children's Nutrition Survey food frequency questionnaire and the children's questionnaire used in the Stephanie Alexander Kitchen Garden evaluation. $P < 0.05$ was used to indicate statistical significance.

Outcomes

No significant difference was found in the proportion of children meeting recommended overall fruit & vegetable intake between Garden to Table (38.8%) and control groups (39.8%), $p = 0.29$. However, when individual reported fruit & vegetable consumption was summed, fruit & vegetable intakes were significantly greater in the control group ($P = 0.02$ for both), but ranged from zero to 16 and from zero to 39.2 serves per day, respectively, indicating unreliable reporting. Significant gender and year-level interactions were present for vegetable & fruit variety, respectively, with boys in the Garden to Table group consuming 2.93 (0.18, 5.69) more vegetables per week than boys in the control group ($p = 0.02$), and year 5 control participants consuming 3.43 (1.59, 5.27) more fruit per week than year 5 Garden to Table participants ($p < 0.01$). The Garden to Table group had significantly greater scores for attitudes and knowledge. There were no significant differences in cooking- and gardening-related self-efficacy or behaviour scores.

Conclusion

The Garden to Table programme improved children's knowledge and attitudes about cooking, gardening, fruit & vegetables. However, further longitudinal research, using reliable assessment methods, within constraints of school settings is needed to evaluate consumption of fruit & vegetables.

Acknowledgements

This thesis was fulfilled with the guidance and support of several people to whom I am indebted with gratitude.

I would like to thank the 280 children who participated in the research, as well as their parents and schools who consented to the research. In addition, I would like to acknowledge the assistance of the school principals in consulting with the research, and the class teachers for their help during data collection.

Secondly, I would like to thank my supervisors, Dr Pamela von Hurst and Associate Professor Welma Stonehouse for their wise words, endless support and gentle encouragement throughout the last year and a half, which has been invaluable. I'd also like to acknowledge a special thanks to Allie Towgood, who was the most professional and helpful research assistant I could have hoped for, and without whom I could never have completed this research.

Also of note are the primary school teachers who patiently assisted me in planning and developing my research, Kerry Lee, John Lee, Natalie Larson, Maya McCarrer and Phil Margetts, I am so thankful for all your support. In addition, the cultural advice I received from Dr Lily George, Ben Taufua, PC Tong and Cherie Wong was fantastically helpful, which I am also thankful for.

I am also appreciative of the post-graduate funding support provided by Massey University's Institute of Food Nutrition and Human Health, without which this research could not have been completed.

To my incredible classmates who have provided more moral support, advice, praise and inspiration that I could have ever wanted. I consider myself especially lucky to have you all in my life, and thank you for being my rock, my family away from home.

And finally, to my Mum, for the unwavering support, for proof-reading countless drafts and providing on-going suggestions and encouragement. I am extremely thankful for all that you've done for me.

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Abbreviations

BMI	Body Mass Index
BP	Blood Pressure
COPD	Chronic Obstructive Pulmonary Disease
CVD	Cardiovascular Disease
FFQ	Food frequency questionnaire
F&V	Fruit and vegetables
GP	General practitioner
GtT	Garden to Table
HDL	High-Density Lipoprotein
IHD	Ischaemic Heart Disease
MoH	Ministry of Health
NCD	Non-communicable diseases
NCNS	National Children's Nutrition Survey
NSCYPPADBZ	National Survey of Children and Young People's Physical Activity and Dietary Behaviours in New Zealand
NZ	New Zealand
NZEO	New Zealand European or Other
NZHS	New Zealand Health Survey
OECD	Organisation for Economic Co-operation and Development
PA	Physical Activity
SAKG	Stephanie Alexander Kitchen Garden
SES	Socio-economic Status
SSBs	Sugar-sweetened Beverages
T2DM	Type 2 Diabetes Mellitus
UN	United Nations
WHO	World Health Organisation
YLL	Years of Life Lost