

The Tooty Fruity Vegie Project – #4586 a collaboration between education, health and the community

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Jillian Adams is the Public Health Nutritionist for Northern Rivers Area Health Service in Northern NSW. The Tooty Fruity Vegie project began in 1999 and has recently won both the Minister's Award and Excellence in Partnerships Award in the NSW Baxter Quality Health Awards.

Inadequate intakes of fruits and vegetables are consistently and strongly associated with increased incidences of many cancers, cardiovascular and coronary disease (Joshipura et al 1999, Ness 1997, Block et al 1992). Despite this, most Australian adults' diets fall well below recommended daily intakes (Stickney 1994, CSIRO 1993). Whereas intake levels appear adequate among pre-schoolers, they become more inadequate as children get older (ABS 1995, AHC 1996). Because of this, as well as evidence that dietary habits formed early in life tend to continue into adulthood (Auld et al 1988, Gutlin 1990), we developed a fruit and vegetable promoting intervention for primary schools. We used existing knowledge, the successes, failures and lessons learned, from similar Australian and overseas projects (Gortmaker et al 1999, Reynolds et al 2000, Baranowski et al 2000, Story et al 2000, Stafford 1997, Contento et al 1995, NHF 1997), as well as broader health promotion and behaviour change theories (St Leger 1993, WHO Ottawa Charter 1986). The result was the Tooty Fruity Vegie (TFV) project, a two-year, multi-strategy program, which ran in ten primary schools during 1999 and 2000.

The program has been a collaboration between the Department of Education and Training, Parents and Citizens committees, the horticultural industry, and the fruit and vegetable industry and has targeted people with particular needs – rural communities, disadvantaged communities and Aboriginal and Torres Strait Islander communities.

All primary schools (Government and non-Government) in the Northern Rivers Area of NSW were invited to participate in the project and schools with high populations of Aboriginal and Torres

Strait Islanders were particularly encouraged. Ten schools expressed an interest and another six schools agreed to act as "controls" for the purpose of evaluating changes. The control schools were similar in terms of demographic characteristics, school size and socio-economic background. A total of 1589 children were exposed to the intervention during the two-year intervention period.

The small number of staff working on the program (1.1 FTE) meant that the TFV project relied heavily on support from within the Area Health Service and the community. This was possible because stakeholders, local health and education staff were involved in the project from the planning stage. By the time of implementation, those involved had a sense of ownership of the project. In each of the ten schools, a School Project Management Team (SPMT) was formed to select the strategies and oversee the implementation of the program. SPMTs had representation from Parents and Citizens Committees, teachers, principals, Aboriginal Education Assistants and students. The National Nutrition Education in Schools project provided teacher training. The fruit and vegetable industry, local governments and horticultural industry supported the program by providing free resources for schools, in particular for school canteens and gardens. The Health Promotion Unit at Northern Rivers Area Health Service (NRAHS) developed the strategies and trained and resourced volunteers from the local community (mostly parents) to deliver parts of the program. Generally the following groups of people delivered the main strategies, though there was some variation between schools depending on who was available.

Table 1. Key TFV Strategies, Settings and Executors.

Setting	Strategy	Key Executor		
		Volunteers	Teachers	TFV Team
Classroom	Fruit and vegetable cooking classes (Kids in the Kitchen) in the classrooms, with a teacher present	■		
	Teaching about fruit and veg across key learning areas		■	
	Age specific fruit and vegetable competitions		■	
	Fruit and vegetable breaks in class for students who have brought this food from home		■	
School canteens	Providing more fruit and vegetables items regularly	■		
	Promotional fruit and vegetable tastings aimed at children	■		
	Utilising marketing material from the fruit and vegetable industry to trial different marketing methods (including free novelties such as tattoos and stickers with fruit and vegetable sales)	■		
	Networking with schools making good profits from healthy canteen sales	■		
School community	Visiting local fruit and vegetable growers and markets	■	■	
	Promotional fruit and vegetable tastings aimed at parents	■		■
	School Project Management Team (SPMT)	■	■	■
	Reviewing food policies and practices to promote fruits and vegetables (e.g. using healthier foods for rewards and fundraising)			■
	Appraisal and feedback about fruits and vegetables in lunchboxes		■	
Home and community	Establishing vegetable gardens and fruit orchards within the school and assisting in teaching children how to grow fruit and vegetables in gardens and pots	■	■	
	Fruit and vegetable promoting flyers and school newsletter articles, calendars and fridge magnets			■
	Liaising with local shops, sporting groups and after-school programs to promote use of fruit and vegetables			■

Strategies for Sustainability

The TFV project included many strategies to maximise its sustainability, such as changing the environment so that fruits and vegetables are grown at school, changing the canteen menu so that more

attractive and cheaper fruits and vegetables are available to purchase at school, embedding teaching about fruit and vegetables in the school curriculum and changing school policies to make healthy food the easy choice.

Evaluation

A comprehensive evaluation of the TFV project was funded by the NRAHS Health Promotion Unit and the Cancer Council of NSW and approved by the NRAHS Human Research Ethics Committee and by the NSW Department of Education and Training's Strategic Information and Reporting Section.

The following parameters were measured:

Process evaluation – explored rates of uptake and quality of implementation of the individual TFV strategies within each intervention school and the children's, parents' and teachers' reactions to both the individual TFV strategies and the overall project.

Impact evaluation – explored the TFV project's impact on relevant interim outcomes, such as children's, parents' and teachers' knowledge, attitudes and behaviors regarding fruits and vegetables.

Outcome evaluation – explored the TFV project's impact on children's fruit and vegetable consumption levels.

Project Implementation and Outcomes

In order to evaluate the quality of the project's implementation and its success in relation to its broad range of impact indicators, we drafted, pilot-tested, revised and administered surveys to all the children, parents, teachers, principals, volunteers and other health professionals involved in or exposed to the TFV project and in "control" schools. In addition, a "Participation Index" was completed by each intervention SPMT to indicate the reach, frequency and quality of implementation for each key TFV strategy. The following is an excerpt from the process and impact evaluation report (Miller et al, 2001).

Response to this process and impact evaluation was generally good, with completed surveys received from 613 parents (59%), 392 children (65%), 50 teachers (81%), 36 volunteers (34%), all ten intervention school principals and all three other health professionals invited. These results showed that the TFV project was well implemented and reached the vast majority of all target groups and was overwhelmingly positively received by them. The TFV project improved all children's fruit and vegetable related knowledge, attitudes and preparation

skills and their access to fruits and vegetables at home and in school settings and may have improved their fruit and vegetable eating intentions and actions. Attitudes and home access to fruits and vegetables appear to have improved more for girls and younger children than for boys and older children. Similarly, younger children reported more impact on their fruit and vegetable eating intentions and actions. Although not affecting teachers' knowledge of daily-recommended fruit and vegetable intakes, the TFV project may have promoted more positive attitudes towards school-based fruit and vegetable promotions and improved teachers' perceived skills and support for doing them.

Preliminary analyses suggest that fruit consumption increased by 18% among children exposed to the intervention while that of the control group dropped by 14% over the two-year period.

The outcome evaluation was conducted by measuring fruit and vegetable intakes recorded in 24-hour food records at the beginning and end of the project for all students in both intervention and control schools. Preliminary analyses suggest that fruit consumption increased by 18% among children exposed to the intervention while that of the control group dropped by 14% over the two-year period. For vegetable consumption the figures were an increase of 14% for the former and a decrease of 4% for the latter over the same period. Further analyses of these outcomes are underway.

All ten intervention schools have continued various TFV activities (now two years after the supported intervention period) and some have even introduced more of their own new fruit and vegetable promoting strategies.

Key Lessons Learned From the TFV Project

- Adequate training/support for TFV activities was essential in establishing the project in schools.
- Support from principals and the whole-of-school approach were important in enhancing the project's implementation.

- Having SPMTs was important for coordinating and sustaining TFV activities. Broad representation on these teams was important in maximizing the range of TFV activities and minimizing the burden on individual members.
- Providing teaching resources addressing curriculum outcome statements was important in addressing the issue of competition with other topics for limited curriculum space.
- Good communication and support (e.g. cooking equipment, teaching resources) from the TFV staff was important in achieving the overwhelmingly positive attitudes towards the project among teachers and principals.
- The fun and hands-on nature of many TFV activities, such as the Kids in the Kitchen cooking classes, food tasting and gardening were important in maximising children's, parents', volunteers' and teachers' enjoyment of and satisfaction with the project.
- Committed parent volunteers were an essential part of implementing many key TFV strategies.
- Fruit and vegetable tasting, cooking lessons, gardening, videos and visits to fruit and vegetable growers and markets, were consistently considered the most successful activities for improving children's fruit and vegetable knowledge, attitudes and skills and for meeting teachers' curriculum goals. Their fun and practical nature and parental involvement were viewed as key factors in the success of these activities.

■ The children's cooking manual, the Classroom Activities Teacher Resources folder and the gardening kit were the most useful classroom resources for the teachers.

The Tooty Fruity Vegie project has received funding from the National Child Nutrition Project and is being conducted in another 18 schools in 2002 and 2003. This will enable the strategies and evaluation process to be further refined. The TFV Team is interested in providing assistance to other areas that would like to start similar programs in their schools.

Acknowledgments

The Tooty Fruity Vegie project was funded by The Health Promotion Unit, Northern Rivers Area Health Service with additional support from the Cancer Council NSW. The authors would like to thank Denise Hughes for her tireless efforts in organising the collection, processing and data entry of the many surveys; and the schools, teachers, students and their parents for participating in the program. We also would like to thank the many volunteers who helped with conducting the data collections; and the numerous Nutrition and Dietetic students who helped with delivering the Tooty Fruity Vegie program in schools.

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