Tooty Fruity Vegie – a recipe for successful volunteer participation in primary schools

Article for Health Promotion Journal of Australia

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Word count: 1879 (introduction to conclusion)

Key words: children, fruit and vegetables, volunteers, schools

Acknowledgments
We would like to thank the Cancer Council NSW for assistance with funding, Denise Hughes for data collection and handling, health service staff, school principals, teachers, students and their parents for participating in the program, especially the volunteers without whom this program would never have got off the ground.
ISSUE ADDRESSED

This study describes volunteer participation in a multi-strategic fruit and vegetable promotion in primary schools in Northern NSW.

METHODS

Parents at 10 intervention and six control schools, and principals from the intervention schools, were surveyed after a two–year intervention. We investigated the strategies implemented by parent volunteers, why they volunteered and the conditions they needed to be effective and satisfied.

RESULTS

A quarter to a fifth of intervention school parents volunteered in some capacity, assisting with implementing a wide range of strategies in all schools. They felt their work was highly satisfying and useful. Principals reflected these views and felt that volunteers responded more positively to this project than other school activities.

CONCLUSIONS

Volunteers can be significant contributors to whole-of-school nutrition programs if they are adequately resourced, trained and supported and are offered fun, hands-on strategies to implement.

SO WHAT?

The participation of parent volunteers is one effective way of ensuring school nutrition programs are low budget, able to reach a large number of students and sustainable.
Introduction

Most Australian adults’ diets fall well below recommended daily intakes of fruits and vegetables\(^1\-^3\), placing them at increased risk of many cancers, cardiovascular and coronary disease\(^4\-^6\). Whereas intake levels appear adequate among pre-schoolers, they become more inadequate as children get older, with 35% of Australian children aged 8 – 11 years eating no fruit and 20% eating no vegetables in the 24 hours prior to their survey\(^3\,^7\). Evidence also shows that dietary habits formed early in life tend to continue into adulthood\(^8\,^9\). A few studies have shown school-based interventions can effectively increase children’s fruit and vegetable consumption but these interventions require a high number of intervention contact hours from teachers or health promoters\(^10\). Evidence from overseas also shows that parental involvement enhances the effectiveness of primary school interventions\(^10\,^11\) though the authors could find no similar studies in Australia. Attracting and sustaining the effectiveness of parent volunteers in school interventions can be an important way of increasing the reach of a program. Therefore, we developed a fruit and vegetable promoting intervention for primary schools based on an empowerment based learning process\(^12\), a health promoting schools framework\(^13\) and using lessons learned from similar projects\(^10\,^14\-^19\), including using parent volunteers to implement many of the strategies. In this study we investigated the range of the strategies they implemented, why they volunteered and the conditions they needed to be effective and satisfied.

As reported elsewhere, the TFV project significantly improved children’s fruit and vegetable knowledge, attitudes, access and preparation skills; parents’ knowledge and involvement in, and enjoyment of, fruit and vegetable promoting activities in schools; and teachers’ attitudes towards and perceived skills and support for doing school-based fruit and vegetable promotions\(^20\).
Methods.

The Tooty Fruity Vegie (TFV) project was a two-year, multi-strategic program, which ran in 10 primary schools during 1999 and 2000 across North Eastern NSW. All Catholic, government and independent primary and central schools were invited to take part in the project and 10 of these volunteered after initial interviews with the TFV team.

Project strategies were designed, from available evidence, to create a supportive environment by developing, and helping schools to implement fruit and vegetable promoting educational resources and activities for children, their parents, teachers, schools, school canteens and the broader community. These strategies included promotion of fruit and vegetables in the school canteen, children’s cooking classes, fruit and vegetable gardens and incorporating fruit and vegetable activities in school curricula.

Range of Strategies Implemented

Table 1 outlines the key TFV strategies, the settings where they were conducted and who executed them at the individual school level.

TABLE 1 HERE

Analyses

Analyses were largely descriptive and confined to frequency distributions, with some calculations and comparisons of means and cross-tabulations between intervention and control parents.

To maximise schools’ ownership, and the project’s sustainability beyond the intervention period, each school formed a School Project Management Team (SPMT) consisting of representatives from the whole school community, to oversee the project’s implementation in their school. Parent volunteers as well as teachers, were trained and resourced to implement many of the school-based strategies.

Prior to implementation of the project in the 10 implementation schools, another six schools were recruited as demographically and geographically matched controls. At the end of the two-year intervention period, all 16 schools were asked to participate in a range of surveys to assess how well the project was
implemented and received. All parents, volunteers and principals within consenting schools were asked to complete surveys.

As no relevant existing instruments were available, we drafted, pilot-tested and revised survey instruments for each target group (copies available from authors). Each survey assessed a range of process and impact indicators. This paper is limited to the questions relating to volunteer participation in the project. Other process and impact indicators are reported elsewhere\textsuperscript{20}.

\textit{Volunteer-related Survey contents}

- **Intervention and Control (I&C) parents** completed self-administered surveys assessing their involvement in and enjoyment of three fruit and vegetable promoting school activities.

- **Intervention volunteer parents** (self-identified in parent survey or identified by schools) completed similar surveys about their level of participation in, and enjoyment of, fruit and vegetable promoting activities at school and why they worked as volunteers.

- **Intervention Principals** completed a structured telephone survey assessing their:
  - perceptions of volunteers’ reaction to the TFV project;
  - perceptions of the level and acceptability of the TFV project’s demands on volunteers and the school community generally;
  - intention to continue with TFV strategies and perceived support necessary.

\textbf{Ethics}

The TFV project was approved by the Northern Rivers Area Health Service Human Research Ethics Committee and by the NSW Department of Education and Training’s Strategic Information and Reporting Section.
Results

Response Rate and Sample Characteristics

Nine of the ten intervention and three of the six control schools participated in this evaluation. Completed surveys were received from 613 parents (59%), 34 intervention school volunteers (34%) and 10 intervention school principals (100%). Parental response rates were similar across intervention and control groups and showed good representation across all student years, although the volunteers tended to have younger children.

Recruitment of Volunteers

A quarter to a fifth of intervention school parents reported volunteering in TFV activities at their children’s schools. While some volunteers were recruited via school newsletters, a third received personal invitations (see Table 2). The main motivators among TFV volunteers were enjoyment of the activities, participation in their children’s class and working with children generally. Few participated out of a sense of duty.

Perceived Enablers of / Barriers to Implementing the TFV Project

Volunteer and principal surveys suggested parent participation could be increased further by:

- improving publicity and scheduling of TFV events;
- avoiding clashing with other activities and coinciding with other parent events at the schools;
- improving training and support;
- providing child care.
Parent involvement in fruit and vegetable strategies

Not surprisingly, significantly more intervention than control school parents reported being directly involved in a fruit and vegetable activity at their children’s school during 1999 and 2000, including cooking classes (22% vs. 3% involved, p<0.00001), canteen promotions (21% vs. 8% involved, p<0.001) and special event promotions (26% vs. 14% involved, p<0.005). Consequently, intervention school parents reported being involved in more fruit and vegetable activities at school than control parents during the two years (mean 0.69 vs. 0.25 activities, p<0.0001).

Volunteers’ Enjoyment of Individual TFV Strategies

As shown in Table 3, most volunteers who responded enjoyed, or really loved, doing each strategy. Over half the hours contributed went into the cooking classes, with virtually all surveyed volunteers involved. This was the most enjoyed activity and, apart from excursions, the one most volunteers were willing to help with again. Almost all volunteers found the TFV activities rewarding, felt their efforts were appreciated by the school community and felt they had made an impact on children’s eating habits (Table 4). However, some felt equipment or organisation could be improved for some activities.

TABLES 3 AND 4 HERE

Perceived Sustainability of the TFV Project

As discussed earlier (see Table 4), volunteers reported high levels of enjoyment of TFV activities, with the majority involved in each activity reporting a willingness to do it again. Furthermore, over half the volunteers reported having spread the fruit and vegetable message to groups outside the primary school, including sporting and social groups and preschools.

Most principals felt their schools were well equipped to continue the project without outside support due to their positive experiences of volunteers and the funding given for cooking equipment. Although some expressed concerns about fitting TFV activities into full curricula and maintaining parental involvement, all planned to continue in some way. Similarly, all SPMTs intended to continue various TFV strategies, including those implemented by volunteers.
The conditions needed for volunteers to feel their work was effective and satisfying are summarized in
Table 5.

**INSERT TABLE 5 HERE**

**Discussion**

Our results indicate that volunteers implemented a wide range of strategies for the TFV project, finding
their work highly satisfying and useful. A quarter to a fifth of all parents reported planning or
implementing TFV strategies, including cooking classes, canteen and special event promotions and
gardening. The vast majority enjoyed or really loved each activity and was willing to do them again.
Almost all found the activities rewarding; felt their efforts were appreciated by the school, TFV staff and
their children; and felt they had made an impact on children’s eating habits. However, a small proportion
felt training, equipment or organisation could be improved for some activities. However, some potential
limitations and strengths need to be considered when interpreting these results.

One potential limitation was the less than optimal response rates on some surveys: only 34% of volunteers,
and 59% of parents returned completed surveys. Although almost a quarter of intervention school parents
reported having been involved in TFV activities, only half this number completed a volunteer survey.
However, timing was a major factor in the poor response to the volunteers’ survey, which, due to
unforeseen delays, could not be distributed until early December. However, we have confidence in the
results, as they are very consistent with those from the principal surveys, from spontaneous comments in
parents’ surveys and from TFV project officers’ experiences in the schools.

Prior psychometric testing of the survey instruments was not possible within the project’s budget and
timeframe. However, standard best practice survey design techniques were employed in developing them
all had face validity and were pilot-tested for comprehensibility and obvious gaps. In addition, the
similarity of results across the surveys suggests they had convergent validity, giving us confidence in our
results.
Another strength of the study is that the intervention schools have had on-going commitment from parents to volunteer for the implementation of these strategies throughout the two-year implementation period and for at least two years beyond this.

Confidence in our results is enhanced by their concordance with those from similar overseas studies: enjoyment of more “hands-on” experiences, co-scheduling activities to coincide with other school events\(^{16, 17, 21-24}\).

**Conclusions**

Table 5 summarises the conditions we identified for volunteers to work effectively and to feel satisfied. These findings confirm many of the factors cited as contributing to maximizing the retention of volunteers in a recent review of the effective use of volunteers in Australia: rewards and recognition, effective volunteer management, adequate training and resources and job satisfaction\(^{25}\). The TFV project increased parental interest and participation in promoting fruits and vegetables in a way that has been sustained, with all 10 schools still implementing various TFV strategies four years after they started and has already seen the fruit and vegetable promoting message spread beyond the schools involved.

The participation of parents as volunteers in school nutrition programs is an effective way of ensuring school nutrition programs are low budget, able to reach a large number of students and are sustainable.
References


Table 1. **Key Tooty Fruity Vegie Strategies, Settings and Executors.**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Tooty Fruity Vegie Strategy</th>
<th>Key Executor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom</td>
<td>Fruit and vegetable cooking classes (Kids in the Kitchen) in the classrooms, with a teacher present</td>
<td><img src="Key_Volunteers.png" alt="Key: Volunteers" /> <img src="Key_Teachers.png" alt="Key: Teachers" /> <img src="Key_TFV_Team.png" alt="Key: TFV Team" /></td>
</tr>
<tr>
<td></td>
<td>Teaching about fruit and veg across key learning areas</td>
<td><img src="Key_Volunteers.png" alt="Key: Volunteers" /> <img src="Key_Teachers.png" alt="Key: Teachers" /></td>
</tr>
<tr>
<td></td>
<td>Age specific fruit and vegetable competitions</td>
<td><img src="Key_Teachers.png" alt="Key: Teachers" /> <img src="Key_TFV_Team.png" alt="Key: TFV Team" /></td>
</tr>
<tr>
<td>School canteens</td>
<td>Providing more fruit and vegetable items regularly</td>
<td><img src="Key_Volunteers.png" alt="Key: Volunteers" /></td>
</tr>
<tr>
<td></td>
<td>Trialling novel fruit and vegetable items</td>
<td><img src="Key_Volunteers.png" alt="Key: Volunteers" /></td>
</tr>
<tr>
<td></td>
<td>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).</td>
<td><img src="Key_Teachers.png" alt="Key: Teachers" /></td>
</tr>
<tr>
<td></td>
<td>Networking with schools making good profits from healthy canteen sales</td>
<td><img src="Key_Teachers.png" alt="Key: Teachers" /></td>
</tr>
<tr>
<td>School community</td>
<td>Visiting local vegetable growers and markets</td>
<td><img src="Key_Volunteers.png" alt="Key: Volunteers" /> <img src="Key_Teachers.png" alt="Key: Teachers" /></td>
</tr>
<tr>
<td></td>
<td>Promotional fruit and vegetable tastings aimed at parents</td>
<td><img src="Key_Volunteers.png" alt="Key: Volunteers" /> <img src="Key_Teachers.png" alt="Key: Teachers" /></td>
</tr>
<tr>
<td></td>
<td>School Project Management Team meetings (SPMT)</td>
<td><img src="Key_Volunteers.png" alt="Key: Volunteers" /> <img src="Key_Teachers.png" alt="Key: Teachers" /> <img src="Key_TFV_Team.png" alt="Key: TFV Team" /></td>
</tr>
<tr>
<td></td>
<td>Reviewing food policies and practices to promote fruits and vegetables (eg using healthier foods for rewards and fundraising)</td>
<td><img src="Key_Teachers.png" alt="Key: Teachers" /></td>
</tr>
<tr>
<td></td>
<td>Appraisal and feedback about fruits and vegetables in lunchboxes</td>
<td><img src="Key_Volunteers.png" alt="Key: Volunteers" /></td>
</tr>
<tr>
<td></td>
<td>Establishing vegetable gardens and fruit orchards within the school and assisting in teaching children how to grow fruits and vegetables in gardens and pots</td>
<td><img src="Key_Teachers.png" alt="Key: Teachers" /> <img src="Key_TFV_Team.png" alt="Key: TFV Team" /></td>
</tr>
<tr>
<td></td>
<td>Using healthier food and drink items for fund raising</td>
<td><img src="Key_Teachers.png" alt="Key: Teachers" /></td>
</tr>
<tr>
<td>Home and community</td>
<td>Fruit and vegetable promoting flyers and school newsletter articles, calendars and fridge magnets</td>
<td><img src="Key_Volunteers.png" alt="Key: Volunteers" /></td>
</tr>
<tr>
<td></td>
<td>Liaising with local shops, sporting groups, etc to promote using fruits and vegetables</td>
<td><img src="Key_Teachers.png" alt="Key: Teachers" /> <img src="Key_TFV_Team.png" alt="Key: TFV Team" /></td>
</tr>
</tbody>
</table>
Table 2: Volunteers’ reasons for becoming involved in Tooty Fruity Vegie activities

<table>
<thead>
<tr>
<th>Reason for becoming involved in Tooty Fruity Vegie activities</th>
<th>% of volunteers saying (n = 34)</th>
<th>A fair bit / a lot</th>
<th>Not at all / a little</th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoy working with the children</td>
<td>99</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>I like to know what my children are learning at school</td>
<td>80</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>I enjoy cooking or gardening</td>
<td>70</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>I am interested in good nutrition</td>
<td>74</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>I always help with school activities when I can.</td>
<td>62</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>I thought I might learn something</td>
<td>62</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>I enjoy organising things</td>
<td>53</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>I read about it in a school newsletter</td>
<td>39</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>I felt I should do it</td>
<td>33</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td>The principal/ teacher asked me personally to help</td>
<td>21</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td>I thought I might meet some new people</td>
<td>12</td>
<td>79</td>
<td></td>
</tr>
<tr>
<td>I had plenty of spare time and wanted to do something useful</td>
<td>12</td>
<td>83</td>
<td></td>
</tr>
<tr>
<td>A friend was involved and asked me to come too</td>
<td>12</td>
<td>82</td>
<td></td>
</tr>
</tbody>
</table>

*NB: row percentages may not add to 100% due to missing values*
Table 3: Volunteers’ levels of involvement in and enjoyment of Tooty Fruity Vegie school activities

<table>
<thead>
<tr>
<th>Tooty Fruity Vegie Activity</th>
<th>% involved (n = 34)</th>
<th>% enjoyed / loved it*</th>
<th>% would do it again*</th>
<th>Total hours spent</th>
<th>Mean hours per volunteer*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooking classes for children</td>
<td>91</td>
<td>87</td>
<td>87</td>
<td>429</td>
<td>13.8</td>
</tr>
<tr>
<td>TFV special event promotions (eg: sport days)</td>
<td>87</td>
<td>66</td>
<td>86</td>
<td>56</td>
<td>2.4</td>
</tr>
<tr>
<td>Parent cooking and tasting sessions</td>
<td>47</td>
<td>69</td>
<td>73</td>
<td>32</td>
<td>2.0</td>
</tr>
<tr>
<td>TFV school canteen promotions</td>
<td>44</td>
<td>73</td>
<td>80</td>
<td>81</td>
<td>5.4</td>
</tr>
<tr>
<td>TFV School Management Committee</td>
<td>26</td>
<td>67</td>
<td>75</td>
<td>74</td>
<td>8.0</td>
</tr>
<tr>
<td>Helping with school fruit and veg (F &amp; V) gardens</td>
<td>21</td>
<td>57</td>
<td>75</td>
<td>45</td>
<td>5.6</td>
</tr>
<tr>
<td>Trips to F &amp; V growers, markets, supermarkets</td>
<td>12</td>
<td>75</td>
<td>100</td>
<td>10</td>
<td>2.5</td>
</tr>
</tbody>
</table>

* Denominators were the number of volunteers involved in each activity

TOTAL 727
Table 4: Volunteers’ opinions about their involvement in Tooty Fruity Vegie activities in schools

<table>
<thead>
<tr>
<th>Statement</th>
<th>% volunteers saying (n = 34)</th>
<th>Agree / strongly agree</th>
<th>Disagree / strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My children were pleased I was involved</td>
<td>94</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>I felt appreciated by the TFV staff</td>
<td>94</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>The children enjoyed the activities</td>
<td>91</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>The children seemed to learn from the activities</td>
<td>91</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>I felt appreciated by the principal/teachers</td>
<td>85</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>I feel I’ve helped make a difference to the children’s eating habits</td>
<td>74</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>There wasn’t always enough training/equipment to run activities properly</td>
<td>29</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>Some activities seemed poorly prepared and chaotic</td>
<td>15</td>
<td>79</td>
<td></td>
</tr>
<tr>
<td>It was a stressful thing to be involved in</td>
<td>9</td>
<td>79</td>
<td></td>
</tr>
<tr>
<td>It’s put me off getting involved in this sort of thing again</td>
<td>3</td>
<td>88</td>
<td></td>
</tr>
</tbody>
</table>
Table 5: The conditions needed for volunteers to feel their work was effective and satisfying.

- Support from principals and a whole-of-school approach.
- Adequate planning, training and support.
- Good communication with schools and support from TFV team.
- Adequate resources (eg: cooking equipment, recipe books, aprons).
- Having School Project Management Teams to coordinate and sustain project activities. Broad representation is important for maximising the range of activities and minimising the burden on individual members.
- Co-scheduling project activities with existing school events, offering transport and childcare and improving networking among volunteers across schools.
- Fun, hands-on activities (such as cooking classes, food tastings and gardening) for maximising children’s and, hence, volunteers’ participation and enjoyment.