



Curtin University

**CRUNCH&SIP FORMATIVE RESEARCH:
PARENTS' SURVEY RESULTS**

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EXECUTIVE SUMMARY

In October/November 2015, Cancer Council Western Australia commissioned formative research to (i) investigate whether a focus on vegetable consumption for the Crunch&Sip program would be supported by various stakeholders and (ii) inform the development of strategies to support this change in focus. This report provides the results of an online survey that was completed by 300 Western Australian parents with primary school aged children in Grades 1 and 6. The survey examined general attitudes to Crunch&Sip and views on the potential to increase vegetable consumption during Crunch&Sip.

Generally, parents were aware of the positive benefits of increased vegetable consumption and supportive of efforts to increase vegetable consumption among children. The majority of parents reported a high level of satisfaction with their child's current fruit and vegetable consumption. However, most reported that their children consumed 1 to 2 servings of fruit and 2 to 3 servings of vegetables per day, which is below the recommended average. In addition, less than a third of the respondents' children were regularly given vegetables to take to school for recess or lunch.

Overall, attitudes to the provision of fruit and vegetable breaks during class were very positive among the entire sample. Over half of the respondents reported that their children currently had fruit and vegetable breaks in the classroom and were provided with vegetables for Crunch&Sip at least once a week. In addition, there was a high level of support for moving to a vegetable focus for Crunch&Sip. The primary reasons provided for this support were because it would help teach their children to eat healthily and generally encourage greater vegetable intake. Most parents did not foresee any difficulties with providing vegetables for Crunch&Sip, although some raised concerns about children refusing to eat vegetables and noted that it would be difficult to continually provide variety for their children. It was suggested that it would be easier to provide vegetables for Crunch&Sip if the school was involved with providing the food or information about interesting vegetable options.

In conclusion, the survey results indicate that moving to a vegetable focus for Crunch&Sip is likely to be generally supported by parents. From the perspective of the parents involved in this study, there do not appear to be major structural or attitudinal barriers that need to be addressed.

INTRODUCTION

The Crunch&Sip program is a nutrition education program that involves classrooms having an allocated break during the day for children to eat fruit or vegetables. The program was introduced into primary schools in Western Australia in May 2005. It has been supported by the Department of Health, Cancer Council WA, and the National Partnership Agreement on Preventive Health. The overarching aims of Crunch&Sip are to increase awareness of the importance of fruit and vegetable consumption every day, encourage parents to provide fruit and vegetables to their children, and develop strategies to increase consumption among those children who do not regularly have access to fruit and vegetables.

In 2015, formative research was undertaken to (i) investigate whether a focus on vegetable consumption for Crunch&Sip would be supported by various stakeholders and (ii) inform the development of strategies to convert to a vegetable focus. A further objective was to examine current levels of community support for the program. This report provides the results of an online survey that examined parents' general attitudes to Crunch&Sip and their views on vegetable consumption during Crunch&Sip.

SURVEY METHOD

Respondents were recruited for the survey via an online panel (The ORU) and the evaluation survey was delivered in an online format. Data collection occurred between 29th October and 17th November 2015 inclusive. Quotas were stipulated to recruit 300 Western Australian parents (20-40% male) with primary school aged children in Grades 1 to 6. Table 1 shows the demographic characteristics of the respondents surveyed. In total, 301 respondents meeting the eligibility criteria completed the survey.

Table 1. Demographic characteristics of the sample

	N (%)
Gender	
<i>Male</i>	97 (32.2)
<i>Female</i>	204 (67.8)
Age	
<i>Under 25 years</i>	3 (1.0)
<i>25-34 years</i>	74 (24.6)
<i>35-44 years</i>	154 (51.5)
<i>45-54 years</i>	63 (21.0)
<i>55 years and older</i>	7 (2.3)
Country of birth	
<i>Australia</i>	194 (64.5)
<i>United Kingdom</i>	23 (7.6)
<i>India</i>	15 (5.0)
<i>Malaysia</i>	13 (4.3)
<i>South Africa</i>	7 (2.3)
<i>Singapore</i>	5 (1.7)
<i>Other</i>	44 (14.6)

RESULTS

SERVINGS OF FRUIT AND VEGETABLES

Respondents were asked to report the number of servings of fruit and vegetables they had eaten per day over the past month. The results are provided below in Table 2. The majority of parents reported eating between 1 to 2 servings of fruit and 2 to 3 servings of vegetables. Respondents were also asked to provide this information for their children. In line with the results from the parents, it was reported that the majority of children ate between 1 to 2 servings of fruit and 2 to 3 servings of vegetables per day. For both parents and children, the average vegetable intake falls below the recommended daily intake of 5 servings.

Table 2. Average servings of fruit and vegetables per day

Daily Servings	Fruit		Vegetable	
	Parents n (%)	Children n (%)	Parents n (%)	Children n (%)
0	17 (5.6)	7 (1.7)	3 (1.0)	6 (1.5)
0.5	5 (1.7)	6 (1.5)	1 (0.3)	6 (1.5)
1	122 (40.5)	149 (37.5)	55 (18.3)	98 (24.4)
1.5	2 (0.7)	3 (0.7)	-	-
2	71 (23.6)	140 (34.9)	71 (23.6)	118 (29.4)
2.5	2 (0.7)	4 (1.0)	3 (1.0)	5 (1.2)
3	29 (9.6)	47 (11.7)	74 (24.6)	73 (18.2)
3.5	-	-	2 (0.7)	-
4	8 (2.7)	11 (2.7)	27 (9.0)	34 (8.5)
4.5	-	-	-	1 (0.2)
5	9 (3.0)	10 (2.5)	17 (5.6)	21 (5.2)
6-10	8 (2.7)	3 (0.7)	11 (3.7)	9 (2.2)
11-15	2 (0.7)	5 (1.2)	5 (1.7)	4 (1.0)
16+	20 (6.6)	16 (4.0)	26 (8.6)	24 (6.0)

Respondents were also asked to provide an indication of their satisfaction with their child's intake of fruit and vegetables. A high proportion of parents were satisfied/very satisfied with their child's intake of fruit (total satisfied 70%; 24% very satisfied) and vegetables (62%; 15% very satisfied) (Table 3). There were no differences in satisfaction with fruit consumption by gender or age of the parents. However, respondents younger than 35 years were less likely to report dissatisfaction with vegetable consumption (12% vs. 29%, $p=.037$), and more likely to be neither satisfied nor dissatisfied with their child's vegetable consumption (23% vs. 10%, $p=.037$) compared to those over 45 years.

Table 3. Satisfaction with children's fruit and vegetable consumption

	Dissatisfied/very dissatisfied n (%)	Neither n (%)	Satisfied/ very satisfied n (%)
Satisfied with children's fruit consumption	51 (16.9)	40 (13.3)	210 (69.8)
Satisfied with children's vegetable consumption	68 (22.6) ⁺	48 (15.9) [^]	185 (61.5)

⁺Significantly lower among those under 35 years

[^]Significantly higher among those under 35 years

ATTITUDES TO VEGETABLES AND CHILDREN'S VEGETABLE INTAKE

Respondents were asked a number of questions to assess their current attitude to their children's vegetable consumption. All items were rated on a 5-point scale from strongly disagree to strongly agree. Table 4 presents the percentage of respondents who agreed, disagreed, or neither agreed nor disagreed with the statements. The majority of respondents agreed with the following statements: *My children eat enough vegetables to keep them healthy* (54%; 14% strongly agree), *I wish my children would eat more vegetables* (50%; 19% strongly agree), *Vegetables make good snacks* (72%; 18% strongly agree), and *I would like my children's school to encourage kids to eat more vegetables* (60%; 20% strongly agree). The majority of respondents disagreed with the following statements: *Vegetables go rotten in our house before they are eaten* (59%; 20% strongly disagree), *Vegetables take too long to prepare* (70%; 23% strongly disagree), *My family doesn't like vegetables* (69%; 26% strongly disagree), *Vegetables*

are not filling enough (60%; 15% strongly disagree), *I don't know how to choose fresh vegetables* (79%; 32% strongly disagree), and *Vegetables are too messy* (84%; 31% strongly disagree). There were no significant differences in responses by gender or age.

Table 4. Attitudes to children's vegetable intake

	Disagree/strongly disagree n (%)	Neither n (%)	Agree/strongly agree n (%)
My children eat enough vegetables to keep them healthy	58 (19.3)	82 (27.2)	161 (53.5)
It is hard to get my children to eat enough vegetables	116 (38.5)	64 (21.3)	121 (40.2)
I wish my children would eat more vegetables	51 (16.9)	71 (23.6)	179 (59.5)
Vegetables are too expensive	119 (39.5)	87 (28.9)	95 (31.6)
Vegetables go rotten in our house before they are eaten	177 (58.8)	62 (20.6)	62 (20.6)
Vegetables take too long to prepare	210 (69.8)	55 (18.3)	36 (12.0)
My family doesn't like vegetables	207 (68.8)	51 (16.9)	43 (14.3)
Vegetables are not filling enough	180 (59.8)	71 (23.6)	50 (16.6)
I don't know how to choose fresh vegetables	239 (79.4)	38 (12.6)	24 (8.0)
Vegetables are too messy	252 (83.7)	30 (10.0)	19 (6.3)
Vegetables make good snacks	32 (10.6)	52 (17.3)	217 (72.1)
I would like to know more about how to prepare vegetables to make them appealing to my family	78 (25.9)	91 (30.2)	132 (43.9)
I would like my children's school to encourage kids to eat more vegetables	28 (9.3)	92 (30.6)	181 (60.1)

In addition, respondents were asked to report their views on the effect that eating plenty of vegetables everyday may have on children. All items were answered on a 5-point scale from very unlikely to very likely. Table 5 presents the results. The large majority of respondents thought that it was likely/very likely that if children eat plenty of vegetables every day they would have lots of energy (88%; 36% very likely), live a long and healthy life (90%; 40% very likely), feel good about themselves (83%; 30% very likely), have a healthy appearance (93%, 40% very likely), have a good digestive system (92%; 47% very likely), and do well at school

(81%; 30% very likely). There were no significant differences in responses between the age and gender subgroups.

Table 5. Perceived impact of increased vegetable consumption

	Unlikely/very unlikely n (%)	Neither n (%)	Likely/very likely n (%)
Have lots of energy	8 (2.7)	29 (9.6)	264 (87.7)
Live a long and healthy life	6 (2.0)	24 (8.0)	271 (90.0)
Feel good about themselves	11 (3.7)	41 (13.6)	249 (82.7)
Have a healthy appearance	4 (1.3)	16 (5.3)	281 (93.4)
Have a good digestive system	6 (2.0)	17 (5.6)	278 (92.4)
Do well at school	11 (3.7)	46 (15.3)	244 (81.1)

FAVOURITE VEGETABLES

Respondents were asked to provide a list of their children's favourite vegetables. The results are presented in Table 6. The most commonly cited vegetables were carrot (62%), potato (33%), and broccoli (31%). Other vegetables that were mentioned frequently were peas/snow peas (20%), corn (19%), cucumber (18%), tomato (16%), and greens such as lettuce, spinach, or rocket (14%).

Table 6. Favourite vegetables

	n (%)
Carrot	187 (62.3)
Potato	100 (33.3)
Broccoli	93 (31.0)
Peas/snow peas	59 (19.7)
Corn	58 (19.3)
Cucumber	54 (18.0)
Tomato	49 (16.3)
Greens (e.g. lettuce, spinach, rocket)	43 (14.3)
Capsicum	28 (9.3)
Cauliflower	26 (8.7)
Celery	21 (7.0)
Pumpkin	20 (6.7)
Beans	19 (6.3)
Cabbage	17 (5.7)
Mushrooms	11 (3.7)
Sweet potato	11 (3.7)

TYPICAL RECESS & LUNCH FOOD

For each child in the age range, respondents were asked to provide information on the foods usually given for recess and lunch on school days. The results were categorised and are provided in Table 7. Overall, the majority of respondents reported that their children would have fruit (77%) and/or a sandwich (66%) as a part of their typical recess and lunch. A much lower proportion reported that vegetables (30%) were commonly included in their children's recess or lunch food.

Table 7. Typical food provided for recess and lunch

	n (%)
Fruit	295 (77.0)
Sandwich	254 (66.3)
Vegetables	113 (29.5)
Crackers/biscuits	98 (25.3)
Muesli bar	84 (21.9)
Yoghurt	46 (12.0)
Cheese	43 (11.2)
Cake/slice	41 (10.7)
Chips	31 (8.1)
LCM/K-time	12 (3.1)
Canteen food (e.g. chicken nuggets, cheesie, sausage roll)	5 (1.3)
Don't know	7 (1.8)

CRUNCH&SIP

Respondents were asked whether their children who attend primary school between Grade 1 and 6 have fruit and vegetable breaks (i.e. Crunch&Sip) during their lesson time. Overall, 57% of the children were reported to have Crunch&Sip, with an average frequency of 4.3 days per week. Table 8 shows reported proportion of children in each year group who have Crunch&Sip and the average number of days per week they have the breaks. There is a continual decrease in the proportion of children in each grade who have Crunch&Sip, with the highest proportion in Grade 1 and the lowest proportion in Grade 6, and a substantial drop-off between Grades 5 and 6. The only statistically significant difference was between Grade 1 and Grade 6 ($p=.029$).

When examining the average number of days per week they have Crunch&Sip, the trend was in the opposite direction, with Grade 1 exhibiting the lowest frequency and Grade 6 the highest. However, the differences were not statistically significant. The results suggest that although the older grades are less likely to have Crunch&Sip breaks, they may have them more regularly than younger grades.

Table 8. Proportion of children who have Crunch&Sip

Grade	n	Proportion with F&V breaks (%)	Average days per week
1	90	65.6	3.9
2	67	62.7	4.4
3	65	54.5	4.4
4	61	57.4	4.5
5	54	55.6	4.5
6	58	39.7	4.6

Respondents who indicated that their children have Crunch&Sip at their school were asked to indicate how frequently their children bring vegetables for Crunch&Sip. Table 9 provides the frequency results for each grade. Overall, respondents reported that 59% of the children with Crunch&Sip brought in vegetables at least once a week (22% daily). However, 16% never brought vegetables and 14% only brought them in once a month. Examining differences between the year groups, there appears to be a trend such that children in Grade 6 bring vegetables less frequently than those in Grade 1, although the difference was not significant.

Table 9. Frequency of bringing vegetables for Crunch&Sip

Year group	n	Never	Once a month	2-3 times a	Once a week	2-3 times a	Daily
			or less	month		week	
		%	%	%	%	%	%
1	59	6.8	15.3	16.9	13.6	22.0	25.4
2	42	11.9	16.7	16.7	14.3	16.7	23.8
3	36	22.2	13.9	8.3	16.4	25.0	11.1
4	35	14.3	14.3	8.6	20.0	20.0	22.9
5	29	27.6	13.8	3.4	13.8	20.7	20.7
6	23	30.4	4.3	4.3	17.4	17.4	26.1

ATTITUDE TO CRUNCH&SIP

Respondents were presented with a number of statements designed to measure their attitudes to Crunch&Sip. Two polarised statements were presented on either side of a 5-point scale and respondents were asked to select a point between the two statements. Table 10 presents the statements and the associated mean scores. A lower score indicates agreement with the statement on the left and a higher score indicates agreement with the statement on the right. Overall, respondents agreed strongly with the statements on the right, which indicates a positive attitude to Crunch&Sip. There were no significant differences by age or gender.

Table 10. Attitude to Crunch&Sip

	Mean	
Should be voluntary for all schools	4.1	Should be compulsory for all schools
Are a waste of time	4.3	Are very worthwhile
Make no difference to children's fruit consumption	4.2	Increase children's fruit consumption
Make no difference to children's vegetable consumption	4.2	Increase children's vegetable consumption
Make no difference to children's attitudes to fruit	4.2	Improve children's attitudes to fruit
Make no difference to children's attitudes to vegetables	4.1	Improve children's attitudes to vegetables
Are only appropriate for young children	4.3	Are appropriate for children of all ages
Should be a standalone activity	4.1	Should be integrated into health education taught in class

VEGETABLE FOCUS FOR CRUNCH&SIP

Several questions assessed the feasibility of and support for focusing on vegetable consumption for Crunch&Sip. Respondents were asked to indicate on a 5-point scale how supportive they would be of teachers encouraging children to bring mainly vegetables for Crunch&Sip. The sample mean was 4.3, suggesting that there was a high level of support for a vegetable focus for Crunch&Sip. There was no significant difference in the level of support by gender or age.

Respondents were then asked to explain why they were supportive/not supportive of a vegetable focus. The main responses are provided in Table 11. Among those who were supportive (n=220), the main reasons provided were that it teaches children to eat healthily (51%), it would encourage vegetable consumption (16%), other children eating vegetables has a positive peer influence (11%), and children and parents are likely to respond to the teacher's encouragement of vegetables consumption (11%). Female respondents were more likely to mention positive peer influence compared to male respondents (15% vs. 0%, $p<.001$). In addition, respondents under 35 years were more likely than those between 35 and 44 years to discuss that it would help children who do not get vegetables in the home environment (8% vs. 1%, $p=.043$).

Table 11. Reasons for support/non-support for a vegetable focus of Crunch&Sip

	Supportive n (%)	Neutral n (%)	Not supportive n (%)
Teaches them to eat healthily	116 (51.3)	2 (4.3)	-
Encourages vegetable intake	35 (15.5)	2 (4.3)	-
Children/parents listen to the teacher's opinion	24 (10.6)	2 (4.3)	-
Positive peer influence	24 (10.6)	-	-
Just like the idea	17 (7.5)	2 (4.3)	-
Increases concentration/decreases disruptive behaviour	16 (7.1)	-	-
Fruit is higher in sugar/vegetables are healthier	13 (5.8)	1 (2.1)	-
It would help those who don't get it at home or whose parents don't provide for lunch/recess	8 (3.5) [^]	-	-
Both fruit and vegetables should be encouraged	6 (2.7)	6 (12.8)	1 (9.1)
Children won't eat vegetables/prefer fruit	5 (2.2)	7 (14.9)	2 (18.2)
Vegetables are not as messy	5 (2.2)	-	-
School is for learning/it is not the teacher's responsibility	4 (1.8)	4 (8.5)	4 (36.4)
Won't make a difference	4 (1.8)	2 (4.3)	1 (9.1)
Vegetables not as tasty/boring	1 (0.4)	2 (4.3)	2 (18.2)
Financial burden	1 (0.4)	2 (4.3)	-
If focus on vegetables, fruit intake would decrease	1 (0.4)	3 (6.4)	1 (9.1)
It should be a choice	-	3 (6.4)	1 (9.1)
Don't know/don't have Crunch&Sip	10 (4.4)	9 (19.1)	1 (9.1)

#Significantly higher among females

[^]Significantly higher among those under 35 years

The main reasons provided by respondents who were neutral about a vegetable focus (n=47) were that both fruit and vegetables should be encouraged (13%) and children will refuse to eat vegetables (15%). Finally, those who were not supportive of a vegetable focus (n=10) frequently mentioned that children will refuse to eat vegetables (18%), children don't find vegetables as appealing (18%), and it is not the teacher's responsibility to encourage vegetable consumption (36%).

Respondents were asked to nominate the most difficult aspects of providing their children with vegetables for Crunch&Sip (see Table 12). A large proportion of respondents reported that there would be nothing hard about providing their children with vegetables (31%). Among those who did provide reasons, the most common responses were that it is difficult to provide variety for their children (13%), it is difficult to keep vegetables fresh (13%), and children will refuse to eat vegetables (10%). Female respondents were more likely to mention the difficulty of providing variety (16% vs. 7%, p=.041), while male respondents were more likely to report that they were unsure (8% vs. 2%, p=.009). There were no differences between the age groups.

Table 12. Difficulties associated with providing vegetables for Crunch&Sip

	n (%)
Nothing	90 (31.1)
Providing variety	39 (13.5)#
Keeping it fresh	39 (13.5)
That they won't eat them	28 (9.7)
To encourage them to eat it	25 (8.7)
Preparation time	24 (8.3)
The price	20 (6.9)
Finding something they like	16 (5.5)
Remembering to pack/buy	12 (4.2)
The mess	3 (1.0)
Don't know	12 (4.2)*

#Significantly higher among females

*Significantly higher among males

Finally, respondents were asked to nominate things that would make it easier to provide their children with vegetables for Crunch&Sip (see Table 13). The most common response was that nothing would make providing vegetables easier (27%). Other frequently reported suggestions were for the school to provide the food (10%), supplying suggestions for what to provide (9%), and increasing the affordability of vegetables (8%). Female respondents were more likely to suggest that it would be easier if the school provided the food (12% vs. 3%, $p=.014$), while male respondents were more likely to report being unsure about what would make it easier to provide vegetables (22% vs. 8%, $p=.001$).

Table 13. Parents' suggestions for support to provide vegetables for Crunch&Sip

	n (%)
Nothing	75 (27.3)
If the school provided the food or containers to store the food	27 (9.8)#
Suggestions/education about provision options	26 (9.5)
If vegetables were more affordable	23 (8.4)
Fridge access at the school to keep the vegetables fresh	15 (5.5)
Reminder to pack/buy	12 (4.4)
If the school had Crunch&Sip or made it compulsory	11 (4.0)
Pre-packaged/cut products	11 (4.0)
If the vegetables could be cooked or prepared at school	10 (3.6)
If they liked more vegetable options	9 (3.3)
Support from the teacher/school	8 (2.9)
Other children also eating them	5 (1.8)
Educating children about the benefits of eating vegetables	3 (1.1)
Don't know	37 (13.5)*

#Significantly higher among females

*Significantly higher among males

CONCLUSION

Overall, there was a high level of community support for the Crunch&Sip program among parents of children in the target age range. Attitudes to the provision of fruit and vegetable breaks during class time were very positive among the entire sample, and there was a high level of support for moving to a vegetable focus. The main reasons parents were supportive of a vegetable focus was that it would help teach their children to eat healthily and generally encourage greater vegetable intake. In addition, a large proportion of parents did not foresee any difficulties with providing their children with vegetables for Crunch&Sip. However, some parents raised concerns about children refusing to eat vegetables and some noted that both fruit and vegetables should be equally encouraged. In addition, some parents noted that if Crunch&Sip focused on vegetable consumption it would be difficult to continually provide variety for their children and to keep the vegetables fresh in hot weather. It was suggested that it would be easier to provide vegetables for Crunch&Sip if the school was involved with providing the food or information about interesting vegetable options.

A high proportion of parents reported satisfaction with their children's vegetable consumption and expressed positive attitudes to increasing vegetable consumption in children. However, the average servings of vegetables consumed per day is below the recommended average and less than a third of the children were regularly given vegetables to take to school. The results of this evaluation suggest that a vegetable focus for Crunch&Sip may be required to increase vegetable consumption among primary school children and that it is likely to be generally supported by parents.