Team report

Health for Thought, in partnership with Halo Health Asia
Behaviour Change Hackathon 2019

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Front cover photograph
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About the Behaviour Change Hackathon 2019 team reports

From 22 June to 3 August 2019, WISE - WASH in Southeast Asia ran a six-session hackathon where six teams of five youth[1] learned basic behaviour change theories and tools, and applied them to a real-world problem faced by their assigned non-governmental organisation (NGO) or social enterprise[2].

This series of Behaviour Change Hackathon 2019 (BCHack19) team reports describe the work achieved by the teams over their six-week journey. The reports are intended to share the outputs and findings obtained by each team, with hopes that other organisations and individuals working on similar causes may gain insights for their own work. They are also intended to demonstrate how applying the RANAS (risk, attitudes, norms, ability, and self-regulation) approach and the doer/non-doer analysis may help you design more effective behaviour change solutions.

Health for Thought

Health for Thought was assigned to work with Halo Health Asia on the following problem:

> *"Research by Temasek Polytechnic's Glycemic Index Research Unit in 2016 shows that low-income Singaporeans can face challenges in eating healthily due to budget constraints, which could in turn make them more vulnerable to diabetes. The National Health Survey conducted by the Ministry of Health in 2010 revealed that households earning less than S$2,000 a month had the highest prevalence of obese individuals, compared to those earning S$6,000 or more. Depending on their needs, low-income households could receive food rations from voluntary welfare organisations or Family Service Centres. Regular items in food packs provided include instant noodles and canned food - most of which are high in salt and fat content."*

This problem was presented to the team at the end of the first BCHack19 session. However, we ask the reader to bear in mind that the team's and project partner's understanding of the problem may have evolved over the six weeks, and that the proposed solution may not have targeted the problem that was initially presented.

Since the conclusion of BCHack19, Health for Thought has handed over the project to Halo Health Asia to take forward.

Other team reports

Health for Thought's report is the first in the series. Links to the remaining team reports will be included here when ready.

[1] In Singapore, youth is defined as persons aged between 15 and 35 (National Youth Council, 2019).
[2] For details on the problem statements that the teams worked on, as well as the tools and theories shared during each session of the hackathon, visit washinseasia.org/programs/capacitybuilding/bchack19.

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1. Problem statement and analysis

The participating teams' first task was to conduct a problem analysis and refine the problem statement presented by the project partner. Note that problem statements could evolve as team progressed through the hackathon.

A person's dietary habits is primed during a young age (e.g. Birch et al. [2007]; Birch & Fisher [1998]). While the type and variety of food children are exposed to can be influenced by a range of socio-ecological factors, it is largely dependent on parental influences.

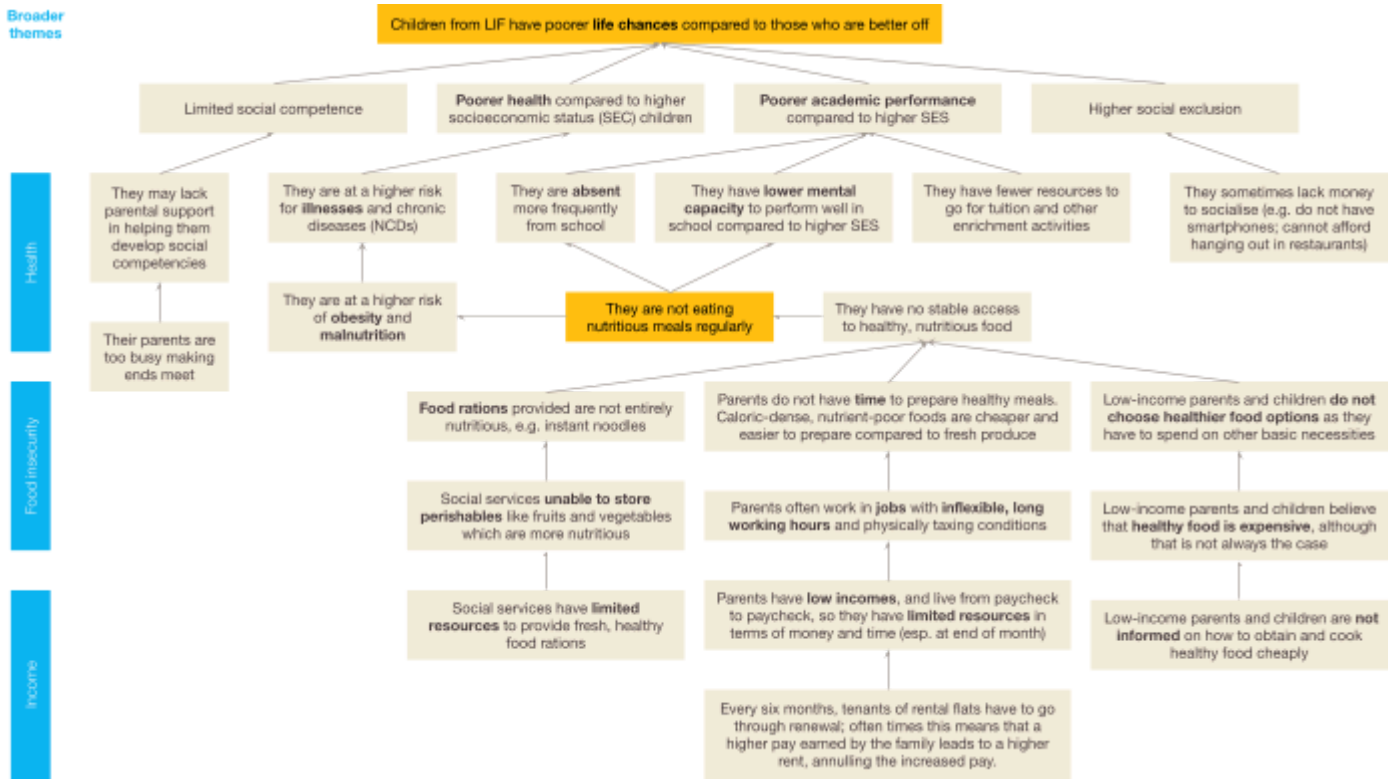

Figure 1: Problem tree illustrated by Health for Thought.

Every child has the right to adequate nutrition in order to achieve a good quality of life (UNCESCR, 1999). Fruit and vegetable intake are essential for providing key nutrients and vitamins for a child to grow. Existing literature (e.g. Manyanga et al. [2017; Ranjit et al. [2015]; Darmon & Drewnowski [2008]) has shown that children from families of lower socio-economic status (SES) have poorer-quality diets. In Singapore, studies (e.g. Tan [2016]) conducted on families with low income and living in rental flats have shown that budget constraints, time and the provision of calorie-rich and nutrient-poor rations have contributed to poorer dietary intake among these households.

Poorer nutrition results in poorer health which has knock-on effects on academic performance and social competence. This contributes to trapping lower SES households in the poverty cycle.

2. Target behaviour

Based on the problem analysis, their second task was to select a target behaviour.

Because the problem analysis indicated that individuals' diets are primed during a young age, and that children's dietary habits are largely dependent on parental influences, we chose to target children's diets through their caregivers. Specifically, our target behaviour statement was:

> *"Caregivers of children (aged 7 to 12) from low-income families to purchase fruits and vegetables for their children's consumption of two servings of fruits and two servings of vegetables daily."*

We chose two servings based on the number of servings recommended by the Health Promotion Board (2012) for children aged 7 to 12. In addition, we focused on Aljunied Group Representation Constituency (GRC) because Halo Health Asia had existing connections with communities and organisations in the constituency.

It should also be noted that the target behaviour comprises two separate but possibly correlated behaviours: purchase of fruits and purchase of vegetables.

3. Key behavioural determinants

After selecting a target behaviour, the teams moved on to identifying the key determinants that influenced whether their target group practiced the behaviour. This was achieved through conducting a doer/non-doer analysis: comparing the differences between members of the target group who practiced the behaviour versus those who did not.

We conducted structured interviews to identify key behavioural determinants that influenced whether caregivers with children aged 7 to 12 years old (in primary school) from lower-income households purchased fruits and vegetables frequently. Our assumption was that frequent purchases led to children consuming the recommended servings of fruits and vegetables daily.

3.1. Methodology

Target respondents were parents, grandparents or guardians taking care of children aged 7 to 12 years old living in rental flats. Caregivers had to be involved in purchasing groceries for the household majority of the time. Respondents were selected from two blocks of rental flats in Bedok North by members of the One Blue Heart food ration programme, who kindly agreed to support us with data collection.

The door-to-door interviews were conducted in pairs. A member from One Blue Heart introduced us before we started the interview. We asked questions in English and input responses directly through a pre-prepared Google Form. If necessary, an interviewer or member of One Blue Heart translated the questions and answers in the respondent's mother tongue. Upon completion, participants were given a food ration package provided by One Blue Heart as a token of appreciation for their time.

3.1.1. Questionnaire

To develop the questionnaire, we reviewed existing and grey literature on topics surrounding poverty, health and nutrition within Singapore. In particular, we wanted to identify questions that were relevant to the identification of key behavioural determinants. Questions were designed in reference to the RANAS (risk, attitudes, norms, ability, and self-regulation) model that was introduced during the hackathon. The questionnaire comprised three sections: (1) basic demographic data and grocery expenditure; (2) do-er and non-doer screening, and; (3) behavioural determinants influencing fruit and vegetable purchase.

Table 1: Behavioural determinants explored in the questionnaire

Determinant	Questions asked
Factual knowledge	• What do you think would happen if a child does not eat enough fruits/vegetables?
Instrumental beliefs	• What are the advantages of purchasing fruits/vegetables? • What are the disadvantages of purchasing fruits/vegetables?
Descriptive norm	• What % of parents/caregivers in Singapore do you think purchase two servings of fruits/vegetables for their child per meal?
Action knowledge	• What do you define as a healthy meal for a child? Describe what the meal consists of? • How many servings of fruits/vegetables do you think is recommended for a child to consume in a day? • Do you search for information about children's diet or what should children eat while growing up? • How easy or difficult is it for you to access information about children's diet? Why have you answered easy/difficult in the previous question? Where do you obtain such information from?
Access	• How easy or difficult is it for you to purchase adequate fruits and vegetables (i.e. enough for 4 servings a day) for your child? Why have you found it easy or difficult to purchase adequate amounts of fruits and vegetables?
Action planning	• Do you usually plan what fruits/vegetables to buy before going grocery shopping? • Do you regularly budget money to purchase fruits/vegetables when you shop for groceries?
Exploratory	• What goes through your mind when you are considering which groceries to buy for your family? Please tell us more about the most important consideration you have ranked. • Are there any fruits or vegetables that you usually avoid purchasing? If yes, please tell why. • If yes, what are your motivating factors? If no, what are the barriers?

Doer/non-doer screening: We defined doers as caregivers who indicated that they “always (100% of the time)” or “frequently (70% of the time)” purchased fruit or vegetables during each grocery trip. Non-doers were those who indicated that they “sometimes (50% of the time)” or “never (0% of the time)” purchased fruit or vegetables during each grocery trip.

Fruit and vegetable consumption: To validate whether the caregiver’s purchase of fruit and vegetables corresponded to their children consuming the recommended servings of fruit and vegetables, we asked caregivers to report the average number of servings of fruit and vegetables consumed by their child(ren) during each meal, using visual aids for sizes. Caregivers who reported that their children consumed at least one serving of fruit or vegetables per meal were classified as meeting the criteria.

Table 2: Reported consumption of fruit and vegetables within doer/non-doer groups

Group	Children consumed at least one serving per meal of:		*Ideal*
	Fruit % of respondents	**Vegetables** % of respondents	
Doer	91%	77%	*100%*
Non-doer	78%	43%	*0%*

If the frequency of fruit and vegetable purchases were a perfect proxy for the number of servings of fruit and vegetables that their children consumed, and assuming that the number of servings reported by the respondents were accurate, we would find that ‘doers’ would have 100% of respondents reporting that their children consumed at least one serving per meal , while ‘non-doers’ would have no respondents reporting that their children consumed at least one serving per meal.

In reality, while ‘doers’ were more likely to report that their children consumed at least one serving per meal, ‘non-doers’ were only somewhat less likely to report the same. This suggests that the frequency of purchases may not be a good indicator of whether children consumed the recommended servings.

A copy of the questionnaire can be found in the appendix.

3.1.2. Data analysis

The data was analysed on Google Sheets. Missing values were not accounted for in the analysis, and key behavioural determinants were defined as determinants where there was a difference of 15% or more between the doer and non-doer group. Similarly, insignificant determinants were determinants where the difference between the doer and non-doer group was less than 15%.

3.2. Results

We collected 20 responses in total. Most households had one or two children aged 7 to 12 years old. Their gross household income ranged from less than $1,000 per month to more than $2,500 per month. The majority of households had an income of $1,800-$2,500 per month (Table 3).

Table 3: Demographic profile of respondents

Household income $/month	**Respondents** Count
< 1,000	5
1,000 - 1,799	6
1,800 - 2,500	8
> 2,500	1
Total	20

Number of children aged 7-12	**Respondents** Count
1	8
2	8
3	1
4	2
5	1
Total	20

Household size	**Respondents** Count
3	5
4	2
5	4
6	3
7	2
8	2
9	1
Total	19

All 20 respondents purchased their groceries from the same supermarket, Sheng Siong , while also visiting the wet market, other supermarkets (NTUC) and smaller shoppers. According to a number of respondents, Sheng Siong was close to where they lived and had low prices. Households estimated spending between $25 and $167 (average of $72) per household member per month on groceries. We were not able to explore whether there was any correlation between household income per capita and grocery spending per household member because respondents found it difficult to provide precise estimates. This is because some family members had varying lifestyles and did not have meals together often.

3.2.1. Doers and non-doers

Based on our screening criteria, we identified a relatively even balance of doers and non-doers for fruit purchases (11 versus 9), while there was a higher proportion of doers compared to non-doers for vegetable purchases (13 versus 7) (Table 4). Of the 20 respondents, 8 households ‘always’ or ‘frequently’ purchased both fruit and vegetables.

Table 4: Number of doers and non-doers identified

Group	Fruit	Vegetables
Doer ('always' or 'frequently' purchased during grocery trip)	11	13
Non-doer ('sometimes' or 'never purchased during grocery trip)	9	7
Total	20	20

3.2.2. Determinants that influence fruit purchases

We identified descriptive norms and factual knowledge to be the most important behavioural determinants contributing to frequent fruit purchases among respondents, with a difference of 25% and 19% respectively. Insignificant determinants were access, action planning and coping planning (Table 5).

Table 5: Summary of behavioural determinants studied for fruit purchases

Determinant	Indicator	Difference
Descriptive norms	Perceives that the majority (70% or more) of parents/caregivers purchase two servings of fruits for their child per meal	25%
Factual knowledge	Knows the recommended number of servings of fruit for children	20%
Access	Ease of purchasing fruit is 1 to 3 versus 4 (on a scale of 1 to 4)	8%
Coping planning (budgeting)	Do you regularly budget money to purchase fruits?	6%
Action planning	Do you usually plan what fruits to buy when shopping for groceries?	-19%

Descriptive norms refer to the perceptions of behaviours are performed by the majority of others. Overall, 5 (or 25% of) respondents thought that the majority (70% or more) Singaporeans purchased two servings of fruits for their child per meal. Doers were more likely than non-doers (36% versus 11%) to think so, although the proportion was still relatively low (Table 6).

Table 6: Results of indicator for descriptive norms for fruit purchases

'What % of parents/caregivers in Singapore do you think purchase two servings of fruits for their child per meal?'	**Doer** Count (%)	**Non-doer** Count (%)	**Difference** %
Majority (70% or more)	4 (36)	1 (11)	25
Minority (50% or less)	7 (64)	8 (89)	
Total	11 (100)	9 (100)	-

Factual knowledge: We assessed whether respondents knew what the recommended servings of fruit for children were. Overall, 11 (or 55% of) respondents correctly stated that the recommended number of servings. Doers were more likely than non-doers (64% versus 44%) to be correct or overstate the number of servings (Table 7).

Table 7: Results of indicator for factual knowledge for fruit purchases

'How many servings of fruits do you think is recommended for a child to consume in a day?'	**Doer** Count (%)	**Non-doer** Count (%)	**Difference** %
Overstated the recommended number of servings	2 (18)	1 (11)	
Correctly stated the recommended number of servings	7 (45)	3 (33)	20*
Understated or did not know the recommended number of servings	4 (36)	5 (56)	
Total	11 (100)	9 (100)	-

*For the purposes of comparing the difference in factual knowledge between doers and non-doers, those that overstated the recommended number of servings were classified as knowing the recommended number of servings.

3.2.3. Determinants that influence vegetable purchases

We identified access, action control (planning) and descriptive norms to be the most important behavioural determinants contributing to frequent vegetable purchases among respondents, with a difference of 48%, 40% and 17% respectively. Insignificant determinants were action planning and coping planning (Table 8).

Table 8: Summary of behavioural determinants studied for vegetable purchases

Determinant	Indicator	Difference
Access	Ease of purchasing vegetables is 1 to 3 versus 4 (on a scale of 1 to 4)	48%
Instrumental beliefs	Ranked nutrition as their top consideration when purchasing groceries	40%
Descriptive norms	Perceives that the majority (70% or more) of parents/caregivers purchase two servings of vegetables for their child per meal	17%
Coping planning (budgeting)	Do you regularly budget money to purchase vegetables?	2%
Action planning	Do you usually plan what fruits to buy when shopping for groceries?	-11%

Access: We asked respondents to rate the ease or difficulty in purchasing adequate amounts of fruits and vegetables (i.e. two servings of fruits and two servings of vegetables) on a scale of 1 to 4 (with 1 being the easy and 4 being very difficult). Overall, 12 (or 60% of) respondents rated the ease of purchasing fruits and vegetables as '1'. Doers were more likely than non-doers (77% versus 29%) to rate '1' (Table 9).

Table 9: Results of indicator for access for both fruit and vegetable purchase

Ease of purchasing fruits and vegetables	**Doer** Count (%)	**Non-doer** Count (%)	**Difference** %
Rated '1' (easy)	10 (77)	2 (29)	48
Rated '2', '3' or '4' (where '4' is very difficult)	3 (23)	5 (71)	
Total	13 (100)	7 (100)	-

Instrumental beliefs refer to beliefs about the monetary and non-monetary costs and benefits of a behaviour. We found that respondents who frequently purchased vegetables (doers) were far more likely to rank 'nutrition' (54% versus 14%) as their top consideration when purchasing groceries for their family (Table 10). Many caregivers wanted their family members and children to be healthy, and knew that nutrition was what the body required.

Table 10: Considerations of respondents when purchasing fruit and vegetables

What goes through your mind when considering which groceries to buy for your family? (Rank priorities)	**Doer** Count (%)	**Non-doer** Count (%)	**Difference** %
Ranked 'nutrition' as their top priority	7 (54)	1 (14)	40
Ranked 'availability of time' as their top priority	2 (15)	2 (29)	14
Ranked 'comfort food/cravings' as their top priority	2 (15)	2 (29)	14
Ranked 'how filling it is' as their top priority	0 (0)	1 (14)	14
Ranked 'price' as their top priority	2 (15)	1 (14)	1
Total	13 (100)	7 (100)	-

In addition, our question about what constituted a healthy meal revealed that 14 (or 70% of) respondents identified vegetables as an essential component. On the other hand, fruit was only identified by 5 (or 25% of) respondents. As one respondent explained, fruit contained sugar which would make children hyperactive if they ate too much.

Besides nutrition, price was also a significant consideration. Three respondents cited their budget and financial situation, while one explained that different supermarkets priced products differently. This was partially related to how filling the food was, because if the food was filling, family members would not eat or crave more food. At the same time, a number of children were 'picky' about their food, and the caregiver did not want the food to be wasted. Finally, for respondents who had limited time, such as one whose Dad (in the household) worked 13 hours a day, six days a week, the ease of preparing the food was a key factor.

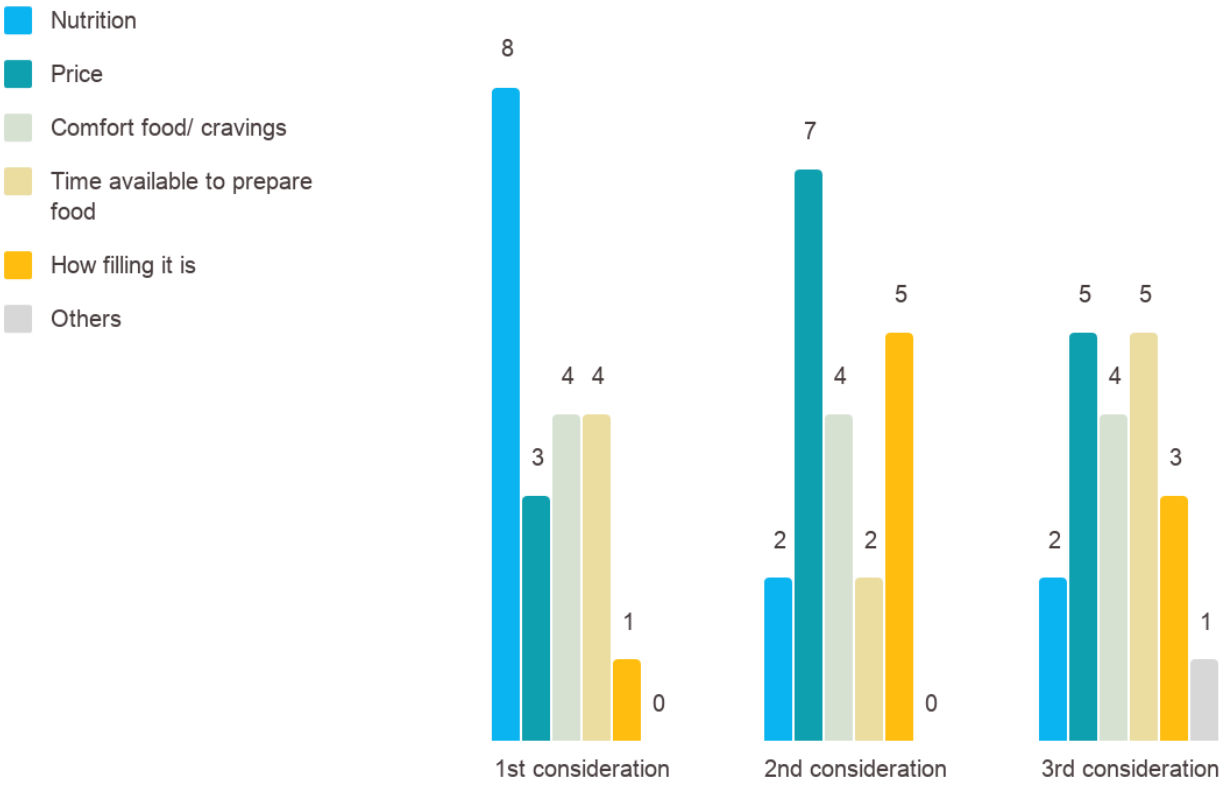

Figure 2: What goes through your mind when you are considering what groceries to buy for your family?

Descriptive norms: Overall, 5 (or 25% of) respondents thought that the majority (70% or more) Singaporeans purchased two servings of vegetables for their child per meal. Doers were more likely than non-doers (31% versus 14%) to think so, although the proportion was still relatively low (Table 11).

Table 11: Results of indicator for descriptive norms for fruit purchases

'What % of parents/caregivers in Singapore do you think purchase two servings of vegetables for their child per meal?'	**Doer** Count (%)	**Non-doer** Count (%)	**Difference** %
Majority (70% or more)	4 (31)	1 (14)	17
Minority (50% or less)	9 (69)	4 (57)	12
Did not answer, or refused to answer	-	2 (29)	N/A
Total	11 (100)	9 (100)	-

3.3. Discussion

We found differences in the behavioural determinants that influence fruit versus vegetable purchases. These differences can be attributed to a range of factors, such as price, availability and descriptive norms. However, we observed one recurring theme during our interviews: that caregivers' purchasing behaviours are largely motivated by the food preferences of their children regardless of whether or not following through with the child's food preference would benefit the child in terms of nutrition.

3.4. Limitations

There were three main limitations to our doer/non-doer survey.

3.4.1. Sample size

Due to time and resource constraints, we were only able to collect 20 responses from low-income households who live in rental flats. This may not be representative of the low-income population in Singapore, but provides an indication of the determinants which affect the purchases of caregivers specific to the two blocks in Bedok North. Future surveys could involve advice and administrative assistance from town councils to identify a wider population pool and to enable random selection of prospective participants.

3.4.2. Biases

First, there may have been selection bias as participants were picked by members of the One Blue Heart food ration programme, although without a better understanding of the programme and its participants, it is difficult to pinpoint what these biases may be. Second, the nature of the questions largely depended on the recall ability of respondents, leading to recall biases. The interview also took a considerable amount of time to complete, possibly leading to fatigue. Third, social desirability bias may have played a role in participants who wanted to avoid the impression that they were neglecting the health of their children.

3.4.3. Language barriers

Some respondents had difficulty understanding a number of the questions that were asked in English. Interviewers who were unable to speak Malay had to rely on the One Blue Heart programme staff that accompanied them. These may have led to discrepancies and loss of information during the interview and recording process.

4. Proposed solution

Having identified the key behavioural determinants that influenced their target behaviour, the teams prepared a pitch proposing behaviour change activities based on the behaviour change techniques that would target the key behavioural determinants.

Based on the results of the doer/non-doer analysis, we designed a solution that utilised a range of behaviour change techniques to encourage caregivers to purchase fruit and vegetables based on the key determinants that influenced their purchasing behaviour: descriptive norms, factual knowledge, and access.

4.1. Behaviour change techniques

Table 12 identifies the behaviour change techniques utilised in the proposed solution.

Table 12: Behaviour change techniques applied in the proposed solution

Factor	Behaviour change technique	Proposed activities
Descriptive norms	Informing about others' behaviour	• Public cooking competition to showcase residents who cook healthily • Publicise the health recipes of other caregivers in Aljunied
	Prompt public commitment	• Posting meals on social media
Factual knowledge	Present facts Present scenarios	• Alter the supermarket and grocery basket to provide bite-sized information about fruits and vegetables servings for individual/children
Access	Provide infrastructure	• Provide standard recipes to follow • Set up a Happy Healthy Corner in supermarkets to make it convenient and easy for caregivers to buy the recommended amounts of fruits and vegetables

4.2. Project design

The proposed project comprises three phases.

In the first phase, a healthy cooking competition will be organised in the heartlands. The competition will include caregivers cooking affordable and healthy meals as well as children acting as judges. The aims of the competition are to demonstrate that fellow caregivers within the community are purchasing and cooking fruit and vegetables for their children (descriptive norm) and that it is possible to cook healthy meals in an affordable way (factual knowledge). It will also provide an opportunity for us to compile recipes that are affordable, healthy and tasty for children.

In the second phase, the project aims to scale up this perception of the norms as well as knowledge of cooking healthy meals through the dissemination of recipes and the redesign of the supermarket experience. The top ten recipes from the cooking competition will be distributed throughout the community to showcase what fellow caregivers are doing for their children (descriptive norms and action knowledge) (Figure 3). We also hope to create a space ('Happy Health Corner') in the supermarket where the ingredients for these recipes can be placed within the same space or in close proximity so that caregivers can easily put together these healthy recipes (access) (Figure 4).

In the third phase, the project will sustain engagement of fruit and vegetable purchases by prompting public commitment. We propose that caregivers post their meals on social media in order to stand a chance to win vouchers.

4.3. Implementation considerations

Partnerships would need to be established with local community - such as the town council - in order to organise the competition and reach out to residents, and the local supermarket in order to incorporate the recipes into the supermarket experience.

5. Moving forward

At the conclusion of the hackathon, the project was handed over to Halo Health Asia to take forward.

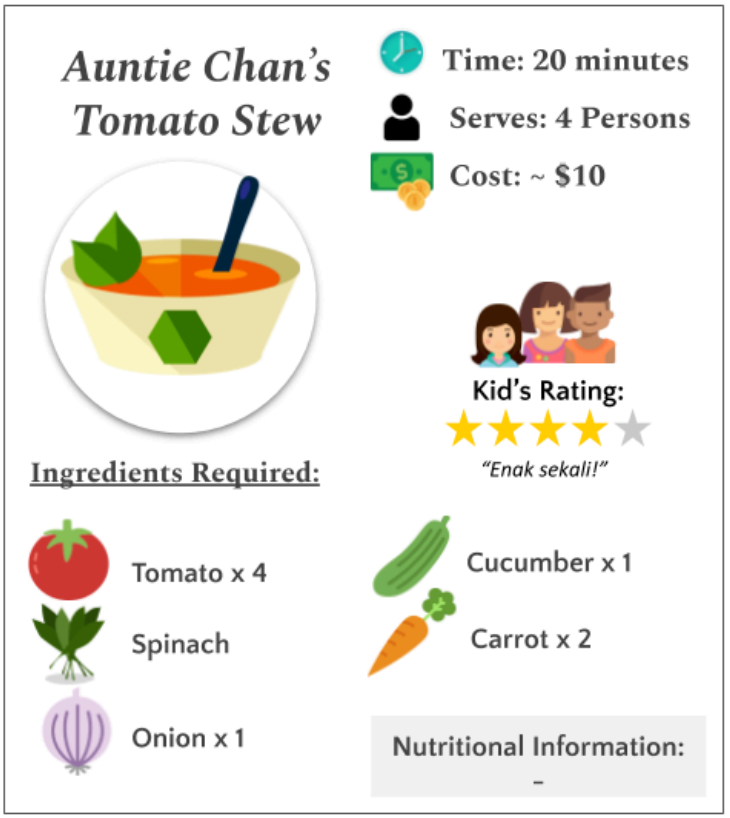

Figure 3: Illustration of a recipe.

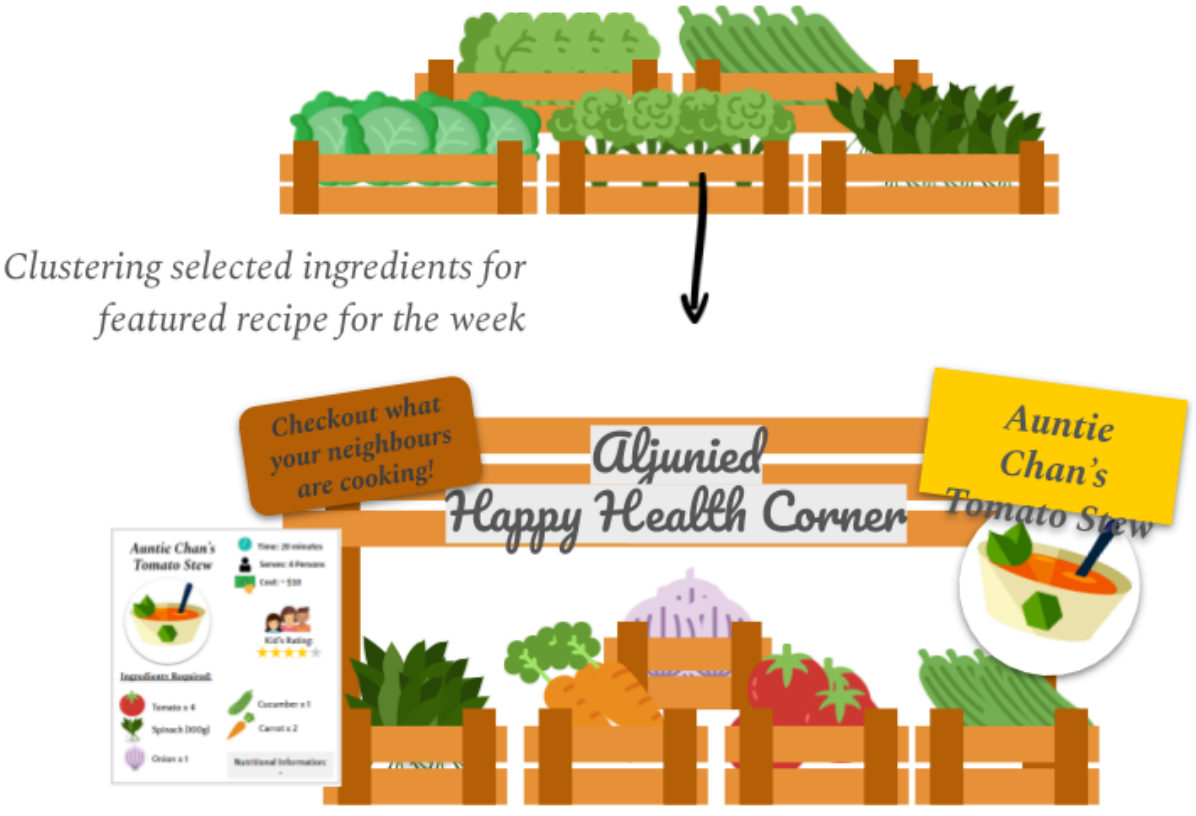

Figure 4: Illustration of a 'Happy Healthy Corner'.

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Appendix

Appendix 1: Questionnaire

Questionnaire

Section 1: Introduction

We are conducting a survey to understand the purchasing habits of caregivers in Singapore. We will be using the results to propose a new project to help families improve their nutrition. Therefore, your response will be very valuable to us.

All information will be kept anonymous. All individual responses are kept confidential. All data will be deleted after the project ends. You are free to choose whether you want to participate in the survey. At any time, if you are uncomfortable with any of the questions, you may choose not to answer or stop the survey.

1. Are you a caregiver of children aged 7 to 12 years old currently?
   - Yes - Next question
   - No - End survey

2. Do you buy groceries which will go into preparing at least 5 meals a week for the child in your family/your children? (Are you the main person that buy groceries for your family? If not, could we speak to someone who is responsible for this?)
   - Yes - Next question
   - No - End survey

3. How many children aged 7 to 12 are living in your household? (How many of the kids in your household is going to primary school?) _____

4. If you are comfortable with sharing: What is your gross monthly household income? (In one month, how much money does your family earn? The value of gross income from all sources (before deductions for income tax, superannuation, etc.) for all household members.)
   - < $1,000 (Less than $1,000 monthly)
   - $1,000 to $1,799
   - $1,800 to $2,500
   - > $2,500 (Above $2,500 monthly)
   - Not comfortable with sharing
   - Don't know

5. How many people are there living in your household as of now? _____

6. About much money do you spend on buying groceries on average in a month? $_____

7. About how much do you spend on food for each of your children (7-12 years old) each month? $_____

Section 2: Food Purchase Habits

In this section, we want to know what are the items you regularly purchase when you go for grocery shopping for the family.

8. Where do you usually shop for your groceries? (Select all that apply)

- | Wet markets
- | Mama Shop/Mini Mart/Provision Shops
- | Online Grocery Shopping (e.g. Redmart, Honest Bee)
- | Supermarket - NTUC
- | Supermarket - Sheng Siong
- | Supermarket - Giant

9. On average, how frequently do you purchase groceries for your family?
   - | Daily
   - | 2-3 times weekly
   - | Weekly
   - | Once every 2 weeks
   - | Once a month
   - | Depends on circumstances

10. On a regular grocery shopping trip, how often do you buy these items for your children?

	Never (0% of the time)	Sometimes (30%)	Frequently (70%)	Always (100%)
Instant noodles				
White bread				
Vegetables				
Fruits				
Canned food (sardines, baked beans, mushrooms)				
Rice				

11. In one week, how often do you cook meals (lunch and dinner) for your children/the children in your house? (Meals cooked in a day (2 to 3 times) * Days cooking at home (7 Days a week)) _____

12. What do you define as a healthy meal for a child? Describe what the meal consists of? (What is your ideal of a healthy meal for a children? Can you tell me more about what it means? Like what would be meal be composed off and how it is prepared?)

    _____

    _____

    _____

13. On average, how many servings of vegetables do you buy for your child to eat every meal? (One serving of vegetable is amount the amount shown in the cups below.)
    - | 0
    - | 0.5
    - | 1
    - | 2
    - | 3
    - | Other: _____

14. On average, how many servings of fruits do you buy for your child to eat every meal? (One serving of fruit is amount shown in the picture below)
    - | 0
    - | 0.5
    - | 1
    - | 2
    - | 3
    - | Other: _____

Section 3: Understanding the factors that guide food purchases - PART I [Fruits]

In this section, we want to understand what influences or affects the purchasing habits that parents make when shopping for groceries for the family.

PART I - Fruits Consumption Patterns. The first part are questions pertaining to fruits.

15. Do you usually plan what fruits to buy before going grocery shopping?
    - | Yes, always
    - | Yes, sometimes
    - | No

16. Please tell us why you answered always/sometimes/no in the previous question

    _____

17. What do you think would happen if a child does not eat enough fruits? (What are some short-term and long-term effects you can think of?)

18. How many servings of fruits do you think is recommended for a child to consume in a day? _____

19. What % of parents/caregivers in Singapore do you think purchase 2 servings of fruits for their child's diet per meal? (From 0 to 100% or what proportion? For every 10 parents, how many do you think will purchase enough fruits for their children?)
    - | None of them (0%)
    - | Some of them (~30%)
    - | Half of them (50%)
    - | Most of them (~70%)
    - | All of them (100%)

20. What are the advantages of purchasing fruits?

    _____

21. What are the disadvantages of purchasing fruits?

    _____

Section 4: Understanding the factors that guide food purchases - PART II [Vegetables]

PART II - Vegetable Consumption Pattern. The first part are questions pertaining to vegetables

22. Do you usually plan what vegetables to buy before going grocery shopping?
    - | Yes, always
    - | Yes, sometimes
    - | No

23. Please tell us why you answered always/sometimes/no in the previous question

24. What do you think would happen if a child does not eat enough vegetables? (What are some short-term and long-term effects you can think of?)

25. How many servings of vegetables do you think is recommended for a child to consume in a day? _____

26. What % of parents/caregivers in Singapore do you think purchase 2 servings of vegetables for their child's diet per meal? (From 0 to 100% or what proportion? For every 10 parents, how many do you think will purchase enough vegetables for their children?)
    - None of them (0%)
    - Some of them (~30%)
    - Half of them (50%)
    - Most of them (~70%)
    - All of them (100%)

27. What are the advantages of purchasing vegetables? (What are the good points about buying vegetables?)

    _____

28. What are the disadvantages of purchasing vegetables? (What are the bad points about buying vegetables?)

    _____

Section 5: Understanding the factors that guide food purchases - Part III

29. Are there any fruits or vegetables that you usually avoid purchasing? (If yes, please tell why. If no, speak to the next question)

    _____

30. How easy or difficult is it for you to purchase adequate fruits and vegetables (i.e. enough for 4 servings a day) for your child?
    - 1 - Easy
    - 2
    - 3
    - 4 - Very difficult

31. Why have you found it easy or difficult to purchase adequate amounts of fruits and vegetables?

    _____

32. Do you search for information about children's diet or what should children eat while growing up?
    - Yes - Go to Section 6
    - No - Go to Section 7

Section 6: Getting Resources and Information about Child Nutrition

33. How easy or difficult is it for you to access information about children's diet? (Is it easy or hard for you to find places to learn about what a child should eat while growing?)
    - Very easy
    - Easy
    - Difficult
    - Very difficult
    - Not applicable, I don't do this

34. Why have you answered easy/difficult in the previous question?

    _____

35. Did the information change how you purchasing fruits and vegetables for your child?
    - Yes
    - No
    - Not applicable

36. Where do you obtain such information from? (Was it from the TV? the Internet? Reading magazines and books?)

    _____

Section 7: Planning the visit to the groceries

In this section, we want to know more about what are the things you consider in your mind when you are going for grocery shopping.

37. What goes through your mind when you are considering which groceries to buy for your family? (Rank top 3)
    - Comfort food/cravings _____
    - Nutrition _____
    - Price _____
    - Time available to prepare food _____
    - How filling it is _____
    - Others: _____. _____

38. Please tell us more about the most important consideration you have ranked.

    _____

39. Do you regularly budget money to purchase fruits when you shop for groceries? (Do you set aside a specific amount of money to buy fruits when you go shop for groceries?)
    - Yes, I've done so a few times but not consistently
    - Yes, I consciously buy healthier options wherever possible
    - No, I've never done so

40. Do you regularly budget money to purchase vegetables when you shop for groceries? (Do you set aside a specific amount of money to buy vegetables when you go shop for groceries?)
    - Yes, I've done so a few times but not consistently
    - Yes, I consciously buy healthier options wherever possible
    - No, I've never done so

41. If yes, what are your motivating factors? (Do specify what either it is in relation to fruits or vegetables)

    _____

42. If no, what are the barriers? (Do specify what either it is in relation to fruits or vegetables)

    _____

Section 8: Other findings and notes

43. Additional notes

    _____

    _____

    _____